

ABSTRACT

BRANCH, KENNETH ARNOLD. Centennial Campus Middle School: A Case Study. (Under the direction of Dr. Paul F. Bitting.)

The purpose of this study was to document and analyze a unique effort at creating a responsive middle school program for young adolescents and a school-university partnership, both of which are found at Centennial Campus Middle School in Raleigh, North Carolina. The research was necessary for four reasons. First, the planning that was undertaken in preparation for opening the school required more than ten years and represented an unprecedented effort in collaboration between the Wake County Public School System and North Carolina State University. Second, the result of the planning was a school whose program is based on the most current middle level education research and is intended to be truthfully responsive to the needs of young adolescents. Third, Centennial Campus Middle School represents a school-university partnership that is unlike the traditional partnership models that exist across our nation. Fourth, the tale of Centennial Campus Middle School is a story that should be documented for the contribution it makes to other educators who endeavor to create a new middle school and a university partnership.

Through document analysis, interviews, and participant observation, I determined that successful collaboration was critical not only to planning the school's program, but also to the operationalization of the planners' vision. Although the research literature offers insight into the

characteristics of middle schools, this study documents the challenges of actually developing such characteristics as age-appropriate instruction, flexible scheduling, and a collaboration model that permits teachers to plan instruction in a manner that is meaningful for young adolescents. Finally, this study identifies Centennial Campus Middle School as unique among school-university partnerships nationwide. In cultivating such a new model, this analysis determined that the potential success of such a partnership rests on the collaborative framework that is constructed between the two institutions and the value of the “boundary spanner” in sustaining the level of inter-institutional collaboration that is necessary.

**CENTENNIAL CAMPUS MIDDLE SCHOOL:
A CASE STUDY**

by
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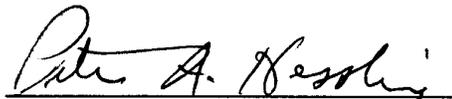
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BIOGRAPHY

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I fully acknowledge and am exceptionally appreciative of the dedication of the Centennial Campus Middle School faculty and staff. These devoted educators work tirelessly everyday responding to the changing needs of young adolescents. It is their unwavering commitment that this dissertation celebrates.

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List of Terms

- CCMS Centennial Campus Middle School. In some of the planning documents, especially the concept document found in Appendix A, the name of the school appears as Centennial Campus Magnet Middle School or CCMMS.
- WCPSS Wake County Public School System
- NCSU North Carolina State University
- Triangle J Council of Governments
A voluntary organization of municipal and county governments in North Carolina's Region J (Chatham, Durham, Johnston, Lee, Moore, Orange and Wake counties). It is one of 18 regional councils established in 1972 by the General Assembly. The organization works to meet the region's needs in a wide range of areas, from land-use planning, economic development and emergency medical services support to environmental protection, programs for the aging and information services. See <http://www.tjcog.dst.nc.us/> for additional information.
- RTP Research Triangle Park, North Carolina.
See <http://www.rtp.org/> for additional information.
- BOE Wake County Public School System Board of Education
- Centennial Campus North Carolina State University's research and development center. See <http://centennial.ncsu.edu/> for additional information.
- COEP College of Education and Psychology at North Carolina State University.
- COE College of Education at North Carolina State University, formerly College of Education and Psychology

Chapter One

INTRODUCTION

*Do not go where the path may lead,
go instead where there is no path and leave a trail.*

Ralph Waldo Emerson

Centennial Campus Middle School opened in July 2000 with little fanfare. The school, uniquely situated on the campus of North Carolina State University, began operation with 450 students in grades six through eight and a teaching staff of 36. As the buses delivered their charges that rainy first day in the school's life, and the staff, dressed in State red shirts, welcomed them, few realized what was happening. Yes, a new school was opening in a glittering building that was state-of-the-art, but it was the program within the building that set the school apart. After more than ten years of planning and the involvement of over 150 compassionate educators, a carefully crafted program was being introduced – a school-university partnership that would speak to the demands of adolescence and of being adolescent.

This purpose of this case study was to analyze and document the creation of Centennial Campus Middle School (CCMS). The research was needed for four reasons. First, the planning that was undertaken in preparation for opening the school required more than ten years. This

planning process represented an unprecedented effort in collaboration between the Wake County Public School System, which is a large urban school district, and North Carolina State University, a major research university. Second, the result of the planning was a school whose program is based on the most current middle level education research and is intended to be truthfully responsive to the needs of young adolescents. The school was designed to be a true middle school. Third, and in addition to the above, CCMS represents a school-university partnership, which is unlike the traditional partnership models that exist across our nation. Finally, the tale of Centennial Campus Middle School is a story that needed to be documented for the contribution it makes to other educators who endeavor to create a new middle school and a university partnership.

Background

In 1988, around a conference room table located in offices of the Triangle J Council of Governments in Research Triangle Park, North Carolina, a group of local government representatives held a discussion and, subsequently, released a position paper stating the need for a world-class regional educational system (Triangle J Council of Governments, position paper, 1988). Triangle J envisioned a collaborative business/school/government educational partnership that would showcase the vision and resources of the region and make it a model for educational planners across

the nation. As its first step toward creating a world-class regional education system, the Council pictured a series of model schools that would bring together technology and innovative organizational techniques within the walls of one school. These model schools would serve as demonstration sites that could expose teams of educators and policy makers to a vision of what education could and should be in tomorrow's schools.

Five years later and as a direct result of this initiative, the Wake County Public School System (WCPSS) and North Carolina State University (NCSU) agreed to enter into a partnership to create a model middle school that would be located on NCSU's Centennial Campus. This agreement evolved after three years of "on again, off again" (G. Richeson, WCPSS, memorandum, April 19, 1993) planning that involved discussions between WCPSS and NCSU. The agreement became a reality after the two institutions muddled through the tasks of making the notion of a model middle school less "nebulous" (R. Wentz, WCPSS, memorandum, May 28, 1992), of defining how collaboration between the two institutions would be shaped, and of defining the roles of the school and university players (May 28, 1992).

Between 1993 and 1995, over 150 educators representing the school system and university, delegates from local and state government, and members of the community held a series of planning meetings to craft the details of a model middle school program. They agreed that "Though

WCPSS and NC State University have collaborated on numerous projects over the years, this endeavor goes well beyond others in scale, breadth, and commitment...CCMS will...be the first middle school in the country to combine the resources of a respected school system, a major university and a technologically advanced campus comprised of business, industry, education and government agencies” (WCPSS and NCSU, CCMS concept document, 1995, p. 3).

A formal concept document describing Centennial Campus Middle School (CCMS) and its partnership with NCSU was presented and approved by the WCPSS Board of Education in 1995 (see Appendix for the concept document).

The plans for CCMS continued to be refined and the construction details were hammered out between 1995 and 1999. The school, which opened in the summer of 2000, is a Wake County Public School System-funded school uniquely situated on the campus of North Carolina State University’s Centennial Campus. The school’s mission is to provide an exemplary learning center for young adolescents and to enhance their education with the resources of a major research university. Its mission is to achieve the following:

1. An educational experience that is firmly grounded in the most current research on responsive middle level education and adolescent development;

2. Instructional interaction between university personnel and students across all academic disciplines working in large groups, small groups, or with individual students;
3. Demonstrations within the area of expertise of the university personnel that reinforces skills and concepts being taught by the regular teacher in the classroom;
4. Opportunities for students to interact with university facilities in a manner that enhances or enriches their educational experiences; and
5. Research opportunities for university personnel representing the ten different colleges comprising the university (WCPSS & NCSU, CCMS concept document, Nov. 1995, p 10).

Statement of Purpose

The purpose of this study is four-fold. The first purpose is to document the planning process, which represented an unprecedented effort in collaboration between the Wake County Public School System and North Carolina State University. This decision-making process lasted for more than ten years and involved over 150 concerned citizens. The second purpose of this study is to demonstrate how the vision for CCMS, as crafted by the planning committee, has been operationalized. The third purpose is to describe the school-university partnership that exists between CCMS and NCSU and explain how it enhances the students' educational program. In

accomplishing the fourth purpose, this study contributes to the existing literature on middle school education and school-university partnerships.

Significance of the Study

Centennial Campus Middle School was conceived from discussions that began in 1988. The original idea was to create a model middle school program that would serve as a demonstration site for other educators. After WCPSS and NCSU agreed to co-develop the school, the focus turned to designing a program that was truly responsive to the needs of young adolescents. This is important to note as the research on middle level education includes volumes on the definition of the middle school concept and what constitutes an effective middle school, but may fall short on how such programs are actualized in practice.

This study also contributes to the body of literature that exists on school-university partnerships. Timpane (1998), writing about school reform and higher education noted, “Because of the limited research base, it is difficult to draw conclusions about the contributions of collaborative programs [between schools and universities]...” (p. 66). According to Patterson, Michelli, and Pacheco (1999) the literature on partnerships is “quite limited” (p. 30). Osguthorpe, Russell, Harris, Harris, and Black (1995) stated, “Those who will be initiating partner schools need examples and cases, but they also need to see the principles and recommendations

that grow out of the successes and frustrations evident in the cases, which ultimately confirm the value of the project” (p. xix).

After three years in operation, this analysis of the experiences of the Centennial Campus Middle School staff in cultivating and sustaining a school-university partnership will be useful to other schools, school systems, and universities who endeavor to do the same.

In summary, this study establishes that Centennial Campus Middle School represents an educational program that was designed to respond to the wide-ranging needs of young adolescents. Concurrent with the aforementioned, this study confirms the challenges of creating such a truly responsive middle school program. Finally, this dissertation validates that the partnership that exists between CCMS and NCSU represents a model for school-university partnerships that does not exist elsewhere in our nation.

Research Questions

In an effort to establish that Centennial Campus Middle School represents a responsive middle school program, a unique school-university partnership, and a model for other schools or school systems to follow, this study focused on the following questions:

1. How did the concept that underlies Centennial Campus Middle School and its partnership with North Carolina State University come into existence?

2. How was the school's program actually implemented and what shape does it take today?
3. What are the implications from the establishment of this school that may assist other educational leaders in creating responsive middle school programs and/or school-university partnerships?

Limitations of the Study

This is a case study of one school. I analyzed documents from the Wake County Public School System and North Carolina State University that relate to the planning of CCMS. Since the original discussion about creating the school was held fifteen years ago, some documents were lost or destroyed over the years. Therefore, I based my analysis on the documents that were available to me. I also analyzed documents assembled since I began employment as principal of CCMS including those created by staff members of the school.

Due to the number of people who were involved in the planning of Centennial Campus Middle School, representing all of their contributions and thoughts was not feasible. Therefore data from a small sampling of those involved in the planning process were included. The role the person played and the length of time he or she was involved in the process determined the sample selection. It was my goal to gather data from those who played key roles over an extended period of time (one year or longer).

Finally, as the principal of Centennial Campus Middle School, I was responsible ultimately for the shape of the school's program. The concept document that was provided by the planning committee was used as a guide for creating the program that is currently in place at CCMS (see Appendix A for a copy of the concept document). Because of my position in the school, I was involved in many of the activities that are related in this study, and I know well several of the participants that I interviewed. I included my personal experiences and reflections as principal of the school. I monitored my own subjectivity and remained aware of my own biases through the use of journals and notes. It was my desire to tell a story that is still unfolding and, in doing so, contribute to the educational literature on middle schools and school-university partnerships.

Biography

As Hurricane Hazel ravaged eastern North Carolina in October 1954, my mother gave birth to me, her third child. Within days, because of the noise I could produce, I gained the nickname of "Hurricane" from the grocery delivery man. After that tempestuous introduction into the world, life settled down. I spent my first 17 years in Rich Square, North Carolina, living a small-town life comparable to that of Opie Taylor. My father was not the sheriff, but he was the rural letter carrier, and my mother later became the postmaster. Attending one school through grade eight and then being

bussed 20 miles to a recently-consolidated high school seemed so normal. In 1970, an eastern North Carolina court determined that we, the students of Rich Square, would have to return to the high school in town and assist in the desegregation process. As a result I graduated from W. S. Creecy High School in 1972, one of eight white students in a class of 65.

From Creecy I ventured to Chapel Hill and obtained an undergraduate degree in education with a concentration in social studies and teacher certification for grades seven through twelve. Three days after graduation in May 1976, I left the United States for a three-year stint teaching at the Universal American School in Kuwait City, Kuwait. Opening my eyes to the world, the experience changed my life. Returning in 1979, I was hired by the Edenton-Chowan School System to teach in an alternative high school. There I received my first experiences working with at-risk students.

In 1981, I packed away my teaching certificate and moved to Washington, DC. I worked for the U.S. Committee for UNICEF developing and implementing educational programs designed to raise the community's awareness of the work of the United Nations Children's Fund. After two years, I was hired by The American University to coordinate its cross-cultural orientation programs for graduate students entering the United States for study under the Fulbright Legislation. Although both jobs were rewarding, I determined that North Carolina was where I belonged and moved back in 1985.

I landed a job at the North Carolina School of Science and Mathematics working in the development office, but within three years returned to the classroom. It was this experience teaching eighth grade social studies at Neal Middle School in Durham County, N.C., that turned me on to middle schools. Fortunately, I took the job at the time that Durham was moving from a junior high school model to the middle school model. The school system developed a middle school philosophy statement and worked diligently to implement the characteristics of the middle school concept. We, the teachers, got on board quickly and grew excited about the work we were able to accomplish as interdisciplinary teacher teams.

While teaching, I enrolled in the Master of School Administration Program at NCSU and received a master's degree and administrative certification in 1992. I was hired as an assistant principal by Hawley Middle School in Granville County and moved to a similar position at Carnage Middle School in Raleigh within six months. From Carnage, where I learned about Wake County's magnet schools program, I moved to the principal's position at Zebulon Middle School. A world away, Zebulon Middle School represented to me a neighborhood school in its warm and inviting community spirit.

With eleven years of working in middle schools under my belt, I requested and was granted a transfer to Lynn Road Elementary School in Raleigh. It was this school experience that taught me the look and feel of a

nurturing environment. The Lynn Road family was embracing and willing to allow me the time I needed to learn how elementary schools operate.

It was just after my first year at Lynn Road, the summer of 1999, that I got the news that Centennial Campus Middle School would be opening the following year and that a principal was being recruited. I got a copy of the school's concept document and knew that it would be the right place for me (see Appendix A for a copy of the concept document). Embarrassed and feeling a bit guilty, I approached my supervisor to garner support for applying for the principal's position. She demonstrated understanding and shared that she would support me in pursuing this dream. Luckily the Lynn Road staff members were equally understanding when I informed them that I had been offered the job.

The opportunity to finalize plans for and open Centennial Campus Middle School was indeed a dream. For one who is passionate about the shape of our middle schools and compassionate about young adolescents, I knew that this would be a once-in-a-lifetime chance.

I consider myself truly fortunate to have had the experiences that have shaped the story of my life to this point. Although other wonderful chapters will be written, none will contain the same exciting adventure as the one that is shared, in part, in this study.

Chapter Two

REVIEW OF RELATED LITERATURE

Introduction

A review of the research literature is necessary to build a theoretical framework for this case study of Centennial Campus Middle School. The theories or concepts as they exist in the research serve as scaffolding for the underlying assumption that young adolescents succeed more easily in a school environment that is responsive to their developmental needs. Additional scaffolding from the research supports the idea that models for school-university partnerships exist, pertaining primarily to teacher training and professional development of teachers, and are challenging to implement and sustain.

This literature review is divided into two sections: the middle school concept and school-university partnerships. The evolution of middle schools from the junior high school model and its significance for young adolescents is well documented in the literature. The first section of this review is subdivided by several of the components of the middle school concept: development of the concept, organizational structure, personnel and leadership, curriculum and instruction, exploratory programs, advisory programs, and athletics.

The purpose of the second section of the literature review is to wade into the waters of school-university partnerships by defining the concept

and providing a historical perspective on the evolution of such partnerships. This review also defines collaboration as it has existed between schools and universities that have entered into traditional partnerships and investigates some of the challenges that have hindered the formation of meaningful alliances.

Middle School Concept

Adolescence

According to the Carnegie Council on Adolescent Development's *Turning Points* (Jackson & Davis, 2000):

Early adolescence is a time of discovery, when young people have significantly greater capacity for complex thinking. They are more able to be out in the world, to participate in the wider universe of activities. They are better equipped to make important decisions affecting themselves and others, but their lack of experience leaves them vulnerable. They are better able to fend for themselves, yet they are caught up almost daily in a vortex of new risks. (p. 7)

This explanation of adolescence assists in establishing the fact that the period of time in a child's life between the ages of 10 and 14 is one of great change and uncertainty. It also establishes that these youngsters deserve additional attention and guidance as they muddle through the challenges of an awkward age. Lipsitz (1993) wrote, "The rate of growth

during early adolescence is second only to that in infancy. From then on, there is no time in life that rivals early adolescence for rapidity of growth – or for self-consciousness about it” (p. 6).

Concurring with this statement from Lipsitz, the National Middle School Association’s *This We Believe* (1995) noted:

Young people undergo more rapid and profound personal changes during the years between 10 and 15 than at any other period of their lives. Although growth in infancy is also very extensive, infants are not the conscious witnesses of their development as are young adolescents. (p. 6)

Adolescents, therefore, are not only experiencing drastic changes on all fronts – physical, intellectual, emotional, and social – but they are also aware of these changes and must be guided through a period in their lives that will shape them as adults.

Development of the Middle School Concept

According to the literature, the school experience for adolescents should be in step with their unique developmental needs. In considering the shape of the education experience for these “developmentally diverse young adults” (Wavering, 1995, p. 236), one may consider this adolescent’s view of school:

Every 50 minutes, perhaps 6 or 7 times each day, assemble with 30 or so of your peers, each time in a different group, sit silently in a chair in neat, frozen rows, and try to catch hold of knowledge as it whizzes by you in the words of an adult you met only at the beginning of this school year. The subject of one class has nothing to do with the subject of the next class. If a concept is confusing, don't ask for help, there isn't time to explain. If something interests you deeply, don't stop to think about it, there's too much to cover. If your feelings of awkwardness about your rapid growth make it difficult to concentrate, keep your concerns to yourself. And don't dare help or even talk to your fellow students in class; that may be considered cheating. (p. 236)

Lipsitz (1993) shared:

The challenge to schools is to work with people in an age group who have in many ways been isolated from the rest of the age span and to work with them at a time when they seek to extend their personal autonomy from adults and simultaneously to identify with them. (p. 7)

The literature supports the need for education programs designed for the young adolescent to be child-centered and focused on development needs. According to Manning (2000), the Association for Childhood Education International (ACEI) defines the middle school as a school organization that "...emphasizes 10- to 15-year-olds' education and overall

well-being by providing developmentally appropriate and responsive curricular, instructional, organizational, guidance, and overall educational experiences in a safe, violence-free, and peaceful environment...” (p. 1).

Specifically, the middle school experience for young adolescents should be “needs-responsive” (Jackson & Davis, 2000, p. viii) and should include the following:

- Small communities of learners;
- Core academic program;
- Success experiences for all students through the elimination of tracking, promotion of cooperative learning, and flexibility in arranging instructional time;
- Teachers and administrators who are empowered to make decisions especially about instructional programs;
- Personnel who are expert at teaching young adolescents... (pp. viii-xi)

Manning also shared that the ACEI supports these recommendations and added that today’s middle school should:

- Base educational experiences on young adolescents’ physical, psychosocial and cognitive development, ...and their learning styles, multiple intelligences, and individual differences.

- Provide exploratory programs so that young adolescents will have opportunities to discover their talents, abilities, and values.
- Ensure a positive and safe learning environment that emphasizes cooperation, collaboration, and peaceful existence...in other words, an environment that shows care and concern. (Manning, 2000, p. 1)

As the junior high school model was transformed into the middle school model over the past 40 years, the middle school concept resulted in an educational experience that attempts "...to meet the development needs of children in the in-between years..." (George, Lawrence, & Bushnell, 1998, p. 228). George et al. noted that "...there are a few central elements that most middle level educators accept as desirable for such schools" (p. 228).

Among the most important of these elements are:

1. Every student has a home base, a teacher-advisor, and an adequate guidance program.
2. The school day is scheduled flexibly, often with some form of block schedule.
3. Interdisciplinary teaming is the preferred method of instructional organization.

4. Often, a form of school-within-school, house, or similar strategy is used to group teams of teachers and student into longer-term relationships.
5. Instruction is active, varied, and problem-centered, and students progress continuously at their own rates.
6. A wide range of age-appropriate exploratory classes and activities are provided.
7. Grouping for instruction is flexible and primarily heterogeneous.
8. A governance system balances spirited leadership with authentic shared decision making. (pp. 228-229)

The middle school is not an advanced elementary setting; neither is it a little high school. According to Stevenson (1991), “Colleagues and parents sometimes confront us with the fervent view that the primary task at the middle level should be to get kids ready for high school” (p. 14). Lounsbury (1991) added that middle schools exist to “...guide, support, and educate youth during life’s most critical phase, a significant and demanding task in and of itself. And if it does that successfully the high school will be negotiated successfully” (p. 6). Finally, Wavering (1995) noted that “...a teacher’s job is get people ready for the world, not just the classroom beyond the current grade level” (p. 235).

In summary, the development of the middle school concept demonstrates “...the long-standing realization and belief of many educators

that schooling at this level should be responsive to young adolescents' changing nature" (Stevenson, 1992, p. 13).

Organizational Structure of the Middle School

Flexible Scheduling

As education experiences for young adolescents moved from the junior high school model to those represented in the middle school concept, there was an "...attempt to move from a fragmented, disjointed, subject-by-subject curriculum to an integrated interdisciplinary approach" (Walley & Gerrick, 1999, p. 72). This approach included the manner in which time is allocated during the school day and the manner in which teachers of middle school students team for instructional purposes.

In a conscious effort to steer clear of the strict scheduling of the junior high school model, leaders in the middle school movement looked at different forms of flexible schedules. "These schedules organize classes and educational experiences to allow for daily variations...flexible schedules permit the allocation of time and effort according to the needs of the students and the nature of the course content" (Manning & Bucher, 2001, p. 102).

According to Arnold (as cited in Manning & Bucher, 2001):

In middle school, flexible schedules should provide for the diversity of students' cognitive and affective abilities, as well as their need for

exercise and rest. This means allowing time for exploratory programs, advisor-advisee programs, extended blocks of uninterrupted instructional time in which a variety of activities can occur, teacher planning time, integration of subjects, varied lengths of instructional time, and innovation and experimentation with varied time schedules. (p. 102)

When in proper operation, the use of flexible scheduling empowers teachers to allocate instructional time during the course of a school day based on the needs of the students they teach. They are allowed to make decisions about the length of lessons and the instructional strategies employed based on their students' requirements rather than a bell schedule. The literature does not address well the constraining factors that surround teachers' and administrators' ability to flex their instructional schedules while accommodating all curricular and special student services guidelines. This study determines that factors do exist that constrain teachers' ability to consistently adapt daily instructional schedules to meet students' needs.

Interdisciplinary Teacher Teams

The interdisciplinary teacher team is an "...organization [that] fits the middle school perfectly" (George, Lawrence, & Bushnell, 1998, p. 231). Typically two, three, four, or five teachers representing various subject areas form a team and accept the responsibility of teaching a single group of

students. According to George et al., “Teachers may organize the division of labor within the team in a variety of ways. They always share the same students, and usually the same schedule, space in the building, and interest in all the subjects taught by the team” (p. 231).

Erb (as cited in Manning & Bucher, 2001) noted that there are four elements in the “effective ITO [interdisciplinary team organization]: common planning time, shared students, common block of time schedule, and spatial proximity of team members’ classes” (p. 112).

As these teams became more popular throughout middle schools, certain issues were identified as being critical to the teams’ success.

According to Stevenson (1992), these issues are:

1. Governance: how the team is organized for decision making.
2. Team Identify: what the team stands for.
3. Operating Procedures: daily, monthly, or term calendar schedule.
4. Communication: how decisions are conveyed within and beyond the team.
5. Recognition: how accomplishment is recognized.
6. Curriculum: what is to be taught and learned.
7. Accountability: how evidence about team effectiveness is collected.
8. Teacher Efficacy: benefits to the adults involved. (pp. 275-276)

Stevenson explained that once these issues are addressed, “...the full potential of this [team] organizational plan [can be] achieved...” (p. 275).

The challenge for middle school teachers has been, for the most part, in moving from “...working alone in an isolated classroom to working with a team of teachers...” (Capelluti & Brazee, 2003, p. 1). For the first time, teachers left the “...security of their isolated classrooms for a setting that requires collaboration, teamwork, and ongoing communication with other teachers” (p. 1). With this stated, middle school educators have reported that there are advantages of working on teams. These include “...increased program flexibility, improved interpersonal relationships, fewer discipline problems, and easy scheduling” (George et al., 1998, p. 231).

Another advantage for teaching on an interdisciplinary team, according to Lounsbury (1992), is that the teachers “...are involved in a broader range of decision-making affecting a greater range of school-wide issues than are the teachers in other settings where decision-making is more often limited to their own classrooms” (p. 9).

Lounsbury also noted that:

...teaming does permit certain conditions to exist that are directly related to instructional effectiveness and student success. It reduces isolation and anonymity; it allows teachers to know their students quite well; and it permits teachers to “gang up” on students in positive ways to affect their learning. (1992, p. 29)

The successful operation of interdisciplinary teaching teams is facilitated through the use of flexible scheduling as described in the

previous section. As Walley and Gerrick (1999) noted, “Planning time is the first critical issue [for interdisciplinary teams]” (p. 110). Stevenson (1992) stated that:

Time is a precious commodity in schools, but to have a successful team, teachers must meet daily for as much as an hour in order to plan programs, address problems, discuss students, and coordinate the myriad of details that are a part of the operation of a successful team. (p. 214)

Walley and Gerrick (1999) believe:

Teams must have separate team planning time. The more time a team has to meet and work collaboratively, the more effective the team can become. A master program must be developed that gives teachers a team planning period in addition to the normal personal planning period. Many schools move into teaming by simply giving team teachers the same conference period. That is a formula, if not for failure, certainly for very limited success. (p. 110)

Effective middle schools plan the instructional schedule not only to meet the developmental needs of young adolescents, but also to meet the collaboration needs of the students’ teachers. The literature is rich with documentation that adequate planning time is required for successful implementation of a responsive middle school program. I was not able to identify within the middle school literature specific strategies for ensuring

that such time is used in a meaningful, efficient, and productive manner. This study suggests a framework for collaboration among teachers that permits them to communicate with each other and to plan as a team.

Personnel

Effective teachers of middle school students share common characteristics. According to Manning (2000), they should be "...trained in essential middle school concepts, the early adolescent period, and the characteristics of child-centered middle schools" (p. 10). In addition, teachers of sixth, seventh, and eight grade students "...must be genuinely committed to...middle schools and to providing young adolescents with educational experiences that demonstrate caring, concern, and nurturing" (p. 10). Finally, these educators "...need continuous learning experiences that contribute to their ability to teach young adolescents" (p. 10).

The effective middle school is student-centered and all adults in the school fulfill a counseling role. "This is different from the role of the elementary teacher who may serve 'in loco parentis,' ...This...role...is also different from that of the high school teacher who is a specialist in a particular content area..." (Compton & Hawn, 1993, p. 9).

Middle school teachers can be neither strict specialists with knowledge in only one discipline, nor can they be generalists, with some knowledge about different subjects. "The need... is for a teacher with some

depth in at least two content fields, who can recognize a connection among the various subject areas, and who is knowledgeable about sources of materials that may provide answers to problems posed in the process of instruction” (Lounsbury, 1992, p. 9).

The success of a middle school squarely rests on the shoulders of its teachers. They must understand adolescent development, be committed to creating and sustaining a nurturing environment with the child at the center and value collaboration with their colleagues.

Curriculum and Instruction

The developmental needs of the young adolescent require special attention in the design of curriculum and its delivery in the middle school classroom. As Stevenson (1992) noted:

Expecting every student to learn the same material at the same time as a result of the same exposure is contradictory to their developmental diversity. Expectations that young adolescents will thrive in a teacher-focused, textbook-centered classroom hour after hour, day after day is at the very least naïve. (p. 13)

The overarching goal of middle school instruction “...is to achieve a balance between teacher-directed and student-directed learning. Teaching is intended to be active and problem-focused, implemented through a variety of instructional strategies” (George et al., 1998, p. 231).

According to Clark and Clark (2000), the organization of curriculum in the middle school should be “...more developmentally responsive...” (p. 3).

This can be accomplished by:

- Reorganizing the scope and sequence in many cases to include interdisciplinary approaches;
- Implementing alternative organization structures (teams, alternative scheduling);
- Making connections (interdisciplinary approaches that emphasize relationships across the subject areas, connecting with the community); and
- Incorporating appropriate instructional strategies (cooperative learning, project/problem-based learning, technology). (p. 3)

With this stated, the literature supports the notion of a continuum at the middle school level on which curriculum design and instructional delivery exists (Beane, 1997; George et al., 1998; and Jacobs, 1997). On the far left of the continuum is disciplines-based curriculum. As found in traditional junior high schools, this point along the range represents instruction in a compartmentalized fashion with each subject being delivered to the students in isolation of the other subjects. According to George et al. (1998), the “...disadvantage [of this approach] relates to the disconnectedness of the curriculum and the student day,... [and that] it is

not easily made congruent with the characteristics and needs of young adolescent students” (p. 340).

As one moves toward the center of the continuum, one reaches a point that has been:

...identified as either ‘interdisciplinary’ or ‘thematic.’ ...Typically, teachers choose a theme within which all of their separate disciplines can find a comfortable place. That is, teachers configure their lessons so that concepts, skills, and topics they would normally cover in isolation are taught as part of a ‘unit.’ (George et al., 1998, p. 340)

The advantages to this interdisciplinary approach include allowing teachers to feel “comfortable about not neglecting their own priorities... [as they] continue to teach topics in which they have background and training...” (George et al., 1998, p. 340). Also the research indicates the students who participate in the interdisciplinary approach to instruction are “...often energized and enthusiastic...” (p. 341) about this innovative teaching technique.

On the far right end of the continuum is integrated curriculum. George et al. (1998) describe this as similar to the interdisciplinary approach, however, “...the topics that make up the content of the unit are not immediately recognizable as the separate subjects of the traditional curriculum” (p. 341).

According to Manning and Bucher (2001), “Integrated curriculum can be an effective means for addressing young adolescents’ developmental characteristics” (p. 5). This manner of delivering the curriculum to middle school students “... integrate[s] subject matter usually taught separately (e.g., literature, history, science) under a single integrated curricular theme. Rather than only learning isolated facts, young adolescents can begin to see the relationships among, and interconnectedness of curricular areas” (p. 5).

In summary, the power of interdisciplinary and integrated instruction lies in the:

...intertwining of subject matter [which] not only reinforces what is taught, but also more closely resembles life outside the classroom where the subjects we teach are not found in isolation, but, rather, are constantly interacting with and overlapping each other.

(Lounsbury, 1992, p. 73)

The literature supports interdisciplinary and integrated learning for young adolescents and acknowledges the importance of helping middle school students make connections across the disciplines and with the world around them.

Exploratory Programs

The concept of including exploratory programs in school programs designed for young adolescents is not a recent phenomenon. According to Anfara and Brown (2000):

In 1918, the Commission on the Reorganization of Secondary Education authorized the junior high to help ‘the pupil explore his own aptitudes and to make at least provisional choices of the kinds of work to which he shall devote himself.’ (p. 2)

Exploration at the middle school level is considered “developmentally responsive and academically challenging” (Brazee, 2000, p. 1). All students should be provided opportunities “...to assess their strengths and weaknesses, to identify likes and dislikes and areas in which they may eventually want to develop expertise” (Lounsbury, 1992, p. 17). According to Stevenson and Carr (1993), “...activities that involve reading, writing, listening, and speaking should be balanced at least in equal measure by ones that involve doing” (p. 34).

Over the years middle schools have responded to this need by building exploratory programs designed to stimulate students’ interest. Course offerings typically include visual arts, foreign language, careers exploration, computers and technology, business education, life skills, dance, drama, and music.

Compton and Hawn (1993) noted “Exploratory activities should be fairly short in duration, provide opportunities for students to participate actively, hold students accountable for completing activities, but not impose mastery as a criterion” (p. 137). In addition, “exploratories [should] take into consideration the shorter attention spans and diverse interests of young adolescents. Learners are allowed to change topics often before their interest wanes” (Manning & Bucher, 2001, p. 93).

Finally, effective exploratory programs are also valuable because they show “...students the interconnectedness of their learning experiences by linking courses across the curriculum” (George & Alexander as cited in Anfara & Brown, 2000, p. 2).

Strong middle schools include varied opportunities for students to explore personal interests. These exploratory adventures help students determine paths to pursue and offer balance to the academic component of the school day.

Advisory Programs

The idea of including advisory programs in school programs for young adolescents is consistent with the literature on the middle school concept. As stated at the beginning of this chapter, every child in a middle school should have one adult, in addition to his or her teachers, with whom he or she is able to connect. “The rationale behind advisory programs...is that all

students know they have at least one adult who knows them personally, cares about their happiness and success, and is willing to listen to their problems and concerns” (Muth and Alverman, 1999, p. 6). Also, according to Irvin 1992, “Young adolescents, faced with dilemmas and pressures on a daily basis, need positive relationships” (p. 163).

According to Manning and Bucher (2001), advisory programs:

...can be defined as efforts to include each student in small, interactive groups with peers and staff to discuss school, personal, and societal concerns. The advisory program provides young adolescents with a sense of ‘family,’ or belonging to a group. (pp. 8-9)

The heart of advisory programs lies in its “...emphasis on the social and emotional development of every adolescent in a middle level school” (Irvin, 1992, pp. 162-163).

These programs require between 15 and 30 minutes of the school day and may occur at any time. There is some thinking that the best time for the students to meet with their advisors is in the morning (Arnold as cited in Manning, 2000, p. 13; and Muth & Alvermann, 1999, p. 6).

The challenge that many middle schools face in providing effective advisory services for their students is in protecting the time that the advisor has to meet with his or her students. The literature does note that frequently the time may fall victim to encroachment by administrative tasks (Muth & Alvermann, 1999, p. 7).

Advisory programs offer middle school students an additional opportunity to build a relationship with an adult. The adult serves as mentor and, perhaps academic coach, to the student. Middle schools are frequently confronted by the need to protect the time devoted to advisory programs in an effort to ensure they remain student-focused.

Intramurals and Interscholastic Athletics

The literature on middle school education encourages emphasis on helping to develop healthy adolescents (George and Alexander, 1993; Stevenson, 1992; Allen, Splittgerber, & Manning, 1993; and Romano & Georgiady, 1997). To address this need, many middle schools provide physical education opportunities for their students during the school day and an intramurals program or an interscholastic athletics program after the school day. As schools moved from the junior high school model to that of the middle school, some of the research began to point to the value of intramurals over the value of an interscholastic athletics program.

According to Romano and Georgiady (1997):

At no other point in childhood is there greater potential for physical injury than during the middle school years, where physically immature boys and girls may engage in sports and other activities for which they simply do not have sufficient muscle mass, joint stability,

or coordination. Intensely competitive interscholastic sports are not advisable for the middle school years. (p. 22)

For established middle schools, the idea of eliminating an interscholastic athletics program in favor of an intramurals program has become a “volatile” issue according to Wavering (1995, p. 409). Although he continues by stating, “Many educators and physicians who deal directly with middle school youth are more cautious in their appraisal of the benefits of interscholastic sports for this age group” (p. 409).

The first advantage to an intramurals program is that it is open to all students in the middle school. Maximizing student participation in the program is emphasized instead of “...advanced levels of performance” (Compton and Hawn, 1993, p. 132). A second advantage to intramurals is that such a program can accommodate “The wide range of development associated with...early-developing and late-developing students in every grade” (p. 132). The third advantage is healthy competition. When properly implemented, “Competition is maintained at an appropriate level and fun for everyone... is provided” (p. 133).

Although many middle schools maintain popular interscholastic athletics programs, the research indicates that an active and inclusive intramurals program may be more appropriate for young adolescents.

Summary

This section of the literature review focused on defining the middle school concept. The introduction of middle schools and their evolution over the past 40 years is clearly represented in the literature. From this well of research, this section of the literature review has drawn from the areas that focus on the development of the middle school concept as well as middle school organization and structure, personnel, curriculum and instruction, exploratory programs, advisory programs, and athletics.

School-University Partnerships

Introduction

The purpose of this section of the literature review is to wade into the waters of school-university partnerships by defining the concept and providing a historical perspective on the evolution of such partnerships. This review also defines collaboration as it has existed between schools and universities that have entered into traditional partnerships and investigates the challenges that have hindered the formation of meaningful alliances.

In completing the above, the reader will understand the meaning of laboratory schools, which was the title given to the first efforts in our nation at such partnerships, and that Centennial Campus Middle School was never intended to serve as such. The reader will also gain insight into the

different collaborative models that have been established as well as the challenges that have faced those who implement such models.

Background

The planners of Centennial Campus Middle School envisioned a school that would "... involve an entire population of students, teachers, and parents frequently engaged with faculty, students, and facilities of each of [North Carolina State University's] ten colleges, as well as its corporate and government partners on Centennial Campus" (WCPSS & NCSU, CCMS concept document, 1995, p. 3). As they mapped out these uncharted waters, they suggested that CCMS would not be a clone, that it would not be a laboratory school. Rather the school's program would reflect a unique effort at allying a middle school not only with a College of Education but also with *each* of the colleges that comprise a major research university. These include the NCSU Colleges of Engineering, Design, Textiles, Graduate Studies, Management, Agriculture and Life Sciences, Humanities and Social Sciences, Physical and Mathematical Sciences, and Veterinary Medicine. "CCMS will...be the first middle school in the country to combine the resources of a respected school system, a major university, and a technologically advanced campus..." (p. 3).

These efforts at collaboration and partnership program implementation represented an endeavor that is not documented in the

related literature. Although school-university partnerships have been present in our country since the mid-nineteenth century, the model that is present on the campus of North Carolina State University represents a new standard.

Origin and Definition of School-University Partnerships

“As a class, laboratory schools were created during a period of nationwide interest in and support of the idea that some schools were needed as sites for testing, demonstrating, or disseminating instructional innovations” (National Association of Laboratory Schools, 1991, p. 35).

Campus laboratory schools have been operated and supported by teacher education institutions throughout the nation for more than a century (p. 38).

“Schools established as handmaidens to teacher-training schools have gone by many names: model school, practice school, experimental school, laboratory school, and campus school” (National Association of Laboratory Schools, 1991, p. 143). At first they were linked to normal schools, “...those barely respectable institutions pioneered in the United States between 1840 and 1880 when the idea gained currency that teachers should be trained” (p. 143).

Special-purpose laboratory schools have been an important part of the American system for preparing teachers since the mid-1880s. Most are

on campuses of their sponsoring institutions and are often called “campus schools” or “campus laboratory schools” (National Association of Laboratory Schools, 1991, p. 1).

The National Association of Laboratory Schools, 1991, cited an example of the early standing of campus schools in the Normal School Act of 1857 passed by the Pennsylvania Legislature:

Before designation as an official state normal school, each had to provide a ten-acre campus, housing for three hundred students, an auditorium capable of seating a thousand persons, rooms for libraries, a minimum of six faculty members, and *a model school of one hundred students*. (National Association of Laboratory Schools, 1991, p. 2)

According to DePencier (1967):

An event which was destined to have a profound effect on educational thinking and practice throughout America took place at the University of Chicago in January 1896. That event was the opening of the Dewey School, [which became known] as the Laboratory Schools of the University of Chicago. Conceived by the world-famous educator, John Dewey, the school was truly a laboratory from its inception – an experimental school where his theories of education could be put into practice, tested, and scientifically evaluated. (p. 13)

The Dewey School was:

...wholly experimental, founded as a testing ground for John Dewey's educational theories... The conception underlying the school is that of a laboratory... It [had] two main purposes: (1) to exhibit, test, verify and criticize theoretical statements and principles, (2) to add to the sum of facts and principles in its special line. (DePencier, p. 14)

According to Timpane and White (1998), there were several "waves" of school-university partnership activity in the second half of the twentieth century (p. 60). The first wave got under way "...in the 1960s and early 1970s when colleges and universities came under increasing pressure to increase the number of minority students enrolling at the undergraduate level" (p. 58). Colleges and universities provided two types of programs, "informational and preparatory" (p. 59). Although these programs were called "partnerships," they were typically only "...collaborative in name..." (p. 59).

The second wave of school-college partnership activity got under way in the 1980s, in the aftermath of *A Nation at Risk* (National Commission of Excellence in Education, 1983). "This group of programs was motivated by concerns about quality, and aimed at helping teachers to achieve teaching excellence" (Timpane and White, 1998, p. 60).

Many of the new programs were based loosely on the model of the Bay Area Writing Project, a UC Berkeley-based program to help good writing teachers become better writers and better teachers of writing. The core

idea was a “ ‘teachers-teaching-teachers’ ” or “ ‘trainer-of-trainers’ approach...” (Timpane and White, 1998, p. 61).

During the 1980s, Claire Gaudiana, then University of Pennsylvania professor and later Connecticut College president, led a national effort to spawn “Academic Alliances” (Ravid and Handler, 2001, p. 61). These alliances were organizations that brought college faculty members together on a regular basis with K-12 teachers in the same discipline to discuss developments in the field and share teaching strategies. There are now more than 500 such alliances across the country, most of them organized quite informally and operating on shoestring budgets (p. 61).

The Holmes Group was formed in the late 1980s by ninety-six major research universities who sought to improve pre-service and in-service teacher education through increased ties to colleges of arts and sciences and to school-based educators (Ravid and Handler, p. 24). “...Professional development schools, designed as a part of the Holmes Group movement, provide a clinical setting for pre-service education, engage in professional development for practitioners, promote and conduct inquiry that advances knowledge of schooling, and provide an exemplary education for a segment of P-12 students” (p. 24).

The concept of the professional development school (PDS) emanated from the work of The Holmes Group. “PDS's were conceptualized as schools where school faculty and administrators and university students and faculty

would be involved in the processes of: (1) mutual deliberation on problems with student learning and their possible solutions; (2) shared teaching in the university and schools; (3) collaborative research on the problems of educational practice; and (4) cooperative supervision of prospective teachers and administrators” (Westbrook, Wheatley & Rogers, 2000, pp. 2-3).

According to Verbeke and Richards, 2001, “The professional development school combines the traditional K-12 and university collaboration of placing student teachers with experienced K-12 teachers and once-prevalent university laboratory schools, which provided for long-term internship opportunities and demonstration teaching” (pp. 9-10).

The National Network for Educational Renewal (NNER) currently includes more than five hundred such schools in its most recent directory, and the research states that there are many others that are part of other initiatives (Sirotnik and Goodlad, 1999, p. 208).

Although the professional development school (PDS) may be the most often mentioned in the literature on school-university partnerships, three additional models have been identified in the literature. According to Ravid and Handler, 2001, the other school-university collaboration models that surface from the literature are the following:

1. Consultation – In the consultation model, one or several university faculty members work with one or several teachers. The faculty members, in the role of consultant, provide resources and expertise to

the teachers. Other stakeholders may also join as collaborators. The main purpose of this partnership is improvement of instruction and teachers' professional development.

2. One-to-one collaboration – A university faculty member works as equal partner with a school based practitioner in this model. Both partners plan and carry out the research project.
3. Multiple collaboration project teams under one umbrella organization acting as the facilitator – In this model, each project team is composed of university-based and school-based educators, as well as other possible stakeholders. Collaboration takes place within each team, and across teams. (pp. 3-4)

What I did not find in the literature is information on partnerships between schools and universities that transcend this traditional alliance. That is, partnerships that exist to encourage participation by university faculty and students in the total education of school students. This participation, as is present at Centennial Campus Middle School, may take the shape of:

1. Instructional interaction between university personnel and students across all academic disciplines with large groups, small groups, or individual students;

2. Demonstrations within the area of expertise of the university personnel that reinforces skills and concepts being taught by the regular teacher in the classroom;
3. Opportunities for students to interact with university facilities in a manner that enhances or enriches their educational experiences;
4. Resident opportunities for university personnel on a school's campus; and
5. Research opportunities for university personnel representing the different colleges comprising a university (WCPSS & NCSU, CCMS concept document, Nov. 1995, p 10).

In summary, the creation of Centennial Campus Middle School represents an unprecedented effort in collaboration between a school system and a major university. According to the report issued by the Model Middle School Planning Committee, the joint WCPSS and NCSU working group that developed the concept for CCMS, "Though WCPSS and NCSU have collaborated on hundreds of projects over the years, this endeavor goes well beyond others in scale, breadth, and commitment" (WCPSS & NCSU, CCMS planning committee report, June 1995, p. 4). The CCMS concept document, released in 1995, further noted, "CCMS will...be the first middle school in the country to combine the resources of a respected school system, a major university and a technologically advanced campus

comprised of business, industry, educational and government agencies” (p. 3).

Collaboration in School-University Partnership Programs

The need for collaboration between our nation’s universities and K-12 schools is well documented in the literature. Ernest Boyer, in Gross, 1988, described the need for collaboration between universities and K-12 schools by stating:

Today with all the talk about education excellence, schools and colleges still live in two separate worlds. Presidents and deans rarely talk to principals and district superintendents. College faculty members do not meet with their counterparts in public schools, and curriculum reforms at every level are planned in isolation. It’s such a simple point – the need for close collaboration – and yet it is a priority that has been consistently ignored. Universities pretend they can have quality without working with the schools, which are, in fact, the foundation of everything universities do. (p. xii)

Maeroff, Callan, and Michael (2001) underscored Boyer’s succinct description by writing:

...there is in most places a profound disjuncture and continuing cultural, political and institutional chasm between K-12 and higher education. The two sectors live apart – having separate associations,

professional worlds, and networks – instead of existing as a coherent community of leaders... The “impossible dream” of partnership between schools and colleges remains as elusive as that pursued by the Man of La Mancha. (p. 1)

Although there is a lot of talk about need to bring together our universities and our schools, Patterson, Michelli, and Pacheco (1999) noted, “...the difficulty of bridging school, district, and university cultures is under-appreciated” (p. 21). They commented that we seem inclined to assume that district and university personnel will readily establish “widespread, deep agreement and commitment,” and that this commitment will be sufficiently strong and compelling to cause the separate groups “to back off from their own agendas, their own commitment, for a greater good” (p. 22).

According to Sirotnik and Goodlad (1988), school-university partnerships represent “...a form of institutional collaboration that rarely (if ever) has occurred in practice” (p. viii). The paths of truly successful partnerships between schools and school districts and universities are not at all clear. “Indeed, the literature suggests that symbiotic partnerships...have scarcely been attempted. It is assumed, then, that there is much to be learned by everyone involved” (p. 25).

As universities and schools across the country called for greater alliance between the two institutions, they shared apprehension about how poorly the process is understood. Some authors point out that

“collaboration is not easy to achieve” and that it remains “an elusive concept to many who have tried to engage it” (Patterson et al., 1999, p. 29).

Collaboration partnership participation by school and university personnel is recognized as “more than just talking and working together, and it is more complicated than simply ‘bridging the differences’ that separate schools and universities” (p. 30). They see it as a matter of altering relationships, a means of “significant and lasting personal growth” (p. 30) that may lead to substantial organizational change.

Another reason that school-university partnerships are not well understood is that the day-to-day operation of such arrangements has not been well documented. Authors cite observers who note that “evidence of successful school-university collaboration is spotty at best” and that few participants “present either information about the initiation or maintenance of the collaboration or empirical evidence of program effectiveness” (Patterson et al., 1999, p. 30).

Also noted is “that some collaborative efforts operate essentially outside the core activities of both the schools and the university [rather than as integral parts of the school’s daily life]” (Hoffman, Reed, & Rosenbluth, 1997, p. 43).

According to Teitel (1994), “Partnerships are easier to start on the margins of organizations, where the bending of rules necessary for innovation may be unnoticed or overlooked; yet any systemic changes must

be integrated with and woven into the fabric of the entire institution” (p. 245). He also shared six steps to follow in creating meaningful partnerships between universities and schools. “They must decide to collaborate, establish who will be involved, identify and select their partners, define and negotiate the extent of the collaboration, build inter-organizational structures, and assess and reassess if the partnership is meeting their needs” (p. 248).

Verbeke and Richards (2001) wrote:

Collaboration between K-12 schools and higher education institutions is a complex undertaking. It is shaped by many forces. In addition to the differences among participants, perhaps the most critical factors that shape and sustain a school-university collaboration are the willingness to collaborate, the development of shared goals, and the creation of effective communication systems. (p. 43)

In summary, the research documents a need for meaningful collaboration between K-12 schools and colleges and universities. It also documents the divide that has existed between the two institutions.

Need for Documentation of School-University Partnerships

One reason that school-university partnerships are not well understood is that the day-to-day operation of such arrangements has not been well documented. According to Patterson et al. (1999), authors cite

observers who note that “evidence of successful school-university collaboration is spotty at best” and that few participants “present either information about the initiation or maintenance of the collaboration or empirical evidence of program effectiveness” (p. 30). Winitzky, Stoddart, and O’Keefe (1992) expressed a similar viewpoint: “Although partnerships have often been advocated, the literature that has accumulated to guide such reform is quite limited. We know little about what works, what does not, and why” (p. 9).

From Hoffman, Reed, and Rosenbluth, (1999), we learn that, regarding partnerships between institutions of higher education and public schools, “history is very short on examples of carefully crafted agreements and programs accompanied by individual and institutional commitment on both sides” (p. 40).

According to Patterson et al. (1999), few partnership participants “present information about the initiation or maintenance of the collaboration [between university and school]” (p. 30). They also add, “Although partnerships have often been advocated, the literature is quite limited” (p. 31).

Linda Darling-Hammond and Sharon Robinson (as cited in Patterson et al., 1999), “... encourage those engaged in collaborative endeavors such as professional development schools “to document the experience of collaboration for reflection and learning”” (p. 37).

The absence of evidence from the literature on successful school-university partnerships is well documented by the researchers mentioned above. Again, according to Darling-Hammond and Robinson, (as cited in Patterson et al., 1999), “Although the encouragement is strong and the benefits obvious, few [school–university] collaborators find the time or the resources to provide systematic records of activities, challenges, and success or failures of partnership activity; the work of partnerships is so demanding that documentation and record keeping are often neglected” (p. 37).

Finally, Osguthorpe, (1995), wrote that the creation of a partnership school is:

...a journey into the unknown. The voyager knows some of the conditions and benefits of the destination, but not all of them. Most travelers have considered the price, but only a part of it. Most who set forth are aware of some of the dangers and pitfalls, but only those that can be inferred from journeys to other destinations. Reading the maps and logs of similar voyages undertaken by others can substantially increase anyone’s personal knowledge about destination, price, and pitfalls. (p. 127)

It is clear from the literature on school-university partnerships that there is a need for “maps and logs” for those who are interested in establishing such programs to follow. There is not sufficient documentation

on the interactions between schools and universities; nor is there adequate evidence of functioning collaborative models that currently exist between the partnership institutions.

Summary

This section of the review of the literature has presented an overview of the concept of school-university partnerships by presenting information on their origin and reviewing the partnership models that are most prevalent in the literature. I have also presented how collaboration between K-12 schools and institutions of higher learning is frequently challenging and needs additional documentation. Finally, there is clear evidence from this review that a need exists for greater documentation of how school-university partnerships are established and sustained.

Chapter Three

RESEARCH METHODOLOGY

Introduction

The method of research used for this study was qualitative. As an intrinsic case study, my goal was to investigate the creation of Centennial Campus Middle School and to document that the school represents a responsive middle school model and a unique school-university partnership. First, this study included exploration of the decision-making process and collaboration that were established between the Wake County Public School System and North Carolina State University to achieve their vision of designing a middle school and partnership program. Second, this study examined the operationalization of that vision by describing the program that is currently in place at the school and how it was implemented. Finally, this project included my own reflections and lessons learned based on my experiences as the school's principal. It is through these lessons learned that this study contributes to the literature on middle school education and school-university partnership programs.

Site Selection

I selected Centennial Campus Middle School as the site for this study because the school – its creation, responsive programming, and partnership with NCSU – is of particular interest to me because I am the principal. In

addition, the planning process, which extended over ten years, represented an unprecedented effort within the Wake County Public School System, which has 125 schools in operation (WCPSS & NCSU, CCMS concept document, 1995, p. 3).

Finally, the school was selected purposefully because of its effort to fully incorporate into its program the characteristics of the research-based middle school concept and to build a unique school-university partnership. The literature is rich with descriptions of middle schools and their characteristics, as detailed in the previous chapter, but there is insufficient data on how middle schools develop those characteristics. This site was selected, in part, because of its efforts at incorporating those characteristics. In addition, although school-university partnership schools have existed for more than one hundred years in our nation, the university alliance that was envisioned for CCMS and is being cultivated today is unique in that it transcends the concept of the traditional school-university partnership.

Research Design

According to Bogdan and Biklan (1998), “A case study is a detailed examination of one setting, or a single subject, a single depository of documents, or one particular event” (p. 54). An intrinsic case study becomes such because, “We are interested in it, not because by studying it we learn about other cases or about some general problem, but because we

need to learn about that particular case. We have an intrinsic interest” (Stake, 1995, p. 4).

According to Stake (1995), “Case study research is not sampling research. We do not study a case primarily to understand other cases. Our first obligation is to understand this one case” (p. 4). For the purposes of my study, “...the case [was] pre-selected” (p. 4). Patton (2002) categorized the selection of a case for study reasons as purposeful. “The logic and power of purposeful sampling derive from the emphasis on in-depth understanding. This leads to selecting information-rich cases for study in-depth. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research...” (p. 46.)

Since the idea for this entire study was based on my knowledge of, experience with, and access to one particular school, this case study may be considered autoethnographical in nature.

The concept of autoethnography as a qualitative research tradition is considered a “...still emergent approach...” (Patton, 2002, p. 84). Glesne stated that autoethnography “...requires the researcher to approach himself as a subject” (p. 182). “The researcher interjects personal experience into the text” (p. 181). Patton defined autoethnography as “...studying one’s own culture and oneself as part of that culture...” (p. 85). He also wrote that this method becomes “...creative narratives shaped out of a writer’s personal

experiences within a culture and addresses to academic and public audiences” (p. 85). The “foundational question” for Patton was, “How does my own experience of this culture connect with and offer insights about this culture, situation, event,...” (p. 84). At the center of how autoethnography is distinguished from ethnography is “...the self-awareness about and reporting of one’s own experiences and introspections as a primary data source” (p. 86).

Although I acknowledge the autoethnographical approach in this research project, I also acknowledge the risks in that approach. According to Delyser, “Because gaining perspective on something you’re in the middle of poses distinct challenges, texts on qualitative research methods often advise students not to study communities or situations of which they are already a part” (2001, p. 441). With autoethnography falling within the realm of insider research, Kitchin and Tate warned that those conducting insider research, “...may fail to notice pertinent questions or issues because of the inability to step back from a situation and fully assess the circumstances” (2000, p. 29).

As Glesne stated, perhaps by entering into the research with “heightened consciousness of (these) potential difficulties,” one can be successful. It was my goal in exploring the planning for and operationalization of Centennial Campus Middle School to remain aware by maintaining a journal of events and responses to events as well as listening

closely to my colleagues and noting their responses to such events. My goal was to tell a story and, as Baldwin (as cited in Patton, 2002) wrote, “One writes out of one thing only – one’s own experience” (p. 88). The value of this qualitative approach has been incalculable and worth the risks.

Pilot Study

In preparation for this study, I conducted one pilot study. The study was conducted as a research project based primarily on the analysis of documents related to the planning of Centennial Campus Middle School. The purpose of the study was to investigate the process of policy making within the education arena. It was appropriate to base the study on the development of CCMS because the lengthy planning process resulted in the establishment of a concept document that required final approval from the WCPSS Board of Education. Although not a formal policy, the steps towards gaining approval were similar.

Although interviews were conducted for this pilot study, the data that were used were collected primarily from WCPSS meeting agendas, minutes, and personal communications.

This experience allowed a preliminary review of one set of documents. I established a coding system for the documents, which permitted me to establish certain themes, but, more important, permitted me the experience of working through the analysis process. This analysis also gave me the

opportunity to begin the process of identifying subjects who would interviewed in this study and assisted me in beginning to develop interview questions based on the themes that evolved.

Data Collection

For the study I used three methods of data collection: document analysis, interviews, and participant observation. Of these data collection methods, document analysis occurred first. Since beginning as principal of CCMS, I have accessed and organized the WCPSS and certain NCSU papers that document the planning process, which began in 1988. I then reviewed and analyzed documents, not only for the data that were retrieved, but also because the review and analysis led to the names of key players who were interviewed.

In addition to the planning documents, I archived materials relating to the CCMS program and its implementation from my first day on the job in December 1999. These documents pertained to all aspects of our school's development including curriculum and instruction, scheduling, teams and team building, human resources, professional development and training, and our partnership with NCSU. In the end these documents proved to be a valuable source of data in the cross-reference work that I completed with the planning materials.

As I reviewed the WCPSS documents that were archived during the years of planning and collaboration that transpired prior to the opening of CCMS in July 2000, it became clear that the first method of data collection, document review and analysis, would be a generous source of data in my research.

I have possessed the WCPSS materials that document the conception of the idea for CCMS since early 2000. These documents, which were archived over a ten-year period, provided me the opportunity to construct a portrait of "...the values and beliefs of participants in the setting" and to develop "an understanding of the setting or group studied" (Marshall and Rossman, 1999, p. 116). This method of collecting data was especially relevant as I focused on how each of those who participated in the planning process envisioned CCMS and contributed to vision that we now are trying to implement. The review of these documents was also critical in the development of the questions used in the interviews.

In addition, the documents provided the names of those people who were involved in the planning process. From this list, a set of names became the sampling for the interviews that were conducted for my study, which represents the second method of data collection. Since my interest was in critical contributions to the planning of CCMS, I limited interviewee selection to those perceived as having had the greatest influence. This perception was determined by the length of time a person was involved in

the school planning process and if he or she assumed a leadership role in the process. The length of time was defined as greater than one year.

Based on the work of Marshall and Rossman (1999), this type of interviewing is referred to as “elite interviewing” (p. 113). The authors define individuals who are selected for this type of interviewing as, “...individuals...considered to be influential, prominent, and/or well-informed people in an organization or community; they are selected for interviews on the basis of their expertise in areas relevant to the research” (p. 113). LeCompte and Preissle (1993) categorize this type of interviewee selection as “key-informant interviewing” (p. 166). Their definition is, “Key informants are individuals who possess special knowledge, status, or communicative skills and who are willing to share their knowledge and skill with the researcher. They are...chosen because they have access...to observations denied the ethnographer” (p. 166). This is especially important in this study since I, the researcher, was not involved in any of the planning for CCMS that took place between 1988 and August of 1999. The interviewees provided a keyhole into the goings-on of the many meetings and conversations that were held during the planning period. They also provided clarification on questions I formulated from an analysis of the documents and materials that recorded their progress in the planning process.

After receiving approval for this study from the NCSU Institutional Review Board and after identifying subjects from the planning documents to be interviewed, I contacted each interviewee by electronic mail or telephone. I explained to each the purpose of my study and requested from each two hours of his or her time for the interview. I had a conversation with each interviewee about confidentiality and asked permission to tape record the interviews. I offered to assign pseudonyms to each and explained to each that I would destroy the tapes of our conversations after this dissertation was submitted and received final approval. In the end, I did not use pseudonyms. I simply assigned the comment or quotation to an “interviewee.”

Interview questions were developed in advance (see Appendix B for a copy of the interview questions). I explained to the interviewees that not all interview questions would be used. Each interviewee played a different role and brought a different set of experiences to the school planning process. As a result, I needed to remain flexible with my questions. Each interviewee signed a consent form (see Appendix C for the consent form).

The third method for data collection selected for this study was participant observation. Although I was not involved in the planning for the school, I have served as the leader of our school’s efforts in effecting the plans that were created between 1988 and 1999. LeCompte and Preissle (1993), define participant observation as “Participant observers watch what

people do, listen to what people say, and interact with participants” (p. 196). They continue by adding that, “Ethnographers become learners, so as to be socialized by participants into the group under investigation” (p. 196). Although I was a learner in this situation, I did not have to go through the process of being “socialized” either by those whom I interviewed or the members of my school’s community. The interviewees knew me or of me and recognized my role in actualizing the plans they had developed for implementation at CCMS. The members of the school staff, who contributed to this study through their everyday work at the school, identified with me as a colleague and/or supervisor.

As Marshall and Rossman (1999) stated, “...participant observation demands firsthand involvement in the social world chosen for study. Immersion in the setting allows the researcher to hear, see, and begin to experience reality as the participants do” (p. 106). According to Denzin (1978), participant observation is a “...field strategy that simultaneously combines document analysis, interviewing of respondents and informants, direct participation and observation, and introspection’ ” (p. 183). In this study, I was the participant and the participant observer. As Yang (as cited in Kimball and Watson, 1972) noted, “My field work was my own life and lives of others in which I had an active part” (p. 63).

Data Analysis

Data analysis, according to Glesne (1999), “involves organizing what you have seen, heard, and read so that you can make sense of what you have learned” (p. 130) while conducting a study. This definition is appropriate to this study of the creation Centennial Campus Middle School based on the data collection methods of document analysis, interviews, and participant observation that I used in completing this project.

I turned to the work of Miles and Huberman (1984) as their definition of data analysis includes “...three concurrent flows of activity: data reduction, data display, and conclusion drawing/verification” (p. 21). Borrowing from Miles and Huberman (p. 23), I include the following figure as an illustration of the interactive nature of the three processes mentioned above.

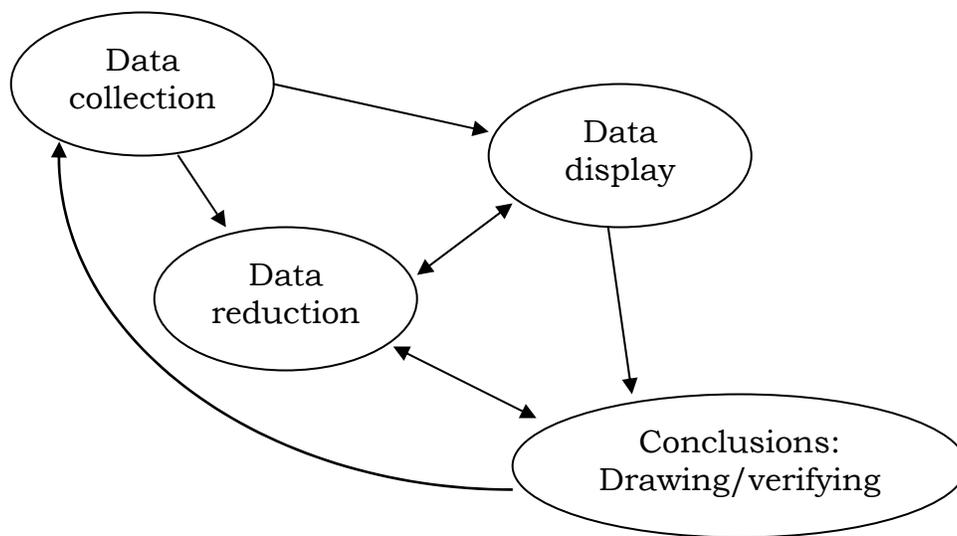


Figure 1. Components of data analysis: interactive model

These processes “occur before data collection, during study design and planning; during data collection...; and after data collection...” (pp. 21-23). The first step in data reduction took place as I further developed the conceptual framework for my study and refined the research questions.

As I collected data from interviews and their transcripts as well as document review and analysis, categories or potential themes and a coding system were developed that assisted me in data reduction. According to Janesick (1994), “The categories that emerge from field notes, documents, and interviews are not imposed prior to data collection. Early on, the researcher will develop a system of coding and categorizing data. There is no one best system for analysis” (p. 215).

As the data were collected through document analysis, interviews, and my own personal observations and reflections, I used written memos to myself to maintain a log of thoughts, reactions, or themes that developed. As Glesne (1999) suggested, I used “analytic files” (p. 131) to track useful information that included categories such as interview questions, people (to be interviewed), themes, quotations from the literature on middle school education and school-university partnerships, and ideas for different chapters of the final product. The coding and categorizing of data along with the written memos and use of analytic files assisted in reducing the data.

Returning to Figure 1 above and to the suggestions of Miles and Huberman (1984), the next step was data display. They defined data display as an effort “...to assemble organized information in an immediately accessible, compact form, so that the analyst can see what is happening...” (pp. 21-22). It was helpful to insert the coded data collected from the document analysis and interviews into a matrix by source (interviewee or document) and theme (see Appendix D for a display of the shape of the matrix). This suggestion of a matrix with text was taken from the work of Miles and Huberman (1984, p. 21).

The final activity as illustrated above was conclusion drawing and verification. This involved finding meaning in the displayed data. At this point, I determined the leading themes from the amount of data related to each and allowed them to guide the development of conclusions and implications for additional research.

The story of Centennial Campus Middle School – its conception, the shared vision held by the planners, the actual implementation of the program – bears telling. It is truly a story that is still unfolding. Through these methods of data analysis, it was my goal as the storyteller to “...find the most effective way to tell the story...” (Janesick, 1994, p. 215).

Role as Researcher

My role as researcher in my own backyard was, at first, disconcerting. Could I paint a clear picture of the work of those who planned Centennial Campus Middle School? Would I uncover data that would prevent me from moving forward comfortably? Would I be able to view the work of my colleagues at the school over the past three years and accurately reflect their successes and their failures? I would, after all, own these successes and failures also.

Determining that this case study was important to me personally as well as to my profession, I became aware of my own subjectivity and the bias within. I have kept notes since I began as principal of CCMS and found them most helpful in reflecting on our progress and, at times, lack of progress. Memoranda, personal and school calendars, and the teachers' documentation of their collaborative efforts all contributed to being able to articulate our development as a new school while limiting subjectivity.

The role of participant observer involved my own interpretations of and insights into the middle school, including the operationalization of the instructional program, organization, and collaborative structures that exist at CCMS. This part of the research was challenging as it required me to share certain autobiographical information. As I tiptoed into this area of the study, I had to be careful in ensuring that that which I depicted was authentic and not just that which I wished to be authentic. Many of the

documents included as appendices to this study are helpful in establishing that certain assumptions and conclusions are based in fact.

In the role of interviewer, I gathered data from the people who were engaged in planning Centennial Campus Middle School from 1988 until 1995. Although I had studied many of the materials that documented their efforts over those years, I was challenged by having to lead the interviewees back to their thinking at the time. The challenge was to take them back and ask them to paint for me the picture they held in their minds of the school and the partnership they were attempting to shape.

The leading issue for me was bias. This became an issue as I moved from collecting data from those who were involved in the school's planning to documenting the actualization of the plans to my own contributions and interpretations. Again, I was particularly careful that I depicted a school program and partnership that actually exist rather than ones that exist only in my mind or my heart.

Validity

Issues of validity exist in qualitative research just as they do in quantitative research. According to Robert Stake (1995), in case study "...we have ethical obligations to minimize misrepresentation and misunderstanding" (p. 109). He continued by stating that we need "...efforts that go beyond simple repetition of data gathering to deliberative effort to find the validity of data observed" (p. 109). With this in mind, the following

procedures aided in “increasing trustworthiness” (Glesne, 1999, p. 32) of this case study.

First was triangulation, which occurred primarily as a result of interviewing the participants in the planning process who were also responsible for the creation of the documents that were reviewed and analyzed. In most cases, inferences drawn from the document analysis were checked against actual conversations with the interviewees. According to Patton (2002), “Using a combination of data types - triangulation... increases validity as the strengths of one approach can compensate for the weaknesses of another approach” (p. 306). Also, as stated by LeCompte and Preissle (1993), “Triangulation prevents the investigator from accepting too readily the validity of initial impressions...” (p. 48). After a thorough review and analysis of myriad documents that span the years 1988 until 1999, I checked initial impressions and interpretations with those being interviewed.

Second was a procedure that Glesne (1999) described as “prolonged engagement and persistent observation” (p. 32). As principal of the school that is at the center this study, I have been collecting data informally for over three years. Prior to being named principal, I was employed by WCPSS for six years, five of which were spent at the middle school level. These years of experience allowed me to develop relationships with WCPSS interviewees, access to the archived materials that document the planning

of Centennial Campus Middle School, and the opportunity to develop relationships with North Carolina State University faculty members. Also, as principal of the school, I have had the opportunity to conduct prolonged observation since December 1999 when I was first employed as principal. This allowed me the insight into the actual creation of the school's program and partnership model. My own experiences were pivotal in this study as I researched the work of the planners in creating the vision for CCMS vis-à-vis the vision and partnership that actually exist at the school today.

Third was dealing with researcher bias. As principal of the school, I had to separate that which is actually representative of the program at CCMS, that which I wish were present, and that which those who planned the school envisioned as part of the school program. I had to be particularly careful that I depicted a middle school program that actually exists rather than one that exists only in my mind or my heart. To achieve this, as Glesne (1999) suggested, I attempted to remain aware of my subjectivities by "...[keeping] note" (p. 105). I had to "Watch for when they creep into [my] consciousness, be alert for how they take over the questions [I] ask, and write about them, continuing to look for them as [my] research progresses" (pp. 105-106).

A fourth procedure that I used was member checking. Through this I asked interviewees to review my interview transcripts for accuracy and thoroughness.

The fifth procedure was an attempt to offer “rich, thick description” (Glesne, 1999, p. 32). According to Glesne, the purpose of this is to write so that the reader enters the research context. With the number of documents I had to review and analyze, the information collected from interviewees, and, perhaps most of all, my own involvement as leader of the school, I attempted to paint a detailed and colorful picture of how the vision for the school was created, how its story of a middle school program is unfolding, and the partnership with NCSU is being crafted.

Generalizability

My purpose in conducting this intrinsic case study was not in the replication of the study or in comparing this case to another. The goal of this study was to understand and to learn, although, in the end, there are implications for those involved in planning middle schools and school-university partnership programs. The fact that case studies are not necessarily designed for purposes of generalizability is documented in the literature on qualitative research.

Stake (1995) concluded that:

The real business of case study is particularization, not generalization. We take a particular case and come to know it well, not primarily as to how it is different from others but what it is, what it does. There is emphasis on uniqueness, and that implies

knowledge of others that the case is different from, but the first emphasis is on the understanding the case itself. (p. 8)

Writing in Denzin and Lincoln (1994), Janesick concluded, "...the value of case study is its uniqueness; consequently, reliability in the traditional sense is pointless here" (p. 217).

Summary

This chapter presents the methodology that was employed in conducting this study of the creation of a very special middle school and a unique school-university partnership. Site selection, research design, pilot study, data collection, data analysis, role of the researcher, validity, and the issue of generalizability have been presented.

Ultimately, this research methodology permits the reader insight into one special school and one distinctive school-university partnership. The purpose of the design of this research study was to develop a final product that is "...for all who are interested in schools and children, but most especially for teachers, administrators, and others whose daily work brings them in to direct contact with classroom life... the goal is simply to arouse the reader's interest and possibly to awaken his concern over aspects of school life that seem to be receiving less attention than they deserve" (Jackson, 1968, p. vii).

Chapter Four

THE CCMS PLANNING PROCESS

Introduction

The work of the Model Middle School Planning Committee, formally organized by the Wake County Public School System and North Carolina State University in 1992, was well documented. Although the committee that developed the concept for CCMS is referred to by more than one title in the planning documents, the name “Model Middle School Planning Committee” is most often used and is the name used in the following timeline. The work on Centennial Campus Middle School began before the committee was formed and is documented as early as 1988.

The materials that served as evidence of the planning committee’s efforts are the foundation for this chapter. To assist the reader in gaining an understanding of the complexities of the planning process, which included over 150 participants, the following is a description of the step-by-step manner in which development of the school occurred. The focus of this section is on the time period from 1988 until November 1995. Although the planning continued until the spring of 1999, the concept for the school itself was determined by and approved in the fall of 1995. The ensuing planning focused on fine-tuning the school’s concept, its status as a magnet program within the Wake County Public School System, student assignment issues, and construction. These pieces of the planning process were, of course,

critical but not as pertinent to the actual program that was designed by the Model Middle School Planning Committee between 1992 and 1995.

Timeline of the CCMS Planning Process

In 1988, the Triangle J Council of Governments released a position paper stating the need for a world-class regional educational system (Triangle J Council of Governments, 1988, p. 1). The Council, formed in 1972, serves “to keep the [six county] region economically competitive, environmentally sound and a good place to live” (Triangle J. Council of Governments, n.d., Retrieved on August 15, 2003 from <http://www.tjcog.dst.nc.us/whatis.htm>). It is one of 18 regional councils in the state and is a voluntary organization of municipal and county governments. Triangle J comprises Wake, Durham, Orange, Chatham, Lee, and Johnston Counties.

In launching this world-class region initiative in 1988, the Council recognized that education had emerged as a vital, required component in the economic planning process. Triangle J envisioned a collaborative business/school/government educational partnership that would showcase the vision and resources of the region and make it a model for educational planners across the nation. As its first step toward creating a world-class regional education system, the Council pictured model schools that would bring together technology and innovative organizational techniques within

the walls of one school. The schools would serve as demonstration sites that could expose teams of educators and policy makers to a vision of what education could and should be in tomorrow's schools.

The Council's position paper (Triangle J Council of Governments, 1988, pp. 6-7) set forth a time line for the opening of the first school and initiated discussion with area school systems in the fall of 1988. The Council also suggested the formation of a task force, Model School Planning Task Force, to oversee the discussions and the implementation of the model program.

One year later, in June 1989, the Council released a memorandum of understanding that indicated agreement between the Triangle J Council and Orange County Schools (Triangle J Council of Governments, 1989, p. 6). This paper stated that the first model program to be opened would be an elementary school and that it would be located in Orange County. The Council also noted in the memorandum of understanding that "A full partnership should be established...[with a] collaborative existence" (p. 3).

In March of 1991, representatives from North Carolina State University (NCSU) met with one Wake County Public School System (WCPSS) representative to discuss the possibility of following through with the Council's full suggestion that a school be established in each of the three counties that make up the Research Triangle area (G. Richeson, WCPSS, personal notes, March 22, 1991, p. 1). At this meeting those

present discussed the idea of a model middle school program with a developmentally appropriate curriculum and technology-enhanced instruction. It was also suggested that the NCSU College of Education and Psychology (COEP) sponsor the school. The representatives deliberated over the idea of a partnership between the two institutions, although there is no indication of any type of agreement (p. 1).

Following this meeting, a WCPSS administrator was instructed by memorandum from the WCPSS Superintendent to define the parameters related to a model middle school and to plan to present such to the WCPSS Cabinet, which comprises top school system administrators (J. Hammond, WCPSS, memorandum, April 3, 1991). The administrator did so, creating a document that described the mission and beliefs of such a model program. She also offered a definition of a model school program.

As a result of the work of the Triangle J Council, New Hope Model Elementary School opened in Orange County in September 1991. There is also indication that a proposal was submitted by Durham to designate Hillside High School in Durham as the model high school in the region (WCPSS & NCSU, personal notes, February 2, 1993).

A proposal was prepared and submitted to the NCSU Chancellor in May 1992 requesting support for a middle school program housed on North Carolina State University's Centennial Campus. The proposal, prepared by the Dean of the COEP, suggested a collaborative effort that included WCPSS

and the Triangle J Council of Governments (J. Michael, NCSU, project proposal, May 26, 1992). In the proposal, the NCSU College of Education stated “The Centennial Campus Model Middle School offers North Carolina State University an opportunity to take a leadership role in the development of new models and technologies for middle grades teacher education and educational administration” (p. 3).

When the above-mentioned document was shared with the WCPSS superintendent, he responded stating that he “...love[d] the vision...” and noting that “Perhaps our philosophies of collaboration differ slightly.” (R. Wentz, WCPSS, memorandum, May 28, 1992). He also described the entire notion as “nebulous” (May 28, 1992).

A memorandum from a WCPSS administrator in April 1993 stated that the planning for the model middle school program was “on again, off again” (G. Richeson, WCPSS, memorandum, April 19, 1993). She also reported that the Triangle J Council and NCSU were working collaboratively to make the venture a reality.

Following a visit to New Hope Model Elementary School by WCPSS representatives in April 1993, the Model Middle School Planning Committee was established. Its membership represented WCPSS and NCSU, and the first meeting was held in September 1993. The purpose of the meeting was to “get to know each other, discuss a shared vision and philosophy, identify key issues, and build a structure which will enable the committee

membership to work efficiently” (G. Richeson, WCPSS, memorandum, September 15, 1993). The agenda for the meeting was developed collaboratively.

Those present at the meeting agreed that one member of the faculty of the NCSU COEP would play a leadership role in the planning process. A second member of the faculty provided historical background, since several of the Committee’s members had joined after the original discussions had occurred. Through this sharing of information, the members learned that it was proposed for the school to be situated on NCSU’s Centennial Campus and that the Triangle J Council of Governments would no longer be involved in the planning. The documents reviewed offered no insight into the reason for separating these efforts from those that originated with the Triangle J Council.

Representatives from the school system presented the WCPSS Cabinet the parameters for a model middle school program, which included grade range, size of student population, land requirements, budget concerns, and existing policy compliance concerns (WCPSS & NCSU, meeting agenda, Sept. 24, 1993). NCSU presented its request that a floor or wing of the school building be dedicated to University work. Also, the Committee members discussed the successes and lack of successes of the model program in Orange County. It was stated that “regression to the mean” had occurred at the school (WCPSS & NCSU, meeting minutes, Sept. 24, 1993).

Finally, a timeline culminating in the opening of the school in 1998 or 1999 was shared by representatives from WCPSS Facilities Division.

The meeting minutes note that if the middle school were to be a true exemplary school it "...must be developed on a developmental basis." The curricular implications of such included "...developmentally responsive, geared to student's level, real world experience, integrated, cooperative learning,..." (WCPSS & NCSU, meeting minutes, Sept. 24, 1993).

In addition, it was determined that the following key issues would be discussed at the Committee's next meeting (WCPSS & NCSU, meeting minutes, Sept. 24, 1993):

- Developmentally responsive curriculum.
- Integrated learning.
- Special needs students.
- School organization including interdisciplinary teams, flexible scheduling, rich exploratory program, and daily advisory program.
- Outreach.

In October 1993, the WCPSS superintendent shared with the Members of the WCPSS Board of Education (BOE) an overview of the model middle school program (R. Wentz, WCPSS, memorandum, Oct. 4, 1993).

The information he shared with the BOE emphasized the school's interdisciplinary team organization and flexible structure.

The next meeting, led by an NCSU faculty member, was structured to provide small group discussion of each of the nine areas listed above. It was at this meeting that a faculty member from NCSU stated the need for

presenting proposals to the WCPSS BOE and NCSU for approval before proceeding (WCPSS & NCSU, meeting minutes, Oct. 29, 1993). He suggested that such a document be prepared during the next month in preparation for formal approval from the school system and university boards in April 1994.

The concept of a developmentally responsive curriculum, which included integrated learning, was discussed at this meeting. It was determined that the attributes of such a curriculum would be "...rich in meaning...[and] interdisciplinary..." (WCPSS & NCSU, draft of key issues, Oct. 24, 1993, p. 1) There was additional discussion on the fact that the integrated learning must include all disciplines, help students and teachers make connections, be substantive, and explore themes (p 1- 2).

The importance of flexible scheduling in the school was emphasized in the discussion. The attributes of such scheduling that were listed included supporting students' needs, promoting a developmentally responsive curriculum, and allowing teacher control over the use of the time.

At this same meeting, the planning committee noted that the school would use "...NCSU resources: faculty, students, and others... 'Professors in Residence' from various NCSU colleges, demonstration classes, mentorship/independent study with students..." (WCPSS & NCSU, draft of key issues, Oct. 24, 1993, p. 5-6). The committee also posed the question of

how CCMS could “Help university research...not just being subject for [research]...” (WCPSS & NCSU, meeting minutes, Oct. 29, 1993, p. 7).

A third NCSU faculty member reported that a meeting had been held at NCSU following the last meeting (WCPSS & NCSU, meeting minutes, October 29, 1993). At this meeting, they discussed the fact that NCSU had “no formal organization” in the direction it should take in this joint effort. They then met with the Dean of the COEP who enthusiastically supported the concept.

Following the October 1993 meeting, a draft was released describing the curriculum to be in place at CCMS. The description included:

The truly integrated curriculum responds to the students’ personal questions and connects their questions to real-world concepts...while incorporating the accepted knowledge base necessary to access information. The integrated curriculum focuses on these themes and problems that emerge from the young adolescent’s world... (WCPSS & NCSU, draft of CCMS curriculum, October 1993, p. 1).

This program depiction also included suggestion for organizational structure, noting “The overarching structure must be flexible. Teachers need time to plan; students need time to learn and to interact” (WCPSS & NCSU, draft of CCMS curriculum, October 1993, p. 3).

A meeting was held in November 1993 to prepare for the full Committee meeting in December. At this meeting, a small group of

representatives discussed the need to inform the respective decision-making bodies (WCPSS & NCSU, proposal, Nov. 30, 1993). Both WCPSS and NCSU determined the appropriate chains of command for ultimately informing the WCPSS BOE and the UNC General Administration and Board of Governors.

Also at the November meeting, the committee released a draft of the proposal for CCMS. In the draft the planners detailed the school's relationship with NCSU.

To conduct...research relative to early adolescent development, curriculum, methodology, school organization, teacher education, school governance and administration, etc....To improve teacher education at NCSU through faculty clinical experiences, mentorships and action learning research as well as student opportunities to work as aides, tutors, coaches, and student teachers... To demonstrate the effectiveness of university/public school collaboration and stimulate further efforts in this regard. (WCPSS & NCSU, proposal for CCMS, Nov. 30, 1993, p. 2)

At the December meeting, a draft of a proposal was presented to the Committee members. The purpose of the proposal was to inform the WCPSS BOE and the NCSU Chancellor. The Committee agreed to allow the lead faculty member from the NCSU COEP to refine the document prior to the next meeting. Also, subcommittees were established to address each of the following areas:

- Curriculum and delivery strategies.
- Student assignment and demographics.
- School organization.
- Governance.
- Outreach. (WCPSS & NCSU, meeting agenda, Dec. 10, 1993)

One subcommittee of the larger committee met in January 1994. At this meeting the following school characteristics or components were suggested:

- 600 students.
- Representative student population.
- Developmentally responsive instruction.
- Integrated curriculum.
- Use of NCSU resources.
- Nurturing environment. (WCPSS & NCSU, meeting agenda, Jan. 3, 1994)

The planning committee noted that it would be helpful if information about the school was presented to the WCPSS Board of Education, WCPSS Cabinet, principals, assistant principals, PTA Board, Advisory Council presidents, and African-American Parents' Advisory Council.

Following this meeting, NCSU representatives developed a format for presenting the CCMS proposal to the NCSU Chancellor.

The Model Middle School Planning Committee discussed beginning to hire staff for Centennial Campus Middle Schools as early as 1995 for a 1998

opening of the school at the February 1994 meeting. This meeting also included discussion of:

- Exemplary sites across the nation.
- Literature reviews.
 - Learning strategies.
 - Site-based governance.
 - Scheduling.
 - Inter-institutional collaboration.
- Architecture. (WCPSS & NCSU, meeting minutes, Feb.25, 1994)

The WCPSS members of the planning committee prepared a precis for the WCPSS BOE in April of that year. The precis stated its purpose as “To explore the possibility of combining resources of the WCPSS, NCSU, and RTP [Research Triangle Park] to develop a unique, state-of-the-art middle school/teacher/community educational site on the Centennial Campus” (WCPSS, board of education precis, April 18, 1994).

In July 1994, a proposal requesting funding for planning purposes was prepared for Carolina Power and Light and the Z. Smith Reynolds Foundation. The proposal described the unique partnership by stating, “The proposed middle school will be the first public school in the nation to combine the resources of a public school system, a land-grant university, and a research park” (WCPSS & NCSU, Carolina Power & Light grant proposal, July 1994, p. 1).

In July 1994, a presentation was made to the WCPSS BOE about the Carolina Power & Light proposal. One of the points brought to light in the

presentation was the need for reform in middle level education. The presentation included:

Traditionally, there has been a lack of program direction in middle school education and a serious discrepancy between adolescents' developmental needs and what middle schools offer. For instance, most children in middle schools respond to hands-on, experiential learning opportunities. However, the conventional method of teaching in middle schools generally models that of high school...in which instructors lecture about isolated subjects often unrelated to the students' worlds. (WCPSS, board of education precis, July 27, 1994, p. 3)

Additionally, the presentation emphasized that CCMS would be designed to address the above-mentioned concerns as well as other developmental issues (p. 3).

The NCSU College of Education and Psychology released a paper in September 1994 stating that this cooperative effort between the College and WCPSS:

...unites the programs of the College of Education and Psychology with those of other Colleges and Schools at NCSU in developing a middle school that challenges young adolescents with opportunities to learn science, mathematics, language arts, and social sciences and to

integrate these disciplines in a technologically rich, global society.

(NCSU, the Centennial Middle School, Sept. 1994, p. 1).

An article appeared in Raleigh, North Carolina *The News and Observer* in September stating that the WCPSS BOE was scheduled to discuss the concept of the school in October (Silberman, 1994, 1B, 5B). It also noted that an NCSU faculty member would be devoting the entire year to planning the school.

The first formal communication regarding construction and ownership of the school occurred in October 1994 (R. Massey, WCPSS, letter, Oct. 5, 1994). The memo, addressed to administrators at NCSU, shared information defining the role WCPSS would play in the ownership.

The WCPSS members of the Committee made a presentation to the Board of Education in October 1994. It included data on the instructional program, student assignment plan, and budget. (WCPSS, board of education précis, Oct.17, 1994).

The next step was the presentation of a plan that included decisions on curriculum, instructional delivery, model middle school status, professional development, and the NCSU partnership (WCPSS & NCSU, meeting agenda, October 28, 1994). Shortly thereafter, the Dean of NCSU COEP presented to the NCSU Chancellor a document requesting his permission to proceed with planning for the school and defining the role of

NCSU, including the establishment of an outreach facility (J. Michael, NCSU, letter, Nov. 7, 1994).

Several new members joined when the full Committee met again in December 1994. The discussion at that meeting centered on subcommittee progress and committee organizational structure (WCPSS & NCSU, meeting minutes, Dec. 2, 1994).

Teachers from all middle schools in Wake County were invited to join the committee in January 1995. At this meeting the mission statement for CCMS was shared:

The Centennial Campus Middle School, a collaboration between Wake County Public School System and NC State University, creates an exemplary educational community of young adolescents and adults who learn by actively discovering, integrating, and applying knowledge in a dynamic global and technological environment.

The expanded committee membership was assigned to focus groups and given the tasks of developing philosophical statements on the following:

- Integrative curriculum.
- Special services.
- Teacher education and outreach.
- Architecture and technology.
- Governance and collaboration. (WCPSS & NCSU, meeting agenda, Jan. 13, 1995).

In preparation for the work to be done by these focus groups, the lead faculty member from NCSU shared a “challenge and charge” statement (WCPSS & NCSU, meeting minutes, Dec. 2, 1994). The statement emphasized the need for collaborative decision-making with both WCPSS and NCSU taking active roles. It also noted the “collaborative design” of the school.

The Committee held a community workshop in March 1995 with over 130 people representing WCPSS, NCSU, the community, local businesses, and various agencies participating. This workshop focused on the work of the focus groups (WCPSS & NCSU, meeting agenda, March 20, 1995). Each was given a block of time to brainstorm and to build consensus; each then had to report to the entire group. A sample of the questions with which the groups dealt included (WCPSS & NCSU, meeting minutes, March 20, 1995):

- What should integrated curriculum look like?
- What structure needs to exist for this to happen?
- What would a community partnership plan look like?

The compilation report from this meeting included a “picture” of how the integrative curriculum at CCMS would be shaped. It was noted that the curriculum would:

- Respond to the needs of all students.
- Integrate all areas [or disciplines].
- [Use] thematic approaches.

- Require teacher training.
- [Require] flexible scheduling. (WCPSS & NCSU, compilation report, March 1995, p. 1-2).

The planners emphasized in March 1995 the need for “...cross-college buy-in...” (WCPSS & NCSU, compilation report, March 1995, p. 4) and again discussed the fact that CCMS would not be a lab school but would benefit its students by crossing all disciplines on the campus.

WCPSS and NCSU issued a memo in April 1995 establishing a timeline for the rest of the year (J. Baker & J. Arnold, WCPSS & NCSU, memorandum, April 29, 1995). The timeline concluded with a partnership agreement being signed in July 1995.

Also, in April 1995, a WCPSS and NCSU faculty member collaboratively developed a list of “decisions, which need to be made” (C. Pope & L. Isley, NCSU & WCPSS, decisions which need to be made, April 12, 1995). This list included:

- Schedule.
- Special needs students.
- Level of curriculum integration.
- Building design.
- Hiring.

These committee members distributed a document that explained the teacher education and outreach component of CCMS. In the document, the authors wrote, “The collaboration promotes comprehensive state and

national outreach programs for educators, parents, and community members” (A. Reiman & B. Isenberg, NCSU & WCPSS, report to planning committee, April 7, 1995.) That same month the first draft of the school’s governance structure document was released. It was revised in June and August 1995.

By May 1995, all subcommittee reports were due and by June were compiled into the first draft of the final concept document that would be submitted for approval by the WCPSS Board of Education. The document was revised in August.

There is indication that several memoranda were exchanged during the summer of 1995 regarding cost information for construction and construction planning issues (C. Lighthall, WCPSS, memorandum, June 9, 1995, and C. Lighthall, WCPSS, letter, June 29, 1995). The subcommittee on architecture, under the leadership of an NCSU faculty member, issued its architectural program recommendations in September 1995.

After being approved by the NCSU Chancellor, the governance agreement for CCMS was submitted to the WCPSS BOE in October.

In November 1995, the CCMS planning document and architectural program were presented to the WCPSS BOE Program Committee for approval. The board committee’s discussion about the plan centered on several issues (WCPSS, WCPSS Board of Education Program Committee meeting minutes, Nov. 20, 1995):

- Equal access for all students regardless of the geographic area of the county in which they reside;
- Definition of integrated curriculum and how real-world learning opportunities would be integrated; and
- Cost and size capacity and if either could be reasonably replicated in the school system.

The Program Committee voted five to one in favor of the plan for the school (WCPSS, WCPSS Board of Education Program Committee meeting minutes, Nov. 20, 1995). The plan then was added to the Board's consent agenda for its November 14, 1995, meeting. It was voted on by the entire Board of Education and approved.

After seven years of deliberation, Centennial Campus Middle School, as a concept, was a reality. The plans continued to be refined until the spring of 1999 and the school opened its doors in July 2000.

Chapter Five

OPERATIONALIZATION OF THE CENTENNIAL CAMPUS MIDDLE SCHOOL CONCEPT

Introduction

The purpose of this chapter is to share the findings from my personal experiences as principal of Centennial Campus Middle School. As the documents that served as the basis for the preceding chapter were analyzed, themes evolved and, when possible, were cross-referenced with the data collected from the interviews I conducted. The themes were identified based on the emphasis placed on certain discussion points by the planning committee. The same themes also surfaced in the literature that is presented in Chapter Two as it relates to education at the middle school level. In this chapter, those themes are defined either by the planning committee, interview data, or the literature, and then explored as characteristics of the program that is currently in place at CCMS. When appropriate, references to the literature are included. Since the concept document that was the final product of the work of the Model Middle School Planning Committee served as the blueprint for our implementation of the program in place at CCMS, there are frequent references to it. (See Appendix A for a complete copy of the concept document).

The themes that arose as a result of my research are listed below. There are three broad themes with a number of sub-themes. Although the

actual titles given to the themes are those defined in the research that exists on middle school education, the meanings or definitions of each are well documented in the data collected for this study.

1. Age-appropriate instruction, which includes curriculum integration
2. Middle school structure and organization
 - a. Grade level houses
 - b. Interdisciplinary teacher teams
 - c. Flexible block schedule
 - d. Collaboration within the school
 - e. Exploratory program
 - f. Intramural program
 - g. Advisory program
 - h. Personnel and hiring decisions
 - i. Building architecture
3. Partnership/Collaboration with North Carolina State University

The findings surrounding each theme are presented below first as they were discussed by the members of the Model Middle School Planning Committee between 1992 and 1995. They are then presented as they have been operationalized in the present program at Centennial Campus Middle School.

Age-Appropriate Instruction

Model Middle School Committee

At the September 24, 1993 meeting of the Centennial Campus Middle School Model Middle School Committee, the concept of an age-appropriate, developmentally responsive curriculum was first discussed. According to the documents (WCPSS & NCSU, meeting minutes, Sept. 24, 2003), the curricular implications of such instruction are "...developmentally responsive, geared to student's level, real world experiences, integrated, cooperative learning, independent study..." (p. 1). In addition, one small group of meeting participants shared that the school "...will be an interdisciplinary learning environment where subject matter lines are blurred, where meaning is more important than memorization, and students see a connection between what they learn in school and the real world" (p. 4).

Following this discussion, the committee discussed the value of integrated learning in helping students and teachers "...make connections... [by exploring] themes [based on the] collaboration of two disciplines" (WCPSS & NCSU, meeting minutes, Oct. 24, 1993, p.1). This group also noted that "All areas (including arts, technology, etc.) must be included in this integration" (p. 1).

In April 1994, the committee agreed that the curricular and instructional components of the program at CCMS should be "...clearly

articulated, integrated, focused on real-life problems...emphaz[ing] active inquiry, learning by doing, flexible groups, ...and varied learning styles” (WCPSS, WCPSS board of education précis, April 18, 1994, p. 1).

This discussion on curriculum and instruction led to the development of a draft concept document in October 1994 that stated, “The instructional focus in an integrated curriculum must be learning-centered building upon the personal social concerns that dominate young adults’ thoughts and activities” (WCPSS & NCSU, draft of concept document, Oct. 24, 1994, p. 1). One interviewee who served on this committee noted that the curriculum would be “...driven by students’ and teachers’ collective interests...[and]...emerge over time.”

In December 1994, the planning committee noted in its guidelines for the school:

The school is committed to an integrative curriculum. This means that small teams, made up perhaps of two core academic teachers and 50 students who operate in large blocks of time, will explore themes, topics, issues and problems, not academic disciplines per se. (WCPSS & NCSU, task force guidelines, Dec. 2, 1994, p.1).

In a report released by the planning committee in March 1995, the work of small groups was compiled. In the section devoted to curriculum and instruction, the record states that an integrative curriculum would:

- Model the real world.

- Promote critical thinking.
- Be student driven.
- Use thematic approaches.
- Be based on discovery ...
- Integrate all areas/core/art/PE/business. (WCPSS & NCSU, compilation report, March 20, 1995, p.1).

As the planning committee began final drafts of the CCMS concept document in May 1995, they noted that instruction “...will build on themes; be activity oriented...[and] include a variety of instructional strategies” (p. 2).

A later document stated that the curriculum of CCMS is:

“...designed to be responsive to the unique needs of young adolescents [and] will have five major emphases: (1) ...highly integrative, exploring concepts, skills, and issues across many disciplines. (2)...engage students in frequent, significant interaction with adults, both on the university campuses and in the community. (3) ...emphasize “real world”, hands-on, active learning about substantive issues. (4) ...make extensive use of cutting-edge technology. (5) ...give careful attention to the cultural contexts and societal forces which affect adolescent development. (WCPSS & NCSU, planning committee report, August 1995, p. 5).

Teachers, according to this document, “...will be engaged in ...active,

integrative type of curriculum. Academic teachers will work and plan together in two teacher teams representing the core disciplines, a feature which especially facilitates integrative learning” (p. 7).

In the version of the concept document that was approved by the Board of Education in November 1995, it is noted:

The CCMS integrative curriculum extends far beyond the ‘correlation of topics’ and occasional ‘interdisciplinary units’ characteristic of many schools...inquiry-based themes and issues rather than subjects will be a curricular focus. The themes and issues selected will be designed to speak to the needs, interests, and concerns of young adolescents... (WCPSS & NCSU, CCMS concept document, Nov. 1995, p. 7).

From the review of the literature on middle schools, we know that the thoughts of those on the planning committee were consistent with the research on age-appropriate instruction at the middle level (Stevenson, 1992; George & Alexander, 1993; George, Lawrence, & Bushnell, 1998; Clark, 2000; Beane, 1997; Manning & Bucher, 2001; Stevenson & Carr, Eds., 1993; and Wavering, 1995). The committee members focused on the fit between developing young adolescents and an integrated curriculum approach. They emphasized the need for middle school students to be able to make connections across the disciplines as well as to the world beyond the classroom walls. Two examples of integrated studies are included in the

concept document that served as the blueprint for actually constructing the program at CCMS. (See Appendix A for the complete concept document.)

CCMS Operationalization

Although discussion of curriculum integration at CCMS is present throughout the planning documents and was a critical part of the final document that became my blueprint for building the school and its program, I had little experience with the concept (see Appendix A for the concept document). My experiences as a middle school teacher and administrator had been with occasional interdisciplinary teaching. In this model teachers on a team representing each of the four core content areas (math, science, language arts, and social studies) would, when time permitted, share a concept or theme. If, for example, in eighth grade social studies, the students were studying the influence of water on the development of the state of North Carolina, the science teacher may link in her class by having the students study the environment of rivers and coastal areas or discuss hydrology. The language arts teacher may link to the theme by having the students read Streams to the River, River to the Sea. In math, the students may study lines and coordinates as the teacher relates them to the shape of rivers, transportation on water, and navigation.

My research on integration quickly led me to understand that it moves the interdisciplinary approach as described in the preceding

paragraph to a different level and provides young adolescents with more age-appropriate instruction. According to Heidi Hayes Jacobs (1997), “...merging concepts from two or more disciplines can make for a powerful and lasting learning experience” (p. 20). As I worked through the planning months that preceded the opening of CCMS, I talked to representatives from the Curriculum and Instruction Department of the WCPSS and researched the topic of integration in print materials and on-line. I learned that we as educators recognize the value of integration but we actually, locally, have little experience implementing a curriculum-delivery system at the middle school level that is based on the idea. I was referred to the Association for Supervision and Curriculum Development (ASCD) based in Alexandria, Virginia for information and possible assistance with training.

ASCD, as an organization, was originally envisioned to represent curriculum and supervision issues. Over the years, their focus has changed. The group now addresses all aspects of effective teaching and learning—such as professional development, educational leadership, and capacity building (Association for Supervision and Curriculum Development, n.d., Retrieved on September 3, 2003 from <http://www.ascd.org/>).

I made arrangements with ASCD to provide training for our teachers in curriculum integration based on the concept of curriculum mapping. According to Heidi Hayes Jacobs, whose work we used as a guide, calendar-based curriculum mapping includes three components: “The process and

skills emphasized; the content in terms of essential concepts and topics,...; and the products and performances that are the assessments of learning” (1997, p. 8). Practically, curriculum maps allow teacher to gain information about what was taught during a school year (see Appendix E for a sample curriculum map format). The teachers then become curriculum editors using the data collected on the maps to identify gaps, repetitions, potential areas for integration, and to determine meaningful assessments. (Mary Ann Holt, July 2000, Curriculum Mapping Presentation, Raleigh, NC).

Running parallel to the research that I was conducting on integration in early 2000 was the CCMS teacher interview process. As I screened and then interviewed over 100 candidates for 40 teaching positions, I learned that most teachers in the group thought they understood the concept of integration when actually they defined it as interdisciplinary teaching. I knew that together we would be traveling waters that were uncharted for us.

The initial training for teachers provided by ASCD in July 2000 was based on the concept of curriculum mapping, as described above, and using it as a tool to integrate curricula. The two-day training was helpful although the teachers found that the focus on theory took too much time. The biggest issue was that the training was offered ten days before the school year began. Opening a new facility, handling typical beginning-of-the-school-year issues, individual instructional planning, and team building seemed to take most of the teachers’ time. Our teachers understood that

they would spend the entire first year at CCMS collecting data for their curriculum maps and that these new tools would not be in place before the students arrived, but other tasks prevented them from beginning the real collaboration process successfully before the beginning of the school year.

Fortunately, WCPSS has in place in each middle school a curriculum integration coordinator. The position is funded through Career and Technical Education and is designed to oversee the integration of the academic curriculum and the vocational curriculum as well as the use of technology across all curriculum areas (see Appendix F for a complete description of this position's responsibilities). At CCMS, the person in this position took the leadership role in coordinating our efforts with mapping and integration. He met with the teachers in each house at least weekly, assisted them in collecting data for the maps, and participated in the actual development of integrated instructional units based on the evolving maps. He also maintained the portion of our web site that was devoted to curriculum maps (see the CCMS website at www.ccms.wcpss.net and Appendix G, Appendix H, and Appendix I for examples of instructional units based on the use of curriculum maps).

As the first year got underway, the teachers were asked to meet during the school day at least one time per week as a grade level house to discuss instruction and to collaborate on integration. To keep the exploratory teachers in the loop, the schedule was structured to permit one

or two of the teachers from that house to attend these weekly planning meetings. These emissaries served to bring information from the exploratory house on curriculum and to take back such information from the academic teachers. This structure made it possible for the exploratory teachers to know what was going on instructionally in each of the grade level houses.

After the curriculum maps are created, in most cases, the planning among the teachers at CCMS in a particular house, begins with a brainstorming session. Using a web or a wheel, they identify a focus and connect key concepts from the different curriculum areas (see Appendix J and Appendix K for example of planning webs). These planning teams address the specific needs of their students and establish a timeline for implementation. Typically, the next step is for teachers within the same discipline (language arts, math, social studies, and science) to meet to discuss instructional strategies and activities to be used in the delivery of the curriculum goals that are present in the web. Once the plans are in place, the teachers meet weekly to discuss the implementation of the unit, share best practices, and develop assessment tools. The teachers within each house attempt to remain on the same page throughout the teaching of a particular unit, although they may utilize different strategies and approaches to delivery (see Appendix G, Appendix H, and Appendix I for examples of instructional units based on the use of curriculum maps).

Throughout this instructional planning process, our outreach coordinator is an active participant. Her position is designed to help teachers maximize the use of resources available from the University (see Appendix L for a description of the responsibilities of the outreach coordinator). The planning webs used by the teachers typically include a strand labeled “NCSU.” It is the responsibility of the outreach coordinator to ensure that the teachers are including links to NCSU and that they are directly related to the North Carolina Standard Course of Study or curriculum. These links may include the opportunity for entire houses to participate in activities such as university faculty demonstrations, small group work on projects under the direction of graduate students, internships on campus, and individual mentoring.

In summary, the operationalization of the concept of curriculum integration at CCMS has been facilitated by on-going training, the use of curriculum maps, the contributions of key staff members including the curriculum integration coordinator and the outreach coordinator, and adequate time for teachers to collaborate within their houses and with their exploratory house colleagues. This year we have converted the position of curriculum integration coordinator to a classroom teaching position and have added the position of instructional resource teacher. This new position has assumed many of the instructional roles of the curriculum integration coordinator.

Organization and Structure

Model Middle School Planning Committee

In October 1993, the members of the Model Middle School Planning Committee first discussed the organizational structure of Centennial Campus Middle School. They agreed that an interdisciplinary team organization would be in place, along with flexible block scheduling in which teachers would control the time (WCPSS & NCSU, key issues, Oct. 24, 1993, p. 2). In a document released following this meeting, it was stated that:

The overarching structure [of CCMS] must be flexible. Teachers need time to plan; students need time to learn and to interact. To accomplish this structure, the school will be organized around: two teacher teams...grade level houses...houses with space for team meetings...a schedule incorporating flexible blocks of time...sufficient common planning time...[and] time for teachers...to work and plan together (WCPSS & NCSU, draft of concept document, Oct. 1993, p. 3).

One interviewee stressed the necessity for the school to have two-teacher teams. He stated “We (the planning committee members) understood right off the bat that if you have four teacher teams...you don’t know the kid...the biggest thing is knowing the kids well.” He continued by adding, “I was pig-headed about two teacher teams.”

The committee continued by declaring that the school would have

1. Interdisciplinary team organization with individual and team planning;
2. Advisement/Advisee daily ...;
3. Rich exploratory program and special interest course(s);
4. Flexible block schedule – teachers control time;
5. Heterogeneous grouping. (WCPSS & NCSU, draft of key issues, Oct. 24, 1993, p. 4).

In addition the planners believed that the school's organization should include "...no bells...team decides time allocations...[and] shared leadership" (WCPSS & NCSU, meeting minutes, October 29, 1993, p. 8). One interviewee, who contributed largely to the planning process, added that because so many of "us" come from a secondary background as opposed to an elementary background "...we continue to see instructional time as discrete blocks of time and content divided into 'subjects'." This, she said, makes implementation of flexible scheduling hard to do.

In August 1995, the planning committee released a draft of the concept document that stated:

...CCMS will have the following organizational features: houses for each grade level of approximately 200 students...Two teacher team with approximately 50 students per team, reflecting the cultural, racial, and intellectual diversity of the student population...a team of

exploratory teachers...a flexible block schedule (WCPSS & NCSU, planning committee report, August 1995, p. 10).

The idea of two-teacher teams was emphasized as a key element in developing integrative curriculum. The planners reported that small teams would:

...promote close interpersonal relationships; allow teachers to know and build upon student interests, strengths, and learning styles more effectively; provide a supportive environment for students...to interact in meaningful ways; facilitate integrative learning...; make team planning easier; and encourage more flexible use of time. (WCPSS & NCSU, planning committee report, August 1995, p. 10)

Parallel to these components of the organizational structure, the planning committee noted the need for an architectural design that would accommodate such a structure. The members also commented that “The ...building must be the embodiment of flexibility while at the same time addressing the need for a structure supportive of middle school curriculum and grouping” (WCPSS & NCSU, planning committee report, August 1995, p. 4). Specific requirements included “...space for teachers to plan and work together, space for student houses to meet as an entire group, ...general instructional classrooms, ...natural light and openness...” (p. 4).

The final concept document noted that CCMS “...will have the following organizational features: houses for each grade level...two teacher

academic teams...a team of exploratory teachers...[and] a flexible block schedule..." (WCPSS & NCSU, CCMS concept document, Nov. 1995, p. 12).

These components of the organizational structure are consistent with those mentioned in the literature on middle schools (George & Alexander, 1993; George, Lawrence, & Bushnell, 1998; Mason as cited in Wavering, 1995; and Manning & Bucher, 2001).

CCMS Operationalization

Houses and teams

Organizationally, Centennial Campus Middle School is philosophically and physically divided into four houses. The three grade levels and the exploratory program comprise the house make-up.

The three grade level houses are divided into interdisciplinary teacher teams and student teams. As we planned the school's program during the early months of 2000, it was clear from the concept document (see Appendix A) and the middle level education research (Jackson & Davis, 2000, p. viii) that we needed to create small communities of learners. In my previous experiences that had been achieved through the use of two-, three-, four-, and five-teacher teams. The need for building strong connections between adults and students as well as the need to facilitate instructional planning led us to use two-teacher teams across the three grade level houses when we opened the school.

Approximately 50 students were assigned to each team. With a building capacity of 600, we planned to eventually function with 200 students divided into four teams at each grade level. During year one, we were forced to restructure at the eighth grade level because of personnel issues. This restructuring led us to use a four-teacher team for the second half of the year. For year two, we moved back to two-teacher teams at all three grade levels. For year three, it was agreed that we would move back to four-teacher teams at only the eighth grade level while maintaining two-teacher teams at sixth and seventh grades. The rationale was to determine if using four-teacher teams, on which the teachers focused on single subject areas, would affect their ability to actually better plan and deliver instruction. The rationale also included the thinking that, perhaps, the use of four-teacher teams at the eighth grade would assist the students developmentally in making the transition to a traditional high school model which includes a separate teacher for each subject area.

The use of small teams of teachers at CCMS is directly aligned with the thoughts of the Model Middle School Planning Committee and the most current middle school research. This structure permits students and teachers to know each other well and facilitates the planning that must occur among the different teams of teachers. It is important to note that although the two-teacher team structure is most desirable to achieve the

aforementioned, factors may interfere with the structure's actual implementation.

Flexible block schedule

The three grade level houses at CCMS function on different daily schedules (see Appendix M and Appendix N for examples of daily schedules). The schedules allow academic time to be blocked and transitions to be reduced in number and less stressful for students. The sixth grade follows a schedule that links all of their instructional time into one four-hour block during the first two-thirds of the school day. The seventh and eighth grades have two two-hour academic blocks.

Control over these blocks of time is given to the teachers. At the beginning of each year, we, the administrators, assign 40 to 50 students to each of the two-teacher teams and 85 to 100 students to the four-teacher teams, and the teachers determine how the students will be grouped and how time will be used on a daily basis. Although they begin each year with clear divisions in how the time will be used daily, they have flexibility during each block to flex their time based on students' instructional needs.

The sixth and eighth grades have a two-hour exploratory block; the seventh grade follows a schedule that allows two one-hour exploratory classes. During this time students pursue their personal interests in visual

composition, Spanish, dance, choral music, technology education, business education, and family and consumer science.

The schedule described above and found in Appendix M and Appendix N also exhibit how teachers' planning is scheduled into the school day. All teachers have 100 minutes of planning each day. One-half of the time that is designated as individual planning, and the other half is designated as collaborative planning. During two of our four years in operation, we offered the teachers in each of the grade level houses back to back planning periods. Currently our seventh grade teachers have two separate one-hour planning periods.

Although the plans for CCMS were clearly focused on flexible scheduling, and the research is equally adamant, the reality of implementing such a schedule is challenging. Flexibility actually only occurs during certain times of our day. Two factors affect the flexibility. One is the shape of our math program, which requires us to group homogeneously by ability level. The second are the policies and procedures that govern the deliver of services to special student populations. These students must receive math and language arts instruction at scheduled times each day, again affecting the team's or house's ability to truly flex the entire block or blocks they are given. These two constraining factors are discussed again in Chapter Six.

Personnel

Although the Model Middle School Planning committee did not document specific discussion about the type of teachers who would work at CCMS, one interviewee noted that the school would need “...good teachers who know the kids...[and] discuss kids on a systematic, regular basis...”

The committee members did note that the teachers would “...work and plan together...” (WCPSS & NCSU, CCMS concept document, 1995, p. 9). One interviewee shared that the type of teacher that would be most well suited for CCMS would be a “Renaissance Man...a holistic thinker.”

As the initial hiring process began in January 2000, I combed the research to determine the characteristics of successful middle school teachers and as a result created the CCMS Teacher Profile (see Appendix O, CCMS Teacher Profile). This profile has come to be used as a self-checklist for interested candidates. We share the document with interviewees and ask them to read over it as part of the interview process.

The document served as guide for the development of our teacher interview format. Using the profile, I developed a list of general questions and sought the input of WCPSS and NCSU staff in narrowing the list (see Appendix P for a complete list of questions). From that list of general questions and using the Wake County Public School System interview format as a guide, we developed an interview format that communicated the program at CCMS and gathered critical information on a candidate’s

understanding of child-centered education and integration of curriculum, his or her definition of teamwork, and interest in a university partnership (see Appendix Q for the complete interview format).

Armed with the profile and the interview guide, we were overwhelmed in February 2000 with over 170 interested candidates from within the school system alone. Knowing that the WCPSS policy requires the principal to interview existing WCPSS employees if an appropriate vacancy exists, I determined that I would use a team approach to handle the initial wave of interviews. While I was working on creating the teams, I held two information sessions for the interested WCPSS employees. The purpose of these sessions was to share information about CCMS including the school's vision, mission, and partnership with NCSU. The turnout at each of the two sessions represented 60% of those who initially expressed interest from within the school system. Ultimately, the idea behind these meetings was to permit the candidates to screen themselves out of the interview process if they felt that CCMS would not be a good match. After the sessions, the teachers were asked to indicate in writing their interest in actually pursuing an interview.

With assistance from the WCPSS Curriculum and Instruction Department and NCSU, I created 11 interview teams to handle the resulting 99 interviews. These were conducted in March and April 2000 and yielded viable candidates for 15 of the 32 teaching positions with which CCMS

would open. Following this stage in the hiring process, the remaining positions were advertised and all were filled by the first workday, which was July 12, 2000.

As stated in an earlier section, the job of a teacher at CCMS is different than that of teachers in the other middle schools in which I have worked because the demands on their time is so different. The expectations for collaboration, the need to become skilled at integration of curriculum, and teaching in a primarily heterogeneous environment, require the teachers at CCMS not only to work additional hours, but also to plan and teach differently.

Since our opening, we have made every effort to hire classroom personnel who were certified in the respective disciplines. Because we function on two- and four-teacher teams, this has been challenging. The notion of two-teacher teams makes appropriate certification especially difficult. We agreed before opening that at the sixth grade, we would look for a team of teachers that brought a blend of certifications and experiences. As a result we initially had six teachers who were certified kindergarten through sixth grade and two who had specific certification in middle grades language arts and social studies. This has been maintained for the most part and is reflected in the current staffing pattern with five elementary and three middle school-certified teachers. This blend was purposeful and behind it was the thinking that we could better aid in providing a smooth

transition for our sixth grade students from elementary school if we had a balance of experience and training among our teachers.

At the seventh grade, we use two-teacher teams also. We have two teachers who certified as K-6, one of whom also is also certified in middle grades language arts; two that were originally certified in secondary English; one who was a math major; and four who are middle level-certified.

At the eighth grade all seven of the eight academic teachers are certified in their respective areas. One is teaching out of her area on a provisional basis.

Collaboration Among Teachers

Model Middle School Planning Committee

The members of the CCMS planning teams documented little discussion about the collaboration that would actually need to exist within the walls of the school. In October 1993, there was discussion about the relationship between teacher collaboration and the integration of curriculum (WCPSS & NCSU, meeting minutes, Oct. 29, 1993, p. 4). The group also discussed the fact that the school would represent a break "...with traditional and allow/welcome creative collaboration" (p. 1). The leading discussion about collaboration centered on providing teachers "...adequate planning time..." and its relationship to the organization of the school. There was mention of collaboration at the Oct. 29, 1993 meeting of the

planning committee. The discussion included mention of “continuous collaboration...” (p. 12). It is unclear if the planners realized the amount of time teachers would actually spend in collaboration with one another or if they realized the intensity of such collaboration.

The idea of collaborating with North Carolina State University is documented throughout the planning committee’s discussions (WCPSS & NCSU, meeting minutes, March 22, 1991; NCSU proposal, May 26, 1992; draft of key issues, October 24, 1993; WCPSS & NCSU, proposal to Carolina Power & Light, January 1994; WCPSS board of education précis, October 17, 1994; and WCPSS & NCSU, CCMS concept document, Nov. 1995). The partnership between WCPSS, CCMS, and North Carolina State University will be discussed in a separate sub-section.

CCMS Operationalization

From the beginning at CCMS, I was most concerned about the communication structure that would be in place and how it would facilitate the collaboration which would be so critical to our planning efforts. My experiences as an administrator taught me the importance of flattening out the school bureaucracy as much as possible and to create and maintain a system through which all staff members were kept informed. In addition to this lesson learned, I realized that our instructional program would require us to talk to and work with each other on a regular, if not daily, basis.

At CCMS, the members of the administration, grade level house leaders, curriculum area contacts, and media specialist comprise the leadership team. We realized early on that an even and regular flow of information to and from the house leaders allowed for fewer meetings of the leadership team. Our house leaders serve as the persons in charge in each of the four houses: sixth grade, seventh grade, eighth grade, and exploratory. The people in these positions are selected by their housemates or asked to serve by me for terms not to exceed two years (see Appendix R for a complete description of house leader responsibilities).

The house leaders, through their weekly meetings, move information from the administration, if needed, to the house members. All teachers have the opportunity to be kept informed through this system. In addition, the house leaders coordinate their housemates' efforts in instructional planning and the execution of administrative responsibilities. The house leaders are discussed in more detail in subsequent paragraphs.

Curriculum area contacts serve individually as the point people for receiving content-specific information from the school system and funneling the information both to their colleagues within the disciplines and to their house mates when appropriate (see Appendix S for the roles and responsibilities of curriculum area contacts).

During our first year of operation, 2000-2001, all of the staff members worked diligently to plan together, share best practices, and identify

cooperatively the needs of the students. As we approached the end of the first quarter, our media specialist came to me with a concern. She said, “Mr. Branch, our folks here do not know how to collaborate.” I probably looked at her with surprise as I thought we were doing a yeoman’s job especially with the structure we had implemented. Her position permitted her the unique opportunity to work and plan with every teacher in the building, so I knew that she was speaking from maximum experience. I acknowledged her concern, and we began to have a discussion as a school family about collaboration and the need to hone our skills.

We knew from the research that “Effective schools have embedded in their cultures a collaborative professional learning community” (McLaughlin as cited in DuFour, 2001). We also acknowledged that creating a collaborative culture at CCMS would be the most important factor for successful implementation of the middle school concept. According to Newmann (1995), “When groups, rather than individuals, are seen as the main units for implementing curriculum, instruction, and assessment, they facilitate development of shared purposes for student learning and collective responsibility to achieve it” (p. 38). Most importantly and, perhaps, most powerfully, we knew from the research and our training that collaboration by invitation does not work; it must be a part of the daily routine in our school.

Our school's structure permits decisions, particularly instructional decisions, to be made as close to the point of implementation as possible. Teachers make decisions regarding curriculum delivery and use of instructional time without seeking my approval. To be successful in making effective decisions, they have to work closely with each other, crossing disciplines and, regularly moving out of the safety of their grade levels into the area of our exploratory program. To allow this to happen smoothly, the house leaders must become skilled not only at leading collaboration but also at consensus-building and conflict resolution. The responsibilities of the house leader are varied with the lead responsibility being to guide the house members through the task of planning instructional delivery (see Appendix R for responsibilities of house leaders).

Specifically tied to planning for instruction, our house leaders have learned that they must answer the following:

- What do we plan for?
- What do we monitor?
- What questions do we ask?
- How do we allocate time?
- What do we celebrate?
- What are we willing to confront? (DuFour, 2001).

After jumping head first into this structure with house leaders being

positioned at such strategic locations within our communication structure, we learned that norms for collaboration must be established. This is now done each year by having the members of each house respond to the following:

- When do we meet as a house?
- When do we meet as content area teachers?
- How will we ensure that everyone listens and participates?
- Will there be requirements for participation and, if so, what will they be?
- How do we respond to things said after or outside our meetings?
- How do we handle confidentiality?
- How do we build consensus in decision-making?
- Are we prepared to deal with conflict?

With this structure in place, we felt that we were well on our way to embedding the practice of collaboration in our every day routines. But we also realized that to continue growing as professionals who work in an environment that relies completely on team function, we would have to regularly assess our ability to collaborate and measure our success as collaborators. This has become an on-going process for us and one that has taken on more meaning over the past two years.

Our outreach coordinator assumed responsibility to oversee our efforts at enhancing our collaboration skills. With additional training in the

creating collaborative cultures, she implemented a system by which we hold discussions regularly about collaboration. These discussions, held at the house level, include reminders that the first reason for our collaboration is student success. We have agreed as a staff that we will:

- work as a group, rather than individuals, in the implementation of curriculum and instruction;
- share purposes for student learning;
- be collectively responsible for achieving those purposes; and
- promote continuous improvement.

Basic to this ability to collaborate is the need for time. We knew before CCMS opened that to achieve our mission we would have to allow teachers time on a daily basis for collaboration. We knew that we could not expect teachers to sacrifice their individual planning time to work with teams. As a result, we created a schedule, as described in an earlier section, which permits every teacher in the building to have two 50-minute planning periods each day (see Appendix M and Appendix N for CCMS daily schedules). One of these two periods each day is spent in collaboration. Most often it is with housemates or an immediate teammate, but it may be spent working with other staff members such as the media specialist or a technology teacher. The teachers are asked to document how the collaborative period is used. This may be done in a notebook that is

provided to them or may be done electronically. Typically this documentation includes the agenda for the meeting and/or meeting notes.

In addition to this communication and collaboration structure, we use Monday meetings. These are designed for the entire staff, staff development, curriculum mapping, sharing best practices, or cross-grade level content area meetings. The house leader structure does reduce the number of full staff meetings we hold because of the manner in which information flows to and from these individuals and from them to their housemates.

The house leader structure that is in place at CCMS is not in line with the vision of one of the leaders of the Model Middle School Planning Committee. According to this interviewee:

We wanted to have three house leaders,...And somebody would advertise nationally [for the house leaders]. So the idea then was to get three house leaders who had done this for 15-20 years, who knew all about curriculum integration, and it wasn't some units, but knew about how to set up advisors. And they would teach and lead by example. And then work as trainers for the other faculty....they were going to have dual appointments on the clinical faculty at NC State.

Even though we did not follow the exact vision of the planners in scaffolding the leadership structure that is in place at Centennial Campus

Middle School, we have established a structure that supports and encourages collaboration and one that continues to evolve on the campus.

Exploratory Program

Model Middle School Planning Committee

The planning committee noted in October 1993 that Centennial Campus Middle School should have a "...rich exploratory program.." (WCPSS & NCSU, draft of key Issues, Oct. 29, 1993, p. 4). The question of "How can the 'exploratory courses' be integrated?" arose in January 1995 in a discussion about curriculum integration. (WCPSS & NCSU, meeting minutes, Jan. 13, 1995, p. 6). Throughout the discussions of the committee there is evidence that CCMS would include an exploratory program that would offer students the opportunity to participate in special interest courses including fine arts, technology, theater, music, life skills, visual arts, and dance (WCPSS & NCSU, CCMS curriculum draft, May 1995, p. 1).

CCMS Operationalization

The exploratory program at Centennial Campus Middle School is based on the notion that young adolescents should have the opportunity to pursue areas of personal interest. Our program offers our students the chance to explore and possibly discover special talents in the areas of visual art, choral music, Spanish, business and computer education, technology

education, family and consumer science, and dance (see Appendix T for excerpts from the CCMS program guide).

The exploratory teachers, as described previously, work diligently to connect the work students complete in their classrooms with those concepts being taught in the academic program. This works more smoothly in the academic-to-exploratory direction than it does in the exploratory-to-academic direction. For example in the family and consumer science class, Exploring Life Skills, the student conduct oral history projects with senior citizens to learn more about inter-generational relationships. This project is tied directly to the eighth grade study of oral history and its place in the history of our state and nation. Our technology teachers regularly work closely with the academic teachers in support of the units of study being implemented in their classrooms.

Our exploratory program is restricted in the number of course offerings. Compared to other middle local middle schools, we are considered small in that our enrollment will not exceed 600. Proportionate to this enrollment number is the number of teachers we are allotted. In an effort to ensure appropriate academic team structure and size, we made the decision during the planning months that preceded our opening in 2000 to limit the exploratory courses we offer thereby devoting more human resources to the academic program. The impact of this has been felt in the increased

student enrollment in certain exploratory courses that have become more popular over the years.

The decision was made before the school opened not to offer band or instrumental music. This decision was based in practicality not middle school philosophy. My concern in the days leading up to the opening of CCMS about band was scheduling. Again drawing from my experiences as a middle school teacher and administrator, I feared that in a school as small as Centennial arranging band classes for three grade levels would drive the schedule of the entire school, which I did not want to happen. I imagined hiring a half-time band teacher since the number of students enrolled in the school and the number that would be interested in taking band would probably not justify a full-time position. A half-time position would then most likely have to be shared with another school. This arrangement would necessitate teaching three levels of band back-to-back during the school day, either morning or afternoon. If our school accommodated such, the flexible block scheduling we planned throughout our academic program would be compromised. The decision not to offer band was made early enough in the opening-of-school process that we could inform parents who were interested in applying for magnet status.

The CCMS exploratory program offers our students opportunities to pursue areas of personal interest (see Appendix T for program guide and course offerings). The program has evolved over the past three years to

more efficiently link to the academic program at CCMS and to be more attractive to students who are preparing to be tomorrow's leaders.

Advisor-Advisee Program

Model Middle School Planning Committee

The planning committee first documented discussion about the fact that CCMS should include an advisory program in October 1993. (WCPSS & NCSU, draft of key issues, Oct. 1993, p. 3). Although no formal definition for the advisory program was documented, there is recurring mention that one would exist. (WCPSS & NCSU, key issues, Feb. 1994, p. 4; WCPSS & NCSU, meeting minutes, Oct. 1994, p. 2; WCPSS & NCSU, CCMS compilation report, March 1995, p. 1; and WCPSS & NCSU, CCMS curriculum draft, May 1995, p. 1)

CCMS Operationalization

From experiences at four other middle schools prior to accepting the position of principal at CCMS, I knew that launching an advisory program would not be difficult. What would be difficult would be sustaining the integrity of such a program. My experiences taught me that unless guarded and structured, the time allocated for daily advisories could easily be turned over to administrative tasks such as daily attendance, collecting field trip money, or perpetual DEAR (Drop Everything And Read).

During the summer of 2000, prior to the school's opening, an administrative intern working with me developed a guide for our teachers to use in implementing an effective advisory program. The guide included the definition of advisory programs, common advisory activities, and list of resources teachers could use in implementing such a program.

At CCMS, we define the advisory program or advisor-advisee program as an organizational structure in which one small group of students identifies with and belongs to one educator, who nurtures, advocates for, and shepherds the individuals in that group through school. Our advisors are the certified personnel in our building including my assistant principal and me. We expect our advisors to listen and respond to students, to be creative in the design of advisory activities, and to recognize behavior which calls for referral to a helping professional.

During the first year of operation, we ran our program for the first twenty minutes of each day. It now is operated for fifteen minutes each day. The average advisory group is thirteen students and they are typically representative of one or two interdisciplinary teams. With an emphasis on getting to know each other and team building at the beginning of each year, the student groups move into discussions and activities centered on goal setting, peer relations, service learning, and current events, to name a few. The web, included in Appendix U, displays the many possibilities for advisory groups at CCMS. The bottom line question is how is the time set

aside for our advisory program best used to respond to the needs of a particular group of young adolescents. We know that this may change daily.

During the summer of 2003, our staff members were trained by North Carolina State University College of Education faculty members in the “Helping Yourself, Yourself” program. This program is directed by faculty in the College of Education and the CCMS Outreach Coordinator and is designed to assist young adolescents in understanding their own development through the teaching of development theories. According to the program’s website:

Currently, we do little to teach our early adolescents about the growth and changes they undergo during adolescence. Why do we keep this a mystery? Perhaps if they were aware of how they learn, why they behave as they do socially, why they experience the feelings they do and deal with issues as they do, they would better understand themselves and their actions. With this understanding they might be better able to make improved choices in school and at home. (NCSU, n.d., Retrieved October 8, 2003 from <http://www2.ncsu.edu/unity/lockers/project/helpyourself/project.htm>).

The staff members at CCMS who serve as advisors are currently implementing this program alongside our efforts to address other issues relevant to young adolescents.

As we continue to seek out ways to make the few minutes advisors spend with their advisees each day more meaningful, we also recognize the need to continue to protect these few precious moments of time together.

Intramurals

Model Middle School Planning Committee

The planning committee determined late in the planning process that the CCMS extracurricular program would include an athletics component. A report from a sub-committee stated that the athletics program would focus on “Extensive intramurals, daily physical activities outside the traditional schedule, lifetime sports, if interscholastic sports then no-cut policy” (WCPSS & NCSU, CCMS planning sub-committee report, April 24, 1995).

Later that year, the committee released a report that included the fact that a comprehensive intramural athletics program would be in place at CCMS. “A unique feature of CCMS is that it will offer no interscholastic sports. The intramural program will emphasize participation, fitness, coordination, and skill development (WCPSS & NCSU, planning committee report, August 1995, p. 9).

CCMS Operationalization

Centennial Campus Middle School does not offer an interscholastic athletics program. In its stead, the school offers an after-school intramurals program. In making this decision, which is consistent with the vision of the Model Middle School Planning Committee and, at least, some of the middle level education research, we determined that our ultimate goal was to maximize student participation. As proponents of healthy competition and healthy lifestyles, we agreed that our students would have access to after-school opportunities in a variety of physical activities. Each year, we survey our students to determine their interests. The activities that are then sponsored are based completely on the students' responses. Over the years we have been in operation we have offered soccer, flag football, track and field, basketball, volleyball, softball, and cheerleading. Coached by our physical education staff and interested faculty members, any student who meets academic standards may participate. The academic standards are consistent with those that govern participation in interscholastic athletics in other middle schools in our school system.

We will continue to offer an intramurals program at CCMS. With over 120 sixth, seventh, and eighth graders participating last year, we are convinced that the opportunities our program offers our students are safe, non-threatening, fun, and healthy.

Architectural Design

Model Middle School Planning Committee

The designers of CCMS envisioned a building that would be “...highly flexible, supporting a variety of student groupings and ways of learning” (WCPSS and NCSU, CCMS concept document, 1995, p. 21). Specifically, the planning committee noted the importance of :

- Natural light;
- Openness to the external environment;
- Flexible walls and movable furnishings;
- [An] arrangement [that] allows students to move easily from area to area when working on projects that involve several disciplines. (p. 21)

It was determined that the school would be composed of three clusters of approximately 200 students each. Each cluster or house would contain four teams of 50 students and two teachers. The architectural description included:

Clustering by grade level will give students a strong sense of group identification while grouping students and teachers together into purposefully small interdisciplinary team will reinforce opportunities to develop strong personal relationships. (WCPSS & NCSU, architectural program for CCMS, 1995, p. 10).

The planners also recognized that the premise underlying these thoughts was “...to allow a sense of closeness to develop between students and teachers which enhances the development of intellectual growth, academic achievement, and emotional and social maturity” (WCPSS & NCSU, architectural program for CCMS, 1995, p. 10).

One member of the planning committee shared in an interview that CCMS “...may have been one of the first schools that we built...where it had been designed to match the program that had been proposed.” She went on to state that may have been possible because the program planned for the school was so “well-defined.”

From these descriptions of their vision, it is clear that the school’s designers had a clear understanding of the middle school concept and adolescent development.

CCMS Operationalization

The CCMS building consists of four houses, administrative suite, media center, cafeteria, gymnasium, multi-purpose room, and exterior physical activity areas (see Appendix V for a map of the CCMS building). The four houses accommodate the sixth, seventh, and eighth grades as well as the exploratory classrooms. Each of the grade level houses includes eight regular teaching classrooms, one special education resource room, one science lab, a project room, teacher office space, book room, and a

commons area. The classrooms are paired and are linked by two four-foot doors. These doors, when not closed, create an eight-foot opening that facilitates whole-team activities and easy supervision of all students. The science lab is designated for use by all teachers at the grade level. Its use is determined by the needs of the students and the teachers. The project rooms in each of the houses were originally designed for students to use for small group and independent work. Since the second year of operation, we have used the rooms for classroom space for teachers to work with small groups of students on reading and math skills as well as social skills and self-managing behaviors.

The commons areas in each of the houses, now commonly known as the “wolves’ dens,” are used for whole house meetings, cross-team activities, tutoring and mentoring, performances, demonstration lessons, and special presentations. The school does not have an auditorium, and these spaces allow entire grade levels to assemble in a single space.

The school’s gym accommodates the entire student body and is used for whole-school assemblies, large parent meetings, and special dance and choral performances.

The design of our building at CCMS clearly indicates our desire to implement a program that builds small communities of learners in a school-within-a-school model. The four-house structure reduces the size of the

school for the individual student and encourages teachers to work together by allowing them proximity to their housemates.

NCSU Partnership

Model Middle School Planning Committee

From the beginning of the planning of Centennial Campus Middle School, the importance of the school working in partnership is evident. In 1989, the Triangle J Council of Governments noted in its memorandum of understanding that “A full partnership should be established...and a clear description of collaborative existence” (Triangle J Council of Governments memorandum of understanding, June 1989, p. 3). In its proposal in May 1992, the NCSU College of Education stated “The Centennial Campus Model Middle School offers North Carolina State University an opportunity to take a leadership role in the development of new models and technologies for middle grades teacher education and educational administration” (NCSU, proposal, May 1992, p. 3).

As the planning for CCMS became a collaborative project of WCPSS and NCSU, the discussion of the partnership between the school and the university focused on the need for the school to be a different model, steering clear of the traditional lab school example.

In October 1993, the planning committee noted that the school would use “...NCSU resources: faculty, students, and others...’Professors in

Residence' from various NCSU colleges, demonstration classes, mentorship/independent study with students..." (WCPSS & NCSU, draft of key issues, Oct. 1993, p. 5-6). The committee also posed the question of how CCMS could "Help university research...not just being subject for..." (WCPSS & NCSU, meeting minutes, Oct. 29, 1993, p. 7).

In November of that year, the committee released a draft of the proposal for CCMS. In this draft the planners detailed the school's relationship with NCSU:

To conduct...research relative to early adolescent development, curriculum, methodology, school organization, teacher education, school governance and administration, etc....To improve teacher education at NCSU through faculty clinical experiences, mentorships and action learning research as well as student opportunities to work as aides, tutors, coaches, and student teachers... To demonstrate the effectiveness of university/public school collaboration and stimulate further efforts in this regard. (WCPSS & NCSU, proposal for CCMS, Nov. 30, 1993, p. 2).

The NCSU College of Education and Psychology released a paper in September 1994 stating that this effort between the College and CCMS:

...unites the programs of the College of Education and Psychology with those of other Colleges and Schools at NCSU in developing a middle school that challenges young adolescents with opportunities to

learn science, mathematics, language arts, and social sciences and to integrate these disciplines in a technologically rich, global society.

(NCSU, The Centennial Middle School, Sept. 1994, p. 1).

In the précis presented to the WCPSS Board of Education in October 1994, the planners stated the school would offer students the opportunity to “... complete independent study with professors and graduate students...conduct research with...university scientists...[participate in] activities [that] extend beyond the classroom...(WCPSS, board of education précis, October 1994, p. 1).

The planners emphasized in March 1995 the need for “...cross-college buy-in...” (WCPSS & NCSU, compilation report, March 1995, p. 4). One interviewee explained that he had presented the CCMS concept to colleges across the campus and had over 800 NCSU faculty members express individual interest in teaching “mini-courses” at the school. Another shared that the alliance was envisioned as one in which “...the school staff and [North Carolina] State staff [would] work with students.”

Within the discussions about Centennial Campus Middle School and the shape of its program, the planning committee included from the beginning a component that would include a direct and specific connection with the NCSU College of Education. Initially this link was given the name the CCMS Teacher Education and Outreach Institute. The purpose of the institute, according to the documents, was “...to learn and apply exemplary

strategies for enhancing the education of young adolescents” (WCPSS & NCSU, final report of the task force on teacher education and outreach, May 3, 1995, p. 1). This partnership-within-the-partnership would “...promote ongoing research, professional development, and dissemination through the assistance of advanced technologies” (p. 1). The program components of the institute would include teacher education and outreach, staff development and community outreach, distance learning and related technologies, and research (pp. 5-6). It was agreed the education and outreach institute would be constructed during the second phase of the CCMS project, which meant it would open after the school was completed.

This institute, which represents the strength of the partnership between the school and the College of Education, has not been constructed. Now named the William and Ida Friday Institute for Educational Innovation, it will be housed in a building on our campus and physically connected to our building at the first and second floors. Although the Institute is still in the planning stage with construction slated to begin in 2004, its mission is well defined, “The mission of the Friday Institute is to foster high achievement for all learners through the collaborative development and dissemination of innovative, technology-enabled, research-based, educational practices and products.” Within this mission, five interdisciplinary collaboratories have been established. They include:

- Mathematics and Science Education.

- Instructional Technologies to Enhance Teaching and Learning.
- Middle Grades Education.
- Cultural Connections in Education.
- Leadership for Educational Effectiveness. (William & Ida Friday Institute for Educational Innovation., NCSU., n.d., Retrieved October 10, 2003, from <http://www.ncsu.edu/friday/>)

CCMS Operationalization

As we began the process of cultivating a partnership with North Carolina State University, we faced a number of challenges. The first challenge we discovered was that no model existed for creating a partnership with an entire university. There is evidence in the literature that documents the operation of lab schools in which schools cooperate with university or college education departments. We turned to this research for information but had to be certain that we balanced our relationship with the NCSU College of Education (COE) with that of the other nine colleges on campus. Since members of the COE have been intimately involved in the planning of CCMS, it was clear from the beginning that our alliance with them would be the strongest.

The partnership between CCMS and the NCSU COE has indeed flourished. Members of the faculty were invited to assist in the interviewing of teacher candidates that took place in March 2000. Since that time,

faculty members from the COE have participated in our staff meetings, facilitated meetings for our staff, conducted staff development for our teachers, worked with individual teachers on classroom projects with our students, and carried out research that benefits the COE and our students. Undergraduate students from the COE have the opportunity to observe in our classrooms and assist teachers in the performance of daily duties and student teachers are placed with teachers for semester assignments.

Although we work weekly with the COE, we continue to be aware of our school's mandate to be a partner to all colleges on the NCSU campus.

Second to the COE has been our partnership with the College of Engineering. In years one and two, we participated in a grant sponsored by the College and funded by the National Science Foundation. Through this grant, which focused on increasing interest among minority students and female students in math and science, we had one graduate student assigned to each of our three grade level houses. These students spent ten hours per week in our building. They participated in instructional planning and worked with teachers and small groups of students on math and science-related projects.

In the two subsequent years, we continued to work particularly closely with faculty members from the College of Engineering. Frequently they worked with our science and math teachers and our students on projects ranging from the construction of amusement parks and its

relationship to our curriculum objectives to the successful completion of projects for our annual science fair.

Other colleges, such as Agriculture and Life Sciences, Veterinary Medicine, Humanities and Social Sciences, have actively provided support for our instructional program. Seventh grade students at CCMS, for example, have the on-going opportunity to assist veterinarians from the College of Veterinary Medicine in providing care for the animals at the North Carolina Museum of Natural Sciences in internship capacities.

In addition to the partnership we have cultivated and now work to expand with the ten colleges, we also work closely with a number of organizations and other departments on the NCSU campus. For example, the Centennial Campus Development Office includes our school as an associate and regularly invites us to participate in events planned for their unique section of the NCSU campus. That office also works closely with us in providing links between our teachers and our instructional program and the private businesses represented on Centennial Campus. Over the past three years, we have been able to provide our students with job shadow and internship opportunities with associates on the campus.

In addition, and most recently, we have been included under the work study umbrella of the university. Within this partnership, we are permitted to hire students to work in our building. During year three, we utilized the work study students to staff an after-school program at CCMS for sixth

grade students. More recently, we are using the students to work directly with our teachers in the classroom to assist students as well as working after school with small groups of students on improving reading and math skills and on special group projects.

The list of outreach activities included in Appendix W details other partnership activities that our school and the university have shared.

Critical to our partnership with North Carolina State University is the CCMS Outreach Coordinator. This position, as mentioned above, plays a number of roles (see Appendix L for description of outreach coordinator's position). She meets weekly with our teachers to assist in their instructional planning. As they work through this process, she helps them make links between the course of study, their curriculum maps, and NCSU. She is careful in her work with the teachers to ensure that the curricular links to the university that are suggested form a natural relationship. We are conscious of forcing partnership links in places in which they do not support the instructional program and the curriculum objectives. The partnership is, after all, based on the enhancement of our instructional program and the needs of our students.

From the planning meetings, the outreach coordinator pursues the opportunities on campus. She has formally identified a liaison in each of the ten colleges on the campus. These liaisons are used as conduits to their respective colleges. The role of the NCSU liaisons, which is critical to our

communication and collaboration with the university, is designed to encourage broad participation by the university in our instructional program (see Appendix X for a description of the liaison position).

For example, during the first quarter of the 2002-2003 school year, the sixth grade planned a unit entitled “Reflections of the Past/Visions of the Future.” As shown in Appendix H, the links to NCSU included a study of the ecosystem on our campus, Wildlife Education, and Astronomy Night. With this unit, the outreach coordinator contacted the liaison in the College of Physical and Mathematical Sciences to arrange for faculty support of the Astronomy Night events.

The principles of collaboration mentioned in the above sub-section on teacher collaboration have also guided the manner in which we have cultivated our partnership with North Carolina State University. Just as our house teams have done, we agreed that to achieve our goals we would establish operating norms or ground rules that would govern our partnership. These rules permit us to manage the partnership in several different areas:

- Work with liaisons from each of the ten colleges;
- Research opportunities for NCSU faculty and students;
- Observation opportunities for College of Education students;
- Use of our facility by university groups;
- Tutor and mentor program;

- Work study program; and
- Field trips to the university.

Our outreach coordinator has developed over the past three years a set of policies and procedures that govern our relationship with the university. Included in this manual are:

- Code of ethics;
- Shared facility use;
- External research procedures;
- Observation procedures; and
- Role descriptions for the NCSU college liaisons.

The code of ethics governs the behavior of NCSU representatives on our campus. It includes information on security, attendance, dress code, and field trips. The information on facility use was developed to ensure that any NCSU college, department, or group that makes a contribution to our instructional program is provided free use of spaces on our campus for their own programming and special events. With space at a premium on the campus, we are asked regularly to provide meeting and training space as well as access to our physical activity fields. This in-kind exchange agreement was developed with input from the Wake County Public School System.

The external research procedures were established, in alignment with the guidelines of WCPSS, to control the research conducted by the

university on our campus. The guiding principles are that the research has to benefit our instructional program and/or our students and must not decrease instructional time for our students. The liaisons serve as the screening panel. They review requests for research and determine the appropriateness.

Observation procedures guide the use of our classrooms by university faculty and students. The procedures are designed to protect instructional time and to ensure a safe and orderly environment.

Although the planners of Centennial Campus Middle School were clear in their vision of the school's partnership with North Carolina State University and offered certain suggestions for working collaboratively in a cross-college manner, we quickly discovered that no model existed for us to follow in cultivating such a partnership. Because of the lack of such research, we developed our own set of policies and procedures that govern the partnership and ensure mutual benefit.

Summary

The purpose of this chapter was to analyze the documents that detail the Centennial Campus Middle School planning process between the years of 1988 and 1999. In addition, information gathered from interviews was considered. From this data and consistent with the research presented in chapter two of this dissertation, I chose certain components of the middle

school concept to focus on in relating my experiences in program implementation.

Chapter Six

SUMMARY AND SUGGESTIONS FOR ADDITIONAL RESEARCH

Introduction

Traditionally the final chapter of a dissertation offers the implications from the study that was conducted and, perhaps, the need for additional research. In this case study, I have taken a different approach. Since I am also the principal of the school that was the focus of this case study, I have presented the information in the following section as eight lessons that I have learned. As the leader in the operationalization of the plan developed for Centennial Campus Middle School and the investigator in this study, I have been taught a great deal. I also put forth that those who spent years planning the school and those who have assisted me in implementing that plan have learned a number of lessons. It is through these lessons that this study contributes to the existing literature and establishes the need for future research. It is also in these “lessons learned” that this study responds to the research questions posed in the introduction:

1. How did the concept that underlies Centennial Campus Middle School and its partnership with North Carolina State University come into existence?
2. How was the school’s program actually implemented and what shape does it take today?

3. What are the implications from the establishment of this school that may assist other educational leaders in creating responsive middle school programs and school-university partnerships?

This chapter concludes with suggestions for additional research that have arisen from this study. There is evidence from this analysis that a need exists for further investigation.

Lesson Number One

The importance of collaboration among planning committee members.

Successful collaboration was a key to the conception and planning of Centennial Campus Middle School. The Wake County Public School System and North Carolina State University, as early as 1991, had to define collaboration and to determine how the two institutions would frame their work together. After beginning the process in “a nebulous manner,” according to one school system administrator, a structure was put into place that permitted both institutions to share in the leadership of the planning efforts. Multiple meetings, constant exchange of ideas, draft upon draft of plans – all contributed to a time-consuming effort that led one interviewee to claim that “We talked about it forever.” Another interviewee stated “We met, and we wrote, and we rewrote.” “We could have sat down and done this whole thing in one day,” he stated. Although, he added, “It was very much about inclusiveness, involving parents, involving community

people...” It was that need for inclusiveness that prolonged the planning process.

The most current middle school research was represented in this planning effort by North Carolina State University. The need for input from middle school teachers and administrators, as well as community members, was represented by the Wake County Public School System. This symbiotic relationship between a school or school system and a university, according to Sirotnik and Goodlad, 1988, represented “...a form of institutional collaboration that rarely (if ever) has occurred in practice” (p. viii). The paths of truly successful collaborative efforts between schools and school districts and universities are not at all clear according to the literature. Since such relationships “...have scarcely been attempted. It is assumed, then, that there is much to be learned by everyone involved” (Sirotnik and Goodlad, 1988, p. 25). Patterson et al. (1999) pointed out that “collaboration [between a school or school system and a university] is not easy to achieve” and that it remains “an elusive concept to many who have tried to engage in it” (p. 29).

The members of the Model Middle School Planning Committee learned a lesson. They learned, as Patterson et al. (1999) claimed, that collaboration by school and university personnel is “more than just talking and working together, and it is more complicated than simply ‘bridging the differences’ that separate schools and universities” (p. 30). The school

system and university representatives, perhaps, bit their lips as they learned more about how each operates organizationally. One side patient with the notion of inclusiveness and the need for buy-in from constituents and the other, not as accustomed to community input, eager to get on with the work at hand.

One interviewee shared that the planning committee members' efforts in collaborating to create CCMS involved "...trying to take a public school model of what the university is saying is the model we should be going to, and taking public school people and figuring out how to implement it... the person [from the university] with the idea and the practitioner [from the school system] trying to write something and form a vision of what it can be and how it can work."

It is clear that the members of the planning committee learned that they would have to follow certain steps in their efforts to create a partnership that would encourage meaningful collaboration. These steps are parallel to those Teitel (1994) identified as being critical to the process. "They must decide to collaborate, establish who will be involved, identify and select their partners, define and negotiate the extent of the collaboration, ...(p. 248). They also learned that the most critical factors in shaping a successful school-university collaborative effort were "...the willingness to collaborate, [and] the development of shared goals, ..." (Verbeke and Richards, 2001, p. 43).

The planning committee members learned, as one interviewee stated, that “You have to have people really buying into a vision, so it has to be explained and sold.” The planners learned that their efforts were not just in creating the vision for the school but in actually making that vision a reality. Another interviewee shared, “... it’s real easy to write what a middle school is, that’s what we struggled with, all of us. It’s more difficult to make—and what this group did was put in place an expectation that [the school] was going to happen.”

Lesson Number Two

The importance of collaboration among staff members in actualizing a responsive middle school program.

The second lesson learned about collaboration occurred after the school opened. We, as a staff, learned early in our first year that we would be required to work together in a manner with which we had little to no experience. Although middle school models exist in the research and there is data to support the difficulties encountered in establishing and sustaining school-university partnerships, we felt, at times, that we were indeed charting new waters. This feeling of unmapped territory was the case because of the reality of the work that lay before us. The vision of the school planners was clear: *bring to life a school that responds to the needs of young adolescents in a manner that creates meaning for them, and, in doing so, call upon the resources of a major research university for assistance.* To

get there we first had to recognize that we would have to work together and, then, we had to learn how.

The intensity of the work of learning how to map curriculum, collect the data, use the maps as tools in integrating across the disciplines, and deliver meaningful instruction to our students combined with the rigors of everyday life in a middle school with 600 students who represented every facet of the local society required us to lean on each other in a way that many of us had never experienced. Although time existed within our daily schedule for teachers to collaborate with each other, there was just so much to learn. As one new CCMS teacher exclaimed during year two in operation, “I have two hours of planning time each day here and yet I have less time than I have ever had before.”

It was late in year one that we realized that we were not particularly skilled in the art of collaboration and began to have that discussion. We realized that simply having the time to plan together was not adequate. We needed to know better how to use the time. The research clearly states that adequate time is necessary for teachers at the middle school level to allow for team planning. The research also suggests models for daily schedules that permit such planning time. (Beane, 1997; Clark and Clark, 2000; George and Alexander, 1993; George, Lawrence, and Bushnell, 1998; Manning and Bucher, 2001; Stevenson, 1992; Stevenson and Carr, Eds., 1993; and Wavering, 1995). This research does not offer specific guidelines

for how to ensure that the time allotted is properly used, nor does the research include data on how to teach teachers how to collaborate. Although we were able to get some information from a presentation by DuFour (2001) at the national conference of ASCD and the National Staff Development Council (National Staff Development Council, n.d., Retrieved on October 9, 2003 from <http://nsdc.org/>) on strengthening collaborative teams, the scarcity of data forced us, again, into those new waters.

The schedule we instituted clearly delineates the purposes of the different planning times teachers have during the course of a week. Our four houses – sixth grade, seventh grade, eighth grade, and exploratory – schedule meetings each week for intra-house and inter-house instructional planning purposes. At this meeting, all teachers are present along with our outreach coordinator and new instructional resource teacher. The exploratory teachers are represented at the grade level meetings to ensure a balanced flow of information among the houses. We have learned that this time must be protected for discussions and planning for instructional purposes. Every effort is made to avoid administrative tasks such as scheduling parent conferences, discussing a student's behavior, and making arrangements for a field trip. These tasks are discussed on a different day, which is designated for such.

With this system in place, other lessons have been learned. We have learned how difficult it is to separate discussions about instruction from

those about administrative items, and we continue to struggle. The important part of this lesson is that we are aware and have regular conversations about how to use our time in the most meaningful manner.

In addition, we are still learning how to use our meeting time efficiently and effectively. We ask that every meeting be guided by an agenda and that everyone participate. We also ask that everyone utilize active listening skills and make decisions through consensus-building.

We have learned that problems do arise in our efforts to collaborate and that most of them can be resolved. We have learned that when an issue does arise in our efforts to work together it typically revolves around the fact that one teacher in each house is serving as a leader of his or her peers and is not skilled or, perhaps, not comfortable with all aspects of being a leader. For example, one house leader struggled with conflict resolution on a team. The problem stemmed from the house members being unable to reach consensus on the placement of a particular instructional unit in their calendar in relation to events that were actually happening in the world. Would they shift their plans to connect instructionally to current events? How would they build consensus in doing so?

Another example occurred when a house leader met with me to discuss concerns about team member participation and follow through. The teacher who was serving as house leader asked whether house leaders were authorized – perhaps, deputized – to ensure that all house members

contributed to the instructional planning process and, more importantly, in ensuring that the house members actually implement in their individual classrooms that which was agreed upon by the whole house team. The house leader was concerned because one lone teacher was behaving as a maverick and, in the house leader's opinion, needed roping in.

In both of the above situations, the teachers worked through the issues at hand without my interference. There was one experience with conflict resolution among one house of teachers in year two of operation that led to my direct involvement. When we failed to achieve an acceptable level of consensus, one teacher was assigned different duties in the building after we agreed that we would not be able to move forward and that the instructional program may be compromised if we took no action.

Our communication system, with the house structure at the center, has led to fewer faculty and leadership team meetings. The strength of the system is the efficiency with which information can be disseminated. The tenuousness of the system is that its success rests squarely on the shoulders of the house leaders and their ability to communicate and to lead others in collaborative efforts.

Figure 2 demonstrates the overlapping features of the communication system in place at CCMS. The diagram exhibits that a relationship exists between each of the leading five structural components of the school. There is consistent interplay among the houses as well as generous blocks of time

protected for each house to tend to its own members. The members of the administrative team are connected to each house at several different points. One administrator is assigned to each of the four houses. This encourages the participation by one administrator in the weekly house meetings. In addition to this, a house may invite any administrator or all of the administrators to a particular meeting. The administrative team also connects through regular contact with the curriculum area contacts and the leadership team.

The most striking feature of the diagram in Figure 1 is the relationship that each component has to each other and to the whole. The message from this diagram should be one of commitment to creating a system that benefits each member of the school family

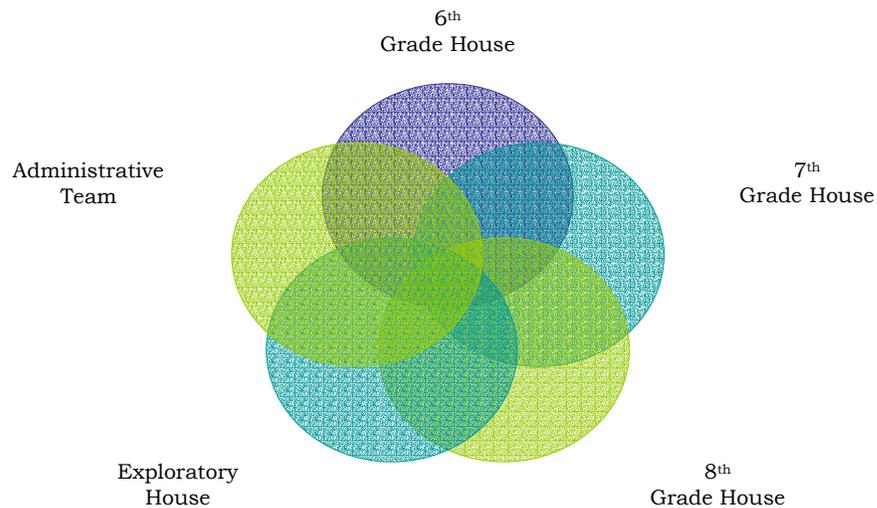


Figure 2. Communication system at CCMS

Lesson Number Three

The importance of hiring decisions in creating and maintaining a collaborative culture.

The success of our efforts with collaboration as described in the preceding section rests squarely on our ability to hire teachers and staff members who not only embrace the vision of Centennial Campus Middle School, but also are willing to develop strong collaboration skills. This has proven to be an area that is taken increasingly more serious as we screen and interview candidates for positions in the school.

I have learned that one cannot spend too much time screening and interviewing teacher applicants. I have learned that one must share as much information as possible about our school's program with interested candidates. Since the early days of the school, we have held to an ideal that all teachers hired would be fully informed of the school's vision and how that vision was developed. Since opening, we have added the step of making certain new teachers are aware of the challenges we face in making the vision a reality. I now know that prospective teachers must be made aware in advance that working at Centennial Campus Middle School is unlike teaching at many other middle schools especially in the time required for planning and collaboration. I have also learned that making them aware is difficult because most candidates come to the interview with little

experience in collaboration and, therefore, little knowledge about its demands.

Since our opening in 2000, I have also learned that our screening and interviewing processes are not perfectly dependable. Even when armed with a teacher profile and an exhaustive list of interview questions, I have made several poor hiring decisions.

We have had issues with teachers over-working. During the first semester we were in operation, two teachers, finding themselves regularly working to 8:00 or 9:00 p.m., literally stretched themselves to the point of breaking and by the winter break in December, both resigned. This taught us two lessons. The first is to monitor closely the work of those teachers who have joined our staff in the ensuing years. We do this through conferences and release time for planning and observing other teachers. The house structure itself, structured as small communities, allows supportive networks of peers to develop. We also now assign informal buddies to each new teacher, which is in addition to the mentor program that the State of North Carolina requires for initially licensed teachers.

Lesson Number Four

The demands of an age-appropriate instructional program at the middle school level.

Although I began working with young adolescents in 1976 and thought I understood middle school curriculum and instruction, I now know that I had a lot to learn when CCMS opened in July 2000. The members of the Model Middle School Planning Committee spoke and wrote of the need for the school's program to be responsive to the needs of the young adolescent. They suggested, based on the research, that one approach be through integrative curriculum which would extend "...far beyond the 'correlation of topics' and occasional 'interdisciplinary units'" (WCPSS & NCSU, CCMS concept document, November 1995, p. 7). As explained in chapter five of this study, my experiences prior to the school's opening, lay with occasional interdisciplinary units only.

I learned that the amount of time integration requires and the intensity of that planning process are not well represented in the literature. Although the research does indeed refer to the need for adequate planning time at the middle school level, it does not explain well how to structure that time or how to sustain the structure. I have learned that keeping the vision of our program in the forefront at all times provides the direction and that there is never really enough time to accomplish the level of collaboration that is necessary. I have learned that we have to carve out additional time

for conversation on both the horizontal and vertical grade level planes and have to give up certain other activities to make this happen. We do so because we acknowledge the importance of collaboration and recognize its place in our efforts to plan meaningful instruction for the students.

The second lesson I have learned about curriculum integration is that there are regular points throughout the year when integration does not – cannot – take place within the state and local curriculum guidelines. It is constrained by the parameters that are established by the school system and state department curriculum guidelines. For example, there are points in the math curricula at all three grade levels when the teachers must simply literally close their doors to the notion of integration and teach certain concepts. Although these concepts or skills may serve as the basis for efforts at integration later in the school year, they have to be taught, initially, in isolation. The math curricula have proven to be the most difficult to integrate effectively.

I have learned that it is true that the concept of interdisciplinary teams of teachers does indeed make possible the successful planning and execution of integrated curriculum. Lounsbury wrote:

One of the great advantages of interdisciplinary teaming is the opportunity it gives teachers to integrate learning among various subjects. This intertwining of subject matter not only reinforces what

is taught, but also more closely resembles life outside the classroom...
(1992, p. 73)

Our teachers spend countless hours working in teams to make connections among the various disciplines and to plan instruction that allows students to make sense of these connections. The work we have accomplished is parallel to the vision that was established by the school's planning committee. In reviewing the examples of integrated studies represented in the concept document prepared by the Model Middle School Planning Committee, it is clear that we have held to that ideal (see Appendix A). Our grade level houses plan and implement units of study that are designed similarly (see Appendix G, Appendix H, and Appendix I for examples of instructional units). These instructional planning tools illustrate how the cross-discipline connections are made including the links to the students' experiences in their exploratory courses.

Lesson Number Five

Flexible scheduling is easy to describe and difficult to implement.

I have learned that creating a daily schedule that permits flexibility is not a difficult task. I have learned that actually operationalizing such a schedule is very challenging (see Appendix M and Appendix N for examples of the schedules). Each offers our students and teachers blocks of instructional time. These schedules are similar to the one proposed by the

Model Middle School Planning Committee (see Appendix A for the proposed schedule), as well as the research of George and Alexander, 1993; George, Lawrence, and Bushnell, 1998; Jackson and Davis, 2000; Manning and Bucher, 2001; Stevenson, 1992; and Walley and Gerrick, 1999.

Ideally, the teachers should be able to flex their use of the time within those blocks to meet the students' changing needs. For example, a team should be able to extend the amount of time on a particular day to complete model-building in a study of the local topography. Unfortunately, the flexibility of the schedule may or may not permit such in reality. There are several factors that restrain these efforts. One is that our school system's math program requires us to group homogeneously at each grade level for math. Since we have to adhere to these guidelines, math is scheduled at certain times of the day by the grade level houses and there are rare infringements on this time. The result is that only the time not used for math is truly flexible. At the sixth grade level this translates as one-half of the students' four-hour block. At the seventh and eighth grades, this translates as one of the two two-hour academic blocks. Within the remaining two-hour blocks, teachers have the authority to alter the allocation of time as determined by the students' needs.

Another restraining factor is the delivery of special education services. With a movement towards greater inclusion of all students in the regular education program, we offer many students who have individualized

education plans (IEP's) the opportunity to participate in regular classes with the support of a special education teacher. This “in-class resource” model positions two teachers, one regular educator and one special educator, in a co-teaching situation in a regular education classroom that includes a cluster of disabled students. The cluster size varies but typically ranges from five to eight. This arrangement necessitates the scheduling of special education math and language arts at particular times of the day to ensure that the students are served appropriately and the special education teachers are available to offer support.

Although we have attempted to create a schedule that permits flexible control by the teachers, we have not been able, as the school’s blueprint describes, to implement one that truly “...enables teacher to control time and grouping” (WCPSS & NCSU, CCMS concept document, 1995, p. 12).

Lesson Number Six

CCMS is a unique model of school-university partnerships.

The Model Middle School Planning Committee was clear in its vision for the partnership that would exist between Centennial Campus Middle School and North Carolina State University. As one member of the planning committee shared with me in an interview, “We did not want it to be a lab school.” The committee wrote in its final concept document:

As a land-grant, Research I University, N.C. State has a multitude of resources which can facilitate the mission of CCMS. The College of Education and Psychology, with an established middle grades education program and expertise relative to adolescent development, curriculum and pedagogy, will play a leadership role. (WCPSS & NCSU, CCMS concept document, November 1995, pp. 4-5).

One of the leaders of the planning committee stated that 800 NCSU faculty members said they would sign up to work with students at CCMS. He stated in our interview:

...you wouldn't believe some of the stuff. The guys from environmental sciences said that they would set up butterfly habitats... All the outdoor education stuff, the National Weather Service, they were going to set up hurricane watches. We were going to do all of these environmental projects... Middle school students were going to be apprentices to the aeronautical engineering with seniors who have to design an airplane. Other faculty were saying that they would mentor a kid, tutor a kid. The members of the committee actually envisioned activities that would link the school to the different colleges across the campus. (See Appendix A for a list of possible interaction activities as envisioned by the planning committee).

As the research reviewed in chapter two of this study

represents, there are models for creating and sustaining school-university partnerships that are designed to be laboratory, experimental, or professional development schools. Typically these projects are sponsored by university education or teacher-training programs and local schools or school districts. They exist for the purposes of enhancing the university's teacher training efforts and improving the school's professional development programs.

I was unable to find any evidence in the research that models exist for cooperative projects between schools and universities such as the one envisioned by the Model Middle School Planning Committee. That is, a partnership in which the students and teachers in the school are encouraged to use a university's resources across all disciplines on the campus to enhance the students' educational program.

Lesson Number Seven

The role of the outreach coordinator or "boundary spanner" is critical to the establishment of a school-university partnership.

The importance of the position of outreach coordinator, identified as the "boundary spanner" by Stevens (1999, p. 287) and by Sandholtz and Finan (1998, p. 14), is evidenced in the research. According to Stevens, "The boundary spanner [is] an intermediary who commutes literally and figuratively between the schools and the university, [and] plays a critical role

in the development of a successful partnership” (1999, p. 287). Teitel (1994) noted that “Partnerships often use liaisons, usually one person...responsible for funneling the connections between the two...” (p. 250). Although I was unaware of the concept of “boundary spanner” at the time we began our work on the partnership, it became clear to me early on that our position of outreach coordinator would be indispensable.

The responsibilities of the outreach coordinator at Centennial Campus Middle School are detailed in Appendix L. She is the most direct link between our teachers, their instructional plans, and North Carolina State University. Weekly, she meets with all teachers by house and communicates to them opportunities for their students at the university. She also uses these meetings to collect information from the teachers about their instructional plans. She, along with the teachers, brainstorm ways in which they might link those plans to various resources at the university (see Appendix W for a list of these connections for one school year, 2002-2003). Examples include:

1. Sixth grade teachers working collaboratively with one College of Education faculty member to organize a writing project in conjunction with the CCMS nature trail development.
2. The College of Engineering working with eighth grade students on a physics project in which students designed rides in an amusement park.

3. Sixth grade students visiting the arboretum as part of their instruction in soil science and biomes.
4. Seventh grade students assisting professors from the College of Veterinary Medicine as they cared for the wildlife at the North Carolina Museum of Science.
5. Eighth grade students serving as interns for the N. C. State Climate Office on Centennial Campus.
6. Seventh grade students assisting an NCSU physical education instructor in two fitness classes which coincided with the students' study of body systems and physical fitness.
7. Students from the CCMS life skills classes partnered with the ENCORE Program, which is sponsored through NCSU's Lifelong Education, and to conduct oral history interviews.
8. A member of the College of Physical and Mathematical Sciences taught a college-level astronomy class to CCMS students after school.

In addition to the resources provided our students, the outreach coordinator has been successful at arranging professional development opportunities for our teachers. Two recent examples include:

1. Two faculty members and a student from the College of Education, along with our outreach coordinator, designed and

implemented a staff development project focusing on adolescent development.

2. CCMS across all three grade levels participated in training that led our school to being certified as a Wild Education Site.

Although the members of the Model Middle School Planning Committee acknowledged the outreach coordinator position as a “specific staff need” (WCPSS & NCSU, CCMS concept document, 1995, p. 20), there is no evidence that they realized the absolutely critical role the position would play. There is no mention of any discussion of the position in the planning documents. It was well after we made this position a reality in 2000, including actually designing the responsibilities of the position, that I discovered that the research does note the importance of such a position. Sandholtz and Finan (1998) chose the term “boundary spanners” for those important individuals who “...establish critical links between schools and universities” (p. 14).

I learned that an authentic partnership with North Carolina State University would not exist if I, the principal, had to cultivate and sustain it. My responsibilities as the school’s leader are very similar to those of other middle school principals and have not permitted me the time necessary to foster a rich relationship with NCSU. Although I am very involved with many aspects of the partnership, the actual existence of it is due to the role of the outreach coordinator.

Lesson Number Eight

Clearly established guidelines allow for increased collaboration in a school-university partnership.

As we worked on operationalizing the planning committee's vision for our partnership with North Carolina State University, we realized that the lack of such a model in the research and, therefore, the lack of data to use in establishing a relationship, would force us into creating a set of guidelines to govern the association. As Osguthorpe (1995) noted:

...the creation of a partnership school is a journey into the unknown. The voyager knows some of the conditions and benefits of the destination, but not all of them... Most who set forth are aware of some of the dangers and pitfalls, but only those that can be inferred from journeys to other destinations. Reading the maps and logs of similar voyages undertaken by others can substantially increase anyone's personal knowledge about destination, price, and pitfalls. (p. 127)

Without the aid of "maps or logs," our ability to create a partnership, rested squarely on the shoulders of our outreach coordinator. She and I learned during year one of the school that clear guidelines to govern the partnership needed to be established. Although the Model Middle School Planning Committee frequently discussed the relationship between CCMS

and NCSU and suggested a structure that would facilitate the partnership, again, the operationalization was a challenge.

During the first year of the school, 2000-2001, we grappled with learning how the university operates. It is my suspicion that they were grappling with the same. In our efforts to create a relationship that would benefit our students instructionally while providing opportunities to further educational research and maintain a safe and orderly environment, certain guidelines were developed. These guidelines now govern the following:

1. Code of ethics;
2. External research procedures;
3. Observation procedures;
4. Shared facility use; and
5. Role of NCSU college liaisons.

Although all of the guidelines were created out of necessity and all assist in paving the way for a productive school-university relationship, the most beneficial are those designed to define the role of the university liaisons. Our outreach coordinator, in her efforts to create a balanced flow of information with the university, determined that we would need to identify from each of NCSU's ten colleges one person who would be our contact. These ten liaisons, serving as boundary spanners themselves, meet regularly with the outreach coordinator. At the meetings, our staff representative shares teachers' instructional plans, especially on the long-

term, in an effort to identify connections with college resources. The liaisons then return to their respective colleges and determine if the connections may be fulfilled. The outreach coordinator is also in periodic contact with the liaisons individually throughout the year as questions about the potential of developing a university connection arise from planning meetings with teachers.

An additional duty of the liaisons is to assist in reviewing requests for research. They serve as members of a panel that determines if the requests meet the guidelines created to ensure that research conducted on our campus is beneficial to our students and instructional program and does not distract from the instructional day.

Suggestions for Additional Research

As I conducted this case study of one school, its planning stages, program implementation, and efforts to cultivate a school-university partnership, related topics that may deserve additional research surfaced.

These include:

- Are there other ways to design a collaborative model within middle schools for teachers to ensure the efficient and productive use of their collaborative planning time? Since models for such collaboration exist for non-educational organizations and private industry, would an effective educational model be shaped similarly?

- How have middle schools designed responsive programs for young adolescents that involve the utilization of curriculum integration and remained within the parameters of local, state, and federal curriculum guidelines as well as special education policies and procedures?
- What are the long-term effects of the Centennial Campus Middle School-North Carolina State University partnership on student achievement? How can the effects of partnering with all ten colleges of the university be quantified for such a study?
- What leadership characteristics are essential for principals who endeavor to establish new middle schools and sustain responsive programming? What leadership characteristics are necessary for school principals who create and maintain school-university partnerships?

Summary

The purpose of my research centered on one school and three research questions. I summarize by reviewing these questions and my conclusions about each.

1. How did the concept that underlies Centennial Campus Middle School and its partnership with North Carolina State University come into existence?

It is clear from the analysis of the materials that document the work

of the Model Middle School Planning Committee that the Wake County Public School System and North Carolina State University entered excitedly into a project that required them to collaborate at a level that was unprecedented for the two institutions. As mentioned in the June 1995 report of the Model Middle School Planning Committee “Though WCPSS and NCSU have collaborated on hundreds of projects over the years, this endeavor goes well beyond others in scale, breadth, and commitment” (WCPSS & NCSU, CCMS planning committee report, June 1995, p. 4). The success of the endeavor rested on the ability of the two groups to recognize the need for shared leadership in the planning, a structure that permitted prolonged collaboration and the gathering of input from stakeholders, and, perhaps of most importance, patience.

2. How was the school’s program actually implemented and what shape does it take today?

The program that was crafted by the planning committee for Centennial Campus Middle School has been operationalized by a very devoted faculty and staff. With the vision of the planning committee clearly articulated throughout the documents and in the final concept description, we at CCMS have never had any question about the direction in which we should move. The question that has arisen is how we get there. Understanding that we would put into place as many of the characteristics

of the middle school concept as possible, we have structured our school – from a flexible schedule to the use of the most age-appropriate instructional methods – to respond to the changing developmental needs of young adolescents. Working through and around the limitations imposed by existing policies and procedures, we are supposed to be, in the words of one interviewee, “...as close to a true middle school...” as possible. We know, as she stated, that “They [true middle schools} are few and far between” and that “It’s a very difficult concept” and “...very hard...to implement.”

Also, facing the challenges of creating a collaborative culture at CCMS, we designed and implemented a structure that encourages team work. This team work occurs daily within and between our four houses as well as with North Carolina State University.

3. What are the implications from the establishment of this school that may assist other educational leaders in creating responsive middle school programs and school-university partnerships?

In identifying the implications, I have developed a list of suggestions.

That list includes:

- Recognize the importance of the middle school’s vision and ensure that it is communicated clearly at every step of planning and program implementation. If all staff members embrace the vision, actualization is a possibility.

- Ensure that such teachers have the skills necessary for productive and efficient collaboration. This may be achieved through training and on-going discussions and assessment.
- Ensure adequate time for teachers at the middle school level to collaboratively plan for instructional purposes.
- Learn and make known the non-negotiables as early in the planning process as possible. These non-negotiables include but are not limited to the guidelines that may impede full curriculum integration and interfere with genuine collaboration.
- Gain a clear understanding of adolescent development and review the research on such on a regular basis.
- Establish clear guidelines that govern the school-university partnership and communicate them through the use of boundary spanners. Remember that Sirotnik and Soder (1999) wrote:

Just as a two-year old may suddenly seem old for his or her age, or an adolescent to be reverting to the 'terrible twos,' partnerships seem to move forward in a jerky, messy fashion, rather than progressing predictably in a linear manner. (p. 200)

Concluding Statement

It is my hope as the principal of Centennial Campus Middle School and the author of this study that we will continue to cultivate and maintain

a program in the school that is true to the vision created by the members of the Model Middle School Planning Committee and based in the most current middle school research. We embrace the vision, understand the research in which it is grounded, and know that only through collaboration can we truly respond to the needs of young adolescents. It is also my hope that our partnership with North Carolina State University will provide our students with meaningful experiences as they explore and connect to the world that lies beyond the walls of their classrooms.

Centennial Campus Middle School is a special place. Two of the planning committee members interviewed for this study agreed. One characterized the years spent in planning as a “...special and exciting time...” Another said that she realized while working on the plans for CCMS that the planning committee was doing “...something special...” Therefore, it is also my hope that someone will continue to document the evolution of Centennial Campus Middle School, its program, and its partnership with North Carolina State University as the story of this special school continues to unfold.

Finally, it is my hope that the faculty and staff of Centennial Campus Middle School will continue to dance.

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List of Documents

The documents that were analyzed in this study are currently stored at Centennial Campus Middle School. They are listed below in the order in which they are referenced in the dissertation. In most cases the author or authors of the documents are unknown. Since most of these documents were the result of the work of the Model Middle School Planning Committee, they are listed with WCPSS and NCSU as the authors. The initials *WCPSS* indicate the Wake County Public School System. The initials *NCSU* indicate North Carolina State University.

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Appendix A

Centennial Campus Middle School Concept Document

A
PROPOSED PLAN
FOR THE
Centennial
MAGNET MIDDLE SCHOOL
Campus

REPORT OF THE

**WAKE COUNTY PUBLIC SCHOOL SYSTEM/
NORTH CAROLINA STATE UNIVERSITY
COLLABORATIVE PLANNING COMMITTEE**

NOVEMBER 1995

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F **ORWARD**

Background

The idea for an exemplary middle school developed collaboratively by the Wake County Public School System (WCPSS) and North Carolina State University emerged in 1988 from discussions of the Triangle J Council of Governments. This school, along with the model elementary and high schools planned in Orange County and Durham counties respectively, would give the Triangle Area a full K-12 complement of innovative, exemplary schools.

During the next several years, WCPSS and NC State administrators discussed the feasibility of establishing a middle school and an affiliated Teacher Development/Outreach Program on NC State's Centennial Campus. In the fall of 1993, a Planning Committee, composed of approximately 15 WCPSS teachers and administrators and 15 NC State professors and administrators, predominantly from the College of Education and Psychology, was established. Aided by a small planning grant, the Committee was charged with developing an educational program and governance agreement for the school and Teacher Development/Outreach Program.

The Committee met as a whole 10 times over a two year period and held a "community workshop" which was attended by over 150 people. Its work was augmented by six formal task forces, numerous *ad hoc* groups, and meetings with key people from community agencies as well as each of the colleges at NC State University.

Planning As An Ongoing Process

The ideas presented by the Planning Committee in this report are best seen as guidelines which provide a philosophy and direction for Centennial Campus Magnet Middle School (CCMMS). They are designed initially to provide information relative to the WCPSS/NC State Partnership Agreement and architectural programming and later for grant writing, hiring of staff, and general information to the public. These ideas are not etched in stone; no doubt many additional thoughts will be considered before the school opens.

It should be especially noted that once a principal and faculty are hired, they will modify these plans. As the ones who will implement the program, they must feel “ownership” and enthusiasm for the program if CCMMS is to approach its potential.

INTRODUCTION

Though WCPSS and NC State have collaborated on numerous projects over the years, this endeavor goes well beyond others in scale, breadth and commitment. The Centennial Campus Magnet Middle School (CCMMS) will involve an entire population of students, teachers and parents frequently engaged with faculty, students, and facilities of each of the university's 10 colleges, as well as its corporate and government partners on Centennial Campus. CCMMS will thus be the first middle school in the country to combine the resources of a respected school system, a major university and a technologically advanced campus comprised of business, industry, educational and government agencies. As such, it holds enormous promise to help young adolescents reach their full potential, to reach out to the community, and to influence significantly middle level education throughout the state and nation.

Mission

The Centennial Campus Magnet Middle School, a collaboration of the Wake County Public School System and NC State University, creates an exemplary educational community of young adolescents and adults who learn by actively discovering, integrating, and applying knowledge in a dynamic global and technological environment. This collaboration promotes educational change through a comprehensive state and national outreach program for educators, parents, and community members.

The school will be located on NC State's Centennial Campus, a research and advanced technology community of university, industry, and government partners. This setting nurtures the following unique aspects of the school and its outreach programs:

- *Extensive interaction between students and adults, including community members, industry and government researchers, and NC State professors and students.*
- *Exploration of adolescent concerns and real-world issues through a curriculum which integrates skills and concepts of various disciplines.*

- *Use of cutting-edge technologies as a resource in all teaching and outreach areas.*
- *Maximized linkages with other educators, parents and youth-serving professionals in developing and disseminating innovative teaching/learning strategies.*
- *Broad opportunities for ongoing research, evaluation, teacher preparation, and professional development.*

The Centennial Campus Magnet Middle School features a unique governance structure which promotes site-based decision-making. It will hold high expectations for all, and will provide a high-quality education which honors the diversity and unique needs of middle school students.

Particulars

- *CCMMS will be designed to house 600 students.*
- *Because of Centennial Campus architectural standards, no trailers or utility buildings may be added to accommodate more students.*
- *The school will consist of grades 6-8, with approximately 200 students in each grade.*
- *A pupil assignment plan in keeping with WCPSS magnet school policy will be devised prior to the opening of school to insure that the student body is racially, culturally, and socio-economically diverse and balanced for gender.*
- *The target date for the school opening is August, 1998.*
- *The affiliated teacher development/outreach facility will be open as soon thereafter as possible. Its opening date will depend on the availability and timing of funding from private sources.*

Relationship to NC State & Centennial Campus

As a land-grant, Research I University, NC State has a multitude of resources which can facilitate the mission of CCMMS. The College of Education and Psychology, with an established middle grades education program and expertise relative to

adolescent development, curriculum and pedagogy, will play a leadership role. In recent years, however, pre-college education has become a concern of *every college*. Every college runs educational weekend and summer camps for K-12 students; provides demonstrations, speakers and workshop leaders in schools; engages in funded K-12 research and curriculum development projects; provides extensive, hands-on inservice training; plans tours and special events for K-12 students; and is working on distance learning initiatives.

Many colleges also have ongoing networks with teachers in specific disciplines; conduct annual summer teacher education institutes; engage teachers in summer internships; and provide newsletters and other information about curriculum and teaching. Some 570 professors are listed as available to public schools for individual outreach activities.

Much of the expertise represented in these programs and services will be available to CCMMS. In addition, NC State has numerous physical resources to share in the partnership. A partial listing includes:

- high tech research and development laboratories
- small scale manufacturing facilities
- D.H. Hill library and access to libraries of other universities
- multi-media production studios
- research farms and forests
- animal stocks
- marine stations
- international exchange programs
- design studios
- an outdoor education/challenge ropes course
- high speed voice, video and data connections to the Information Highway

Further, there is a fast growing group of corporate and government Centennial Campus partners, including the National Weather Service, with whom promising links may be developed. Some of these partners are physically located on campus; others are off-campus research partners with whom technological linkages might be established. A current listing of partners is attached in Appendix I.

Finally, NC State has partnerships with off-campus agencies which can contribute to the school. Among these are the North Carolina Museum of Natural Sciences, MCNC, the North Carolina Biotechnology Center, and other state funded agencies.

Relationship to Other WCPSS Middle Schools

CCMMS is best understood as an innovation undertaken in behalf of the other schools in the system. Personnel from other schools have contributed significantly to the planning of CCMMS, and we fully anticipate that a flow of ideas and suggestions will continue once the school is opened.

Unquestionably, CCMMS will be a unique school having certain resources at hand that other WCPSS schools do not. While no school will be able to do *all* that CCMMS undertakes, many will be able to implement *individual* ideas, activities, and programs. CCMMS will be strongly committed to helping other schools in the system. Through staff development, observations, and curriculum development with CCMMS, every middle school in Wake County will potentially become a better school. Moreover, planning has already identified far more NC State faculty and community expertise than CCMMS can utilize. It is quite likely that CCMMS will serve as a catalyst in making much of this expertise increasingly accessible to other WCPSS schools.

CURRICULUM AND INSTRUCTION

Unique Emphases

The curriculum of the Centennial Campus Magnet Middle School, designed to be responsive to the unique needs of young adolescents, will have five major emphases:

- (1) *It will be highly integrative, exploring concepts, skills and issues across many disciplines.*
- (2) *It will engage students in frequent, significant interaction with adults, both on the university campuses and in the community.*
- (3) *It will emphasize “real world”, hands-on, active learning about substantive issues.*
- (4) *It will make extensive use of cutting-edge technology.*
- (5) *It will give careful attention to the cultural contexts and societal forces which affect adolescent development.*

The CCMMS *integrative curriculum* extends far beyond the “correlation of topics” and occasional “interdisciplinary units” characteristic of many schools. Frequently, inquiry-based themes and issues rather than subjects will be a curricular focus. The themes and issues selected will be designed to speak to the needs, interests, and concerns of young adolescents, and will actively engage them in planning and assessing activities. Many themes will emerge where students’ personal concerns intersect with significant societal issues. Thus the adolescent concern about physical growth and society’s concern about health may lead to an exploration of wellness; youths’ concerns about violence and conflict resolution might result in investigating themes such as war, peacemaking, and mediation. In pursuing these themes, skills and concepts required in the major disciplines by the *North Carolina Standard Course of Study* and the WCPSS curriculum will be intertwined. Appendices II and III provide several examples of integrative curriculum.

As the introduction suggests, *opportunities for students to interact significantly with adults are extensive*. In addition to CCMMS faculty and staff, many professors, corporate and government professionals (both on and off campus), graduate and undergraduate students, and parents will be accessible to students. There is great potential for individual interaction with

adults: conceivably, every student could do independent study, receive tutoring, have a “big brother/sister,” or engage in an internship/apprenticeship, depending upon need and interest. Group interaction with adults may occur through “professors in residence” offerings, mini-courses, demonstrations, visits to labs and agencies, research projects, community service projects, student teaching, social work and psychology internships, and volunteer coaching activities.

To give a few examples of *real world, hands-on, active aspects of this curriculum* (as well as its integrative aspects and interaction with adults) students may:

- *Learn how trees grow; how to identify animal habitats; and how to test the effects of humans on atmosphere, water, soil, plants and animals in conjunction with Project Learning Tree and Project Wild in the College of Forest Resources.*
- *Monitor pollution levels, flora and fauna in Lake Raleigh and the streams nearby, creating a data base.*
- *Be mentored by an aerospace engineering student, who must design and build a plane that flies in order to graduate.*
- *Through the College of Veterinary Medicine, help monitor the vital signs of an anesthetized horse during surgery.*
- *Work with a College of Textiles student who might be engaged in braiding carbon fibers into rocket nozzles for the Mission to Mars, producing synthetic skin for burn victims, or recycling crab shells into miracle fibers for bandages.*
- *Teleconference with staff of the National Weather Service to track a hurricane that is threatening the coast, or to find out if school might close the next day due to a snowstorm.*
- *Conduct oral history interviews with various ethnic groups in the Research Triangle area, publishing a series of monographs on the findings.*
- *Design a transportation system for the Centennial Campus (See Appendix II for a suggested approach).*

Many of these *activities will use technology extensively*. In addition, students may create an electronic magazine on the World-Wide Web, gathering articles and ideas from young adolescents around the world; exchange videotapes they make about their homes, school and community with students in

Ghana; be tutored in writing through E-mail exchanges with community professionals; explore the effects of global politics on education with students in Russia; engage in urban planning simulations; and a host of other activities.

Sensitivity to *cultural contexts* will be reflected throughout the curriculum, both in terms of the topics explored and the manner in which they are investigated. Students will be especially encouraged to examine issues from a variety of perspectives.

Teachers & Curricular Integration

All teachers, including those conventionally identified with academic core subjects, the unified arts, and special services will be engaged in the active, integrative type of curriculum described above. Academic teachers will work and plan together in two teacher teams representing the core disciplines, a feature which especially facilitates integrative learning. In addition, they will incorporate advisor/advisee and co-curricular activities into their thematic approaches.

The computer specialist will work primarily in regular classrooms in consort with the academic teams. (A separate keyboarding course will be offered until the time students arrive from feeder elementary schools with adequate keyboarding skills.) While “exploratory teachers”—those who teach art, music, dance, drama, physical education, home economics and technology education—will have their own space and offer discrete courses, they will facilitate curricular integration in two major ways. First, they will engage in special planning sessions with academic teams so that they contribute significantly to the themes and issues being explored. Part of this planning will be to devise exploratory activities which the two teacher teams can use in their classrooms or in special project rooms located in each of the three academic houses. Secondly, the exploratory teachers, who will function as a team and have regularly scheduled planning time together, will develop and implement themes and special projects of their own design.

The integrative role of special education teachers, librarians, counselors, and health personnel will be discussed under “Special Services.”

Instruction

A curriculum featuring integrative, active, real world learning that involves significant contact with adults implies new roles for both teachers and students. It is essential that teachers continue to be learners and problem solvers themselves. In many instances, they will not know the “answers” in advance; they and students may jointly develop insight and understanding. Effective teachers become “models of good learners,” illustrating how to pursue questions and how to make connections while structuring and facilitating student learning. By the same token, students cannot be passive learners, simply memorizing information presented to them which they give back on tests. They must develop initiative and responsibility, learn to ask and pursue significant questions, and to collaborate with others.

Thus instruction, which is inseparable from curriculum, will:

- Promote critical and creative thinking.
- Encourage students to question and discover.
- Respond to the individual needs, various intelligences, learning styles, and socio-cultural backgrounds of all students.
- Facilitate individual initiative and responsibility.
- Promote positive relationships within the school and community.
- Utilize the surrounding environment.
- Develop appreciation and respect for individual and cultural differences.
- Include a variety of teaching/learning strategies such as cooperative learning, reading/writing workshop, long term projects, work with manipulative materials, peer teaching, field trips, seminars, and community-based activities.
- Incorporate ongoing teacher and student self-assessment as part of instruction.
- Seek out new resources.

Co-Curricular Activities

A co-curricular program provides activities that support students' interests and greatly enrich the school's program. Most of the activities will be fully integrated into the regular school day; others will occur in an extended day program that involves students, parents and the community. Some of the most significant components will be:

- *A school/community service learning program for all students. Each team will participate in at least one comprehensive service learning program every year. Activities may include beautification projects or aide work at school, service related to nursing homes, day care centers, social agencies, fund raising, environmental projects, tutoring, etc. As teams serve in various projects, they will also study about the issues involved in the project. For example, students involved in nursing homes will learn about the aging process; those engaged in environmental endeavors will study political and economic ramifications, alternative solutions, etc.*
- *Extensive collaborative efforts with the university and the larger community agencies, including internships, apprenticeships and special projects. These will be in addition to regular activities discussed relative to the integrative curriculum.*
- *A comprehensive intramural athletics program instead of interscholastic sports. The intramural program will emphasize participation, fitness, coordination, and skill development. In addition to regular team and individualized sports, the program will offer outdoor education challenge activities, "new games," and unique contests some of which will be designed by students and faculty, which promote friendly competition among teams and houses. It is anticipated that many NC State students will serve as coaches or facilitators.*
- *An extensive club program and a mini-course program which will draw heavily upon the adult resources on the Centennial Campus.*
- *House and occasional all-school town meetings to involve students in participatory democracy and decision making.*

Organization & Structure

Because young adolescents need a sense of belonging, of feeling part of a group with which they can identify, the 600 students at CCMMS will be divided into small, personal units. Moreover, to maximize the potential of active, integrated learning, students and teachers will need unique ways of using time, space, and grouping procedures to explore the real world issues they will be confronting. The overarching structure must be highly flexible. Teachers need time to plan; students need time to learn and to interact. Hence CCMMS will have the following organizational features:

- *Houses for each grade level of approximately 200 students. Each will have activities such as assemblies, town meetings, newsletters, and community service projects. In due time, it is anticipated that the three houses will have multi-grade rather than grade level populations.*
- *Two teacher academic teams with approximately 50 students per team, reflecting the cultural, racial, and intellectual diversity of the student population. These small teams, working in one large “double room” and featuring instructors highly competent in at least two disciplines, e. g., social studies and science, are key elements in developing integrative curriculum and to the general operation of the school. Small teams promote close interpersonal relationships; allow teachers to know and build upon student interests, strengths and learning styles more effectively; provide a supportive environment for students of different cultures to interact in meaningful ways; facilitate assessment; make team planning easier; and encourage more flexible use of time.*
- *A team of exploratory teachers who will plan together as well as with teachers of core academic subjects.*
- *A flexible block schedule which enables teachers to control time and grouping. Within this schedule, there will be time for:*
 - daily joint planning for core, exploratory and resource teachers*
 - daily individual planning time for all teachers*
 - advisory type activities for core teams*

Figure I illustrates one way that this structure and schedule may be accommodated.

Figure 1: Possible CCMMS Schedule

Schedule is based on 7 hour day, 420 minutes
 Schedule rotates every trimester

| | | | | |
|------------------------|---|---|---|---------------|
| 6th Grade House | CORE SUBJECTS, LUNCH, ADVISORY ACTIVITIES (310 Minutes) | | EXPLORATORY COURSES Individual & Team Planning (100 Minutes) | 10 Min |
| 7th Grade House | EXPLORATORY COURSES Individual & Team Planning (100 Minutes) | CORE SUBJECTS, LUNCH, ADVISORY ACTIVITIES (310 Minutes) | | 10 Min |
| 8th Grade House | CORE SUBJECTS, ADVISORY (100 Minutes) | EXPLORATORY COURSES Individual & Team Planning (100 Minutes) | LUNCH, CORE SUBJECTS (210 Minutes) Exploratory Teachers, Lunch Individual & Exploratory Team Planning (100 Min.) | 10 Min |

SPECIAL SERVICES

Special Services, which include library/media, human resources (health and school counseling), and special education will extend, support and vitalize an integrative, interactive, and inclusive learning environment. In particular, these special services will acknowledge the individuality and worth of all students while increasing the relevance of learning.

A number of college student interns in education, social work, psychology, instructional technology, and physical education, working under the direction of professional staff, will contribute significantly to special services, lowering student-adult ratios in many instances.

Library/Media

The library/media center and its services will seek to create an atmosphere that encourages exploration, self-reliance, and creativity. In particular, it will help support an integrative curriculum through suggesting ideas, guiding investigations, finding and providing appropriate materials for teachers and students, and by providing special programs that promote reading, literacy, and expression. Staff will work closely with both academic and unified arts teams.

With extended hours, the library/media center will also offer services and programs to parents, NC State and WCPSS personnel, and the community at large. Students will play a significant role in the operation and maintenance of the center.

The library/media center should be located at the heart of the school, providing a setting that is comfortable, flexible, inviting, and engaging. It should be equipped with state-of-the-art technology, seminar rooms, and a full range of appropriate materials and resources.

Human Resource Center

The Human Resource Center will provide comprehensive service to both the school and the surrounding community. Its primary goal will be to help all children be successful at school, serving as a catalyst for integrating physical and mental health into the

overall curriculum and educational program. The Center will emphasize wellness and will educate students about health careers and other vocations. In order to accomplish these goals, the center will make available the following services:

- *Sports physical/health assessments for all students.*
- *Assistance with the management of chronic illness in order to improve student attendance and learning.*
- *Assessment of school identified problems that may have a health, mental health, or family component (e.g. looking into why a student sleeps in classes or often is ill)*
- *Mental health counseling and consultation for students, staff, and parents, on general issues related to the behavior, social development, and identity formation of young adolescents.*
- *Mental health consultation for individual and small groups of staff and parents, on their specialized needs related to students.*
- *Counseling for individual and small groups of students on their specialized needs.*
- *Crisis intervention.*
- *Parent and student support groups in areas of specialized need (e.g., grief and loss, anger control, cross-cultural interaction) as well as topics of general interest (e.g., homework completion; attendance/participation; postponing sexual involvement; exploring careers).*
- *Peer education, helping, and mediation programs for students.*
- *Health education program to teach students, staff, and parents about health issues relevant to young adolescents.*
- *Health related research and data-gathering by students.*
- *Mini-library of brochures, videos, books related to preventing health problems and promoting wellness.*

Services will be available to families whose children attend the school or who live in the CCMMS vicinity. Services will be offered at times that are convenient to the community and reduce barriers for working parents. A separate, outside entrance will provide access to the program during non-school hours and to reduce the traffic within the school during school hours.

School counselors will be key personnel in the human resources center. Through programs and personal interactions, they will promote self-awareness, positive relations with peers and adults, and competence and achievement for all students.

Counselors will work closely with classroom teachers, helping them to develop skills to become effective advisors and advocates for their students. They will also provide solution-focused personal counseling for students as needed. Counselors will help develop programs relative to career exploration, school-to-work transitions, peer helping, business community partnerships, mentoring, tutoring, etc. For parents, programs on early adolescent development, communication, discipline, and other topics of interest will be developed through the Teacher Development/ Outreach Program.

The extent of the human resources program will depend upon grant money and community services available.

Special Education

Special education will provide a flexible program to meet the bio-psycho-social developmental needs of a wide range of students. However, CCMMS will not likely be assigned students with severe cognitive or behavioral disorders who require self-contained classrooms. Exceptional students will be mainstreamed into house and team activities and the integrative curriculum to the greatest extent feasible. Personalized curricular plans and evaluation standards will be developed within this context, with parents frequently consulted. Special efforts will be made to tailor programs to student learning styles and various types of intelligence and to promote effective student decision-making.

Special education teachers will be closely affiliated with academic teams, jointly planning and often working with them in the classrooms. In addition, they will consult frequently with the team of exploratory teachers. All teachers in the school will be trained to teach all children with special educators frequently serving as mentors to other teachers in developing the necessary skills.

Exceptional students will have wide access to faculty, community, and college student mentor/tutors as well as technological

resources. Educational programs for parents of exceptional students through the school's outreach efforts will be available.

The special needs of gifted and talented programs will be met through individualized classroom projects and through thoughtful involvement in enrichment activities available to all students such as independent study with professors, graduate students, and Centennial Campus professionals; intern/apprenticeships; mini-courses; etc.

A special education resource room will be located in each house for classes in which students cannot be mainstreamed. Special education teachers will share office space with the academic teams in the houses.

ASSessment AND Evaluation

Assessment and evaluation at CCMMS will encompass three categories: student achievement and development, personnel performance, and program effectiveness. All three areas will be designed to provide basic information, foster improvement, and ensure accountability.

Student assessment (the process of collecting information to understand better how schooling is being experienced from a student's point of view) and *evaluation* (using specific criteria to judge and critique the quality of a student's work) are central aspects of learning. Assessment asks: What do students learn? What else do they need to know? How do they judge their efforts? Evaluation insures accountability and informs the learning process. The major goal of both procedures is to help students learn more effectively.

Assessment procedures will strive to be developmentally appropriate, technologically advanced, and equitable. As an integral part of the learning process, they will address various learning styles and reflect the goals of the school's integrative curriculum. Portfolios, student/advisor conferences, parent conferences, journals, exhibitions, anecdotal records, videotapes, feedback sheets, and written comments on reports may be used. Owing to the young adolescent's need to become independent, *major emphasis will be placed upon student goal setting and self-assessment through advisory conferences and various types of analyses developed upon the completion of a project.* Student evaluation procedures will include skills checklists, criterion reference tests and those procedures mandated by the state of North Carolina and by WCPSS.

In providing information for individual feedback to students, instructional planning, and accountability, assessment/evaluation at CCMMS will go beyond measuring academic achievement to examine outcomes such as teamwork, citizenship, cross-cultural competencies, workplace skills, and school and community service. We anticipate that over time, new ways to measure students' cognitive levels, intellectual curiosity and creativity will be developed in conjunction with research efforts of the Teacher Development/Outreach Program.

Program evaluation will focus primarily on the contribution of various programs to the overall goals of CCMMS. Evaluations by students, teachers, administrators and parents (and on occasion, outside evaluators) will address the methods, essential components, and outcomes of innovative strategies associated with the CCMMS mission. They will seek to make clear what interventions were used, how services were delivered, what advantages and disadvantages were identified during implementation, and the extent to which instructional strategies and programs were implemented as planned. Regular indicators such as standardized test scores, attendance, promotion/retention, and behavior, used for all schools in North Carolina, will provide additional measures of the overall success of the program. An added goal is that performance of CCMMS students will be examined on a longitudinal basis after they leave the school through research grants and/or doctoral student dissertations.

Personnel evaluation at CCMMS by administrators will involve individual and team goal-setting and review tied to the mission of the school and the particular needs of individual staff members. Whereas new teachers are presently required to be evaluated by the Teacher Performance Appraisal Instrument (TPAI), all staff will be encouraged to use videotapes, student evaluations of teachers/administrators, and portfolios to evaluate their own performance. Peer/collegial groups and professional credentialing groups are expected to play an important role in providing feedback and support.

The school's Personnel Advisory Council (see governance document) will provide input on all assessment/evaluation processes used at CCMMS. NC State faculty will play a leadership role in designing diagnostic instruments and new approaches to assessment that are geared to the needs of teachers and middle school students. This will entail the active involvement of CCMMS faculty and staff in the design and implementation of instruments and the use of results for instructional development and program improvement.

ADMINISTRATION AND STAFFING

The school will conduct an extensive search to attract an innovative principal who is highly experienced with integrative curriculum development. In addition, the principal must be a knowledgeable and skilled administrator, one supportive of site-based decision-making who can relate to and lead effectively the various constituencies affiliated with the school. An assistant principal with many of these same qualities will also be sought. Two clerical assistants will be needed for administrative support.

Each house will have a house leader to coordinate its curriculum development and activities. House leaders will be master teachers who lead by example. They may well be employed part-time and/or in the summer as clinical instructors in various NC State teacher education programs.

Experienced faculty with expertise in integrative curriculum and who reflect gender and cultural diversity will be actively recruited. Grant money will be vigorously pursued to hire faculty a semester in advance so that they can engage in extensive staff development and planning for the new school. Specific staff needs include:

- *24 academic core teachers (including house leaders)*
- *4 vocational education (2 technology, home ec., computers)*
- *2 healthful living teachers*
- *1 art teacher*
- *1 dance/drama teacher*
- *1 music teacher (part time)*
- *3 special education teachers*
- *1 media specialist*
- *2 counselors*
- *1 public health service nurse*
- *1 outreach coordinator who will help develop programs and link university, corporate, government and community personnel to the school*
- *Part-time consulting physician, psychologist, social worker, nutritionist, and consultants for exceptional children*
- *Secretarial and clerical support*

The number of staff actually assigned to the school will be dependent upon magnet staffing patterns in 1998 when CCMMS opens.

A RCHITECTURE

Goals & Principles

In designing and constructing CCMMS, the intention will be to create an attractive, innovative building which facilitates the school's unique goals and curriculum. It should have a comfortable, de-institutionalized atmosphere, with buildings and grounds that are educative (e.g., color coded wires and pipes; plants with identification tags). An added goal is for CCMMS to have a positive influence on school architecture, demonstrating ways that schools with limited land availability can be imaginatively and effectively designed.

The CCMMS building must be highly flexible, supporting a variety of student groupings and ways of learning. To the extent possible, all rooms should provide natural light and openness to the external environment to encourage its use as an extended classroom; flexible walls and movable furnishings to address changes in instructional strategies; classroom storage facilities for equipment and materials; space and storage to support technology instruction in all classrooms; white boards; tack walls; and shades and lighting that can be easily controlled. Space throughout the school must be accessible to students with physical handicapping conditions.

The unified arts rooms (art, music, dance/drama, technology, home economics) should be in close proximity to one another to foster communication among teachers. Also, this arrangement allows students to move easily from area to area when working on projects that involve several disciplines.

Grounds around the school will be equipped for various games, outdoor education and challenge activities, gardening and horticulture, animal care, and environmental studies. Some of these facilities will be available for community use as well.

Finally, as a Centennial Campus edifice, the school must be built and operated in accordance with the following 12 master planning goals of the Campus:

1. *Enhance and fulfill university, college and unit missions.*
2. *Be beautiful places that express the uniqueness of the university.*

3. *Be integrated with one another, forming a network of open spaces, connectors and landscape courtyards.*
4. *Create functional work environments that encourage interaction and communication.*
5. *Be continually maintained and renewed.*
6. *Be safe, accessible, and understandable.*
7. *Reflect responsible land stewardship.*
8. *Use land resources efficiently.*
9. *Be served with an effective transportation system.*
10. *Have a coordinated utility infrastructure that provides reliable & efficient services.*
11. *Be respectfully integrated into the city/neighborhood context.*
12. *Promote a prudent utilization of physical, financial, and human resources.*

Technology Infrastructure

The technology infrastructure, consisting of two distribution systems—one for telecommunications and the other for electricity, will mirror that of the entire NC State campus. This information will provide access to all NC State buildings and eventually to National Television Standards Committee video, the North Carolina Information Highway, Instructional Television Fixed Signal, Satellite Uplink, and 110 channel video.

Given high costs for equipment and the rapid rate of technological innovation, it is impossible to specify precisely what equipment will be feasible three years from now. The strategy will be initially to construct an infrastructure shell (closets, riser, raceway, conduit, and outlets) which will enable various technologies to be added in the future. Grants and donations for technological equipment will be actively pursued.

Architectural Programming

A full description of architectural requirements for the school may be found in a companion document, *An Architectural Program for the Centennial Campus Magnet Middle School*, prepared by Prof. Henry Sanoff and his associates from the NC State School of Design. The building will require a net building area of approximately 88,140 sq. ft. and a gross building area of

120,752 sq. ft., requirements which are in keeping with space allocations for other WCPSS schools adjusted for student body size.

T **EACHER DEVELOPMENT/OUTREACH PROGRAM**

Purpose

The primary purpose of the CCMMS Teacher Development/Outreach Program (TDOP) will be to encourage current and future middle school professionals, locally and nationally, to learn about, develop, and implement exemplary educational practices for young adolescents. Joining research and professional development to a “real world” school, it will offer numerous training opportunities and disseminate research findings and descriptions of exemplary practice through the assistance of advanced technologies. Further, it will provide educational services for parents and community professionals.

The remainder of the TDOP facility will be leased to various educational agencies, many of them NC State funded projects which offer K-12 outreach to public schools. These agencies will collaborate with various CCMMS outreach programs as well as pursuing their own agendas.

Funding & Phased Development

The TDOP facility will be constructed primarily with private funds. Since funds cannot be sought until after the partnership agreement between WCPSS and NC State is signed, it is likely that this facility will not become operational until the after the middle school opens. Whether the facility will be spatially integrated into the school, be built on a separate floor, or comprise a second building cannot be ascertained at this time. It is anticipated that much of the initial equipment needed can be obtained from grants and donations.

Financial support for overhead and maintenance will come from rental fees, indirect costs from grants, and possibly endowments. Partner agencies who have a presence in the facility will lease office and storage space. Also, a fee will be assessed for use of shared instructional spaces and technological facilities.

Program

The Teacher Development/Outreach Program will have five major components:

- (1) *teacher preparation;*
- (2) *staff development;*
- (3) *community outreach;*
- (4) *research; and*
- (5) *dissemination.*

In addition to meeting specific needs, these programs will facilitate dialogue among educational practitioners, scholars, parents, business partners, and interested professionals.

The TDOP will become a locus for innovative *teacher preparation*. In particular it will enhance teacher development programs at NC State. It will support internships, clinical teaching experiences, seminars, and observation opportunities on-site, and supervision via telecommunication of student teachers in rural sites. By being involved in a stimulating school staffed by excellent teachers, preservice and inservice teachers will have unique opportunities to learn about adolescent development, integrative curriculum, team teaching, innovative uses of technology, new methods and assessment techniques, and advisor/advisee relationships. The role of the teacher as a reflective practitioner will be especially stressed; classroom theory and practice will be more closely allied.

Staff development will provide ongoing education for CCMMS faculty, and a multitude opportunities for teachers from WCPSS, the state, and the nation. Observations, workshops, summer institutes, conferences, and seminars will occur on-site. Staff development will reach a wider audience through distance learning and other technologies, interactive classroom activities, electronic bulletin boards, on-line mentorships, teleconferences, seminars, courses, interactive media presentations, videos, software packages, etc.

Community outreach programs (both on-and off-site) may include topics such as adolescent development, parenting skills, discipline, working with exceptional children, interpersonal relationships, cross-cultural competencies, and communication skills. A home-school outreach program, using social workers, interns, and student field placements will be explored, as well as

a high school equivalency program for students' family members and others in the CCMMS vicinity.

Various types of *research* will be conducted through collaborative efforts of CCMMS faculty, NC State professors, and other professionals. Researchers will document and evaluate CCMMS and TDOP practices, explore aspects of early adolescent development, engage in curriculum development, and create new diagnostic and assessment instruments. CCMMS teachers will be especially encouraged to become teacher-researchers, frequently engaged in inquiries and action research projects in their classrooms. All research will be subject to WCPSS and NC State guidelines, and be screened by the CCMMS Research, Extension and Outreach Advisory Council.

Information about the school and research relative to teacher preparation, staff development and community outreach will be disseminated through various types of print, visual, and electronic media.

Existing Programs Which May Collaborate With The TDOP

Several NC State educational outreach programs were mentioned in the Introduction and Curriculum and Instruction sections of this report. There are many more which might collaborate with the TDOP. Four especially noteworthy are the Clinical Teacher Education Program, the Center for Research in Mathematics and Science Education, the Sci-Link Globe-Net Project, and the Science House.

The Clinical Teacher Preparation Program, College of Education and Psychology, enhances the quality of teachers entering the profession through on-site clinical experiences, mentorships, and action-learning research. This one-of-a-kind program has achieved national stature for the development and use of cadres of teachers who coach beginning teachers and student teachers, and is being duplicated at numerous sites throughout the country.

The Center for Research in Mathematics and Science Education (CRMSE), College of Education and Psychology, provides research, outreach and service to teachers, students, and

parents throughout North Carolina. The Center activities are directed toward the professional development of teachers, the research and development of classroom materials for new and emerging technologies, and student achievement through research and assessment. CRMSE has received more than \$2 million in external funding to support these activities.

Sci-Link and Globe-Net are innovative projects linking research scientists, science educators, teachers and students in translating current teaching practices. Through workshops and institutes, curriculum materials on environmental issues such as air quality, acid rain, global warming, and recycling are developed. Over \$2 million from various national and state foundations has supported these projects.

The Science House, College of Physical and Mathematical Sciences/College of Agriculture and Life Sciences, has helped teachers throughout North Carolina improve their knowledge of science and mathematics through active learning. These teachers in turn use active learning to make science and mathematics more meaningful and enjoyable for their students. Two vans traverse the state full time to provide on-site sessions related to appropriate use of technology in science and mathematics classrooms. The Science House also provides workshops and conferences, and organizes networks of teachers. It is a model of active learning, collaboration, staff development and outreach.

In addition to these NC State programs, initiatives of WCPSS such as Programmed Alternatives and Learning for Students (PALS), Cooperative Learning, Character Education, and Violence Prevention will be demonstrated to a larger audience through TDOP. Also, the WCPSS Adolescent Information Resource Center and the collaborative WCPSS/Wake Education Partnerships Library Power program (a model for changing the roles of media specialists and media centers in the education of adolescents) can provide remote access to the community at large.

Once costs and the availability of space for other agencies become clear, a list of prospective clients can be developed. Preliminary talks have already been held with the Center for Prevention of School Violence and the North Carolina Middle School Association.

Evaluation

The Teacher Development/Outreach Program will be evaluated in accordance with its effectiveness as a resource to CCMMS, the Wake County community, NC State, North Carolina, and the nation. Effectiveness will be measured through end of course/ workshop/ conference assessments; ongoing evaluation of various programs, including number of clients served, level and quality of services delivered; products developed; and grant activity. In addition, aspects of the teacher education programs will be reviewed periodically by the National Council for the Accreditation of Teacher Education, The North Carolina Department of Public Instruction, the Southern Association of Schools and Colleges, and the NC State Graduate School.

Space & Staff Needs

Assuming full funding for the Teacher Development/ Outreach facility, space will be needed for:

- A distance learning laboratory
- A software production laboratory
- A television production studio
- A demonstration interactive media classroom
- An auditorium for conferences
- Workshop and seminar spaces
- Laboratories
- Classrooms
- Library
- Staff offices
- Instructional space and/or offices, storage for various centers, projects, and agencies.

The resources of the Teacher Education and Outreach Program will enhance and complement those of CCMMS by integrating technologies and sharing the television production studio, media center, software production laboratory, and auditorium facilities. Approximately 28,655 square feet will be need to accommodate the TDOP. The media center will be supervised by the CCMMS media specialist and a technology specialist from the TDOP. In addition, the TDOP will have a full time director, a grants, contracts, and communications coordinator, a technology technician, and two clerical staff positions for support. A WCPSS program specialist from the Wake Center for

Professional Development will be adjunct to the TDOP, providing assistance to staff development initiatives.

A full description of architectural requirements for the Teacher Development/Outreach Facility may be found in the previously mentioned companion document, *An Architectural Program for the Centennial Campus Magnet Middle School*.

A PPENDIX 1: CENTENNIAL CAMPUS AND PARTNERS

Centennial Campus Residents & Partners

The reach of Centennial Campus goes far beyond its list of tenants. Each resident center, institute and program represents a partnership of university, industry and government members, sponsors and researchers. Their interaction makes it possible for each partner to do things which couldn't be done alone, speeding the pace of research and technology transfer, as well as the quality of teaching and learning. We proudly acknowledge the important contributions of each Centennial Campus resident and its partners.

Air-Sea Interaction Laboratory

Partners:

Indian Institute of Science, Bangalore, India
 Indian Institute of Technology, New Delhi, India
 National Science Foundation
 NCSU Dept. of Marine, Earth and Atmospheric Sciences
 Office of Naval Research
 U. S. Department of Energy
 U.S. Environmental Protection Agency

Applied Mathematics, Inc.

Partners:

NCSU Center for Research in Scientific Computation
 NCSU College of Physical and Mathematical Sciences
 NCSU College of Textiles
 U. S. Coast Guard
 U. S. Submarine Force

Asea Brown Boveri—ABB Transmission Technology Institute

Partners:

NCSU College of Engineering
 NCSU College of Physical and Mathematical Sciences

Centennial Campus Development Office

Partners:

Office of Finance and Business
 Office of Research, Outreach and Extension

EPRI Textile Office

Partners:

NCSU College of Textiles
 Electric Power Research Institute

Engineering Research Center for Advanced Electronic Materials Processing

Partners:

Advanced Micro Devices
 AG Associates
 Air Products & Chemicals
 Duke University
 Harris Semiconductor
 IBM
 Intel
 Keithley Instruments
 LSI Logic
 MCNC
 National Science Foundation
 National Security Agency
 National Semiconductor
 NCSU Dept. of Electrical and Computer Engineering
 NCSU Dept. of Materials Science and Engineering
 NCSU Dept. of Physics
 North Carolina A&T State University
 Research Triangle Institute
 SEMATECH (a consortium of 12 member companies)
 SRC (a consortium of 62 member companies)
 Texas Instruments
 UNC-Chapel Hill
 UNC-Charlotte

Facility for Ocean/Atmosphere Modeling and Visualization (FOAMv)

Partners:

IBM Environmental Research Program: Improving the Environment Through Innovative Uses of Information Technology
 National Weather Service
 NCSU Dept. of Marine, Earth and Atmospheric Sciences

Industrial Electrotechnology Laboratory

Partners:

Alternative Energy Corporation
 NCSU College of Textiles

Kenan Institute for Engineering, Technology and Science

Partners:

William R. Kenan, Jr. Charitable Trust
 North Carolina State University
 Asia Pacific Economic Council
 Federal Emergency Management Agency
 Hoechst Celanese Corporation
 Louisiana State University
 National Institute for Standards and Technology

National Science Foundation
 North Carolina Alliance for Competitive Technologies
 North Carolina Biotechnology Center
 North Carolina Division of Coastal Management
 Novopharm Pharmaceuticals
 Science Service, Inc.
 Thailand National Science and Technology Development Agency
 University of California at Davis
 University of Florence, Italy
 University of North Carolina at Chapel Hill
 University of Pisa, Italy
 University of Turin, Italy

Materials Analytical Services, Inc.

Partners:

NCSU Analytical Instrumentation Facility
 NCSU Precision Engineering Center

Materials Research Center

Partners:

Advanced Research Projects Agency, Dept. of the Navy
 Army Research Office
 Battelle Pacific
 National Science Foundation
 NCSU Department of Chemistry
 NCSU Department of Electrical and Computer Engineering
 NCSU Department of Physics
 NCSU Dept. of Materials Science and Engineering
 Office of Naval Research

NASA Mars Mission Research Center

Partners:

CTA, Inc.
 NASA
 National Science Foundation
 NCSU College of Textiles
 NCSU Department of Mathematics
 NCSU Dept. of Mechanical and Aerospace Engineering
 NCSU Dept. of Nuclear Engineering
 U. S. Air Force

National Weather Service Regional Forecast Office

Partners:

National Oceanic and Atmospheric Administration
 NCSU Dept. of Marine, Earth and Atmospheric Sciences

NC-STAR: Storage Rings for Technology and Applied Research*Partners:*

| | |
|----------------------------|-----------------------------|
| IBM | NCSU Dept. of Physics |
| IEP Group, Inc. | North Carolina A&T State |
| Louisiana State University | University |
| MCNC | Titan Corporation |
| NCSU Analytical | TVJ, Inc. |
| Instrumentation Facility | U. S. Department of Defense |
| NCSU Dept. of Chemistry | University of Wisconsin |

NCSU College of Textiles*Partners (Partial List):*

| | |
|---------------------------------------|--------------------------|
| 3M Corporation | Dickson Foundation, Inc. |
| A. B. Carter, Inc. | Digital Equipment Corp. |
| Albany International | Draper |
| Research Co. | E. I. Du Pont de Nemours |
| Alternative Energy Corp. | and Co., Inc. |
| American Cynamic Company | Duke Power Company |
| American Textile Mfg. Institute | Electric Membership |
| Akzo America, Inc. | Cooperatives |
| Allied-Signal Foundation, Inc. | Electric Power Research |
| American Apparel Education | Institute |
| Foundation | FAB Industries |
| American Association of Textile | Fiber Dynamics |
| Chemists and Colorists | FiberTech Group, Inc. |
| American Barmag Corporation | Fiberweb Group, Inc. |
| American Dornier Machinery | Fieldcrest Cannon, Inc. |
| Corporation | First Union |
| American and Efird, Inc. | Flynt Fabrics, Inc. |
| American Truetzschler, Inc. | Ford Motor Company |
| Amoco Fabrics and Fibers Co. | Freudenberg Spunweb |
| Amoco Foundation, Inc. | Gaston County Dyeing |
| Artistic Identification Systems, Inc. | Machine Co. |
| Avondale Mills, Inc. | Greenville Machinery |
| BASF | Corporation |
| Bonas U.S.A., Inc. | Groz-Beckert, USA, Inc. |
| Branch Banking and Trust | Guilford Mills, |
| Burlington Industries | Incorporated |
| Carolina Mills, Incorporated | HDK Industries, Inc. |
| Carolina Power and Light Co. | Haggar Apparel Company |
| Chatham Foundation, Inc. | Harriet and Henderson |
| Ciba-Geigy Corporation | Yarns, Inc |
| Close Foundation, Inc. | Hercules, Inc. |
| Collins & Aikman Corp. | Hoechst-Celanese Corp. |
| Cone Mills Corporation | IBM Corporation |
| Cotton Incorporated | ICBT, Inc. |
| Dan River Mills, Inc. | Jacques Weber |
| Datatex TIS, Inc. | Foundation, Inc. |

| | |
|------------------------------|----------------------------------|
| James River Corporation | Rohm and Haas Company |
| Sara Lee Knit Products | Russell Corporation |
| Kimberly-Clark Corporation | Picanol of America, Inc. |
| Levi Strauss & Company | Sandoz Chemicals Corp. |
| Lineberger Foundation, Inc. | Sandoz Foundation |
| Marine Polymer | Schlaflhorst, Inc. |
| Marshall and Williams Co. | Shuford Mills, Inc. |
| Melco Industries, Inc. | Spectrum Dyed Yarns |
| Microdynamics, Inc. | Springs Industries, Inc. |
| Milliken and Company | Steel Heddle |
| Monarch-Vanguard Supreme | Teijin Seiki |
| Morton Machine Works, Inc. | Textile Clothing Technology |
| Murata of America, Inc. | Corporation [TC] ² |
| National Knitwear Mfg. Assn. | Textile Distributors Assn., Inc. |
| National Science Foundation | Textured Yarn Association of |
| National Spinning Company, | America, Inc. |
| Scholarship | Thies Corporation |
| National Textile Center | Tultex Corporation |
| NationsBank of North | Tuscarora Yarns, Inc. |
| Carolina, N.A. | Unifi, Inc. |
| North Carolina Power Company | U. S. Dept. of Agriculture |
| North Carolina Textile | Vanguard Supreme |
| Foundation, Inc. | Veratec |
| North Carolina Textile | Vintage Yarns, Inc. |
| Manufacturers Assn., Inc. | Wachovia Bank of North |
| Parkdale Mills, Inc. | Carolina, N.A. |
| Phillips | West Point-Pepperell |
| Ramtex, Inc. | Weyerhaeuser Company |
| Reeves Brothers Corporation | Wrangler |
| Rieter Corporation | Zellweger Uster, Inc. |

NOAA/Southeast Consortium for Severe Thunderstorms and Tornadoes

Partners:

| | |
|---------------------------------|-------------------------------------|
| Florida State University | NCSU Dept. of Marine, |
| Georgia Institute of Technology | Earth and Atmospheric Sciences |
| National Weather Service | University of Alabama at Huntsville |

Non-Wovens Cooperative Research Center

Partners:

| | |
|------------------------|------------------------|
| Albany International | Fiber Dynamics |
| Research Company | FiberTech Group, Inc. |
| American Cyanamid Co. | Fiberweb Group, Inc. |
| AMOCO Fabrics and | Freudenberg Spunweb |
| Fibers Company | Gaston County Dyeing |
| Collins and Aikman | Machine Co. |
| Cotton, Inc. | Hercules, Inc. |
| E.I. DuPont de Nemours | Hochst-Celanese Fibers |
| & Co. | Operation |

| | |
|-----------------------------|----------------------------|
| HDK Industries, Inc. | State of North Carolina |
| Kimberly-Clark Corporation | 3M Company |
| National Science Foundation | U. S. Dept. of Agriculture |
| NCSU College of Textiles | Veratec |
| Rohm and Haas Company | Weyerhaeuser |

Power Semiconductor Research Center

Partners:

| | |
|---|--|
| C. P. Clare Corporation | NCSU Dept. of Electrical and Computer Engineering |
| Daimler-Benz AG, Germany | Sanken Electric Co., Ltd., Japan |
| Ford Motor Company | SRC (a consortium of 62 companies) |
| Fuji Electric Company, Ltd., Japan | Shindengen America, Inc. |
| Hitachi Research Laboratories, Japan | Shindengen Electric Mfg. Co., Ltd., Japan |
| Mitsubishi Electric Corp., Japan | Toyoda Automatic Loom Works, |
| Motorola, Inc. | |
| Philips Laboratories | |

Precision Engineering Center

Partners:

| | |
|--|---|
| Aerotech | NCSU Dept. of Mechanical and Aerospace Engineering |
| Eastman Kodak Company | NCSU Dept. of Physics |
| Lawrence Livermore National Laboratory | Office of Naval Research |
| Los Alamos National Laboratory | Rank Taylor Hobson, Ltd. |
| National Science Foundation | Storagetek, Inc. |
| NCSU Dept. of Computer Science | Texas Instruments, Inc. |
| NCSU Dept. of Materials Science and Engineering | 3M Company |

R&D Analysis, Inc.

Partner: Office of Research, Outreach & Extension

Real-Time Diagnostics and Control Laboratory

Partners:

| | |
|-----------------------|--------------------------|
| NCSU Dept. of Physics | Office of Naval Research |
|-----------------------|--------------------------|

Textile Protection and Comfort Center *(See College of Textiles)*

University Research Initiative

Partners:

| | |
|--|--------------------------|
| NCSU Dept. of Electrical and Mechanical Engineering | NCSU Dept. of Physics |
| NCSU Dept. of Materials Science and Engineering | Office of Naval Research |

Wake Vortex Project

Partners:

| |
|--|
| NASA |
| NCSU Dept. of Marine, Earth and Atmospheric Sciences |

APPENDIX II: DEVELOPING A TRANSPORTATION SYSTEM FOR CENTENNIAL CAMPUS

Jim Haynie, Assoc. Professor, Technology Ed., HCSU

In our planning meetings we have frequently spoken of the desirability of extending traditional disciplinary lines and allowing children to learn in a holistic manner. Often, different people in the group have spoken of using “projects” and activities in all subjects. We have a unique opportunity to do this—to integrate art, music, healthful living, and other areas throughout the curriculum instead of the traditional approach of leaving these areas as asides. I envision the integration of the curriculum around large-scale, activity-based, laboratory-based projects which develop and utilize students’ creativity, problem solving skills, higher order learning skills, and research (both library and experiential). The projects should involve work with tools, machines, equipment, materials, computers, simulation software, and other aspects of modern technology to challenge students to think and actively learn. In the construction of such projects, students will also develop skills which may be applied in community service projects, explore a variety of career options, develop a realistic approach to problem solving, learn to work together in a cooperative manner, learn to appreciate each others’ unique abilities, and encounter new areas of interest which may become an avocational interest later in life (education is for life and these children will have a longer period of retirement than any previous generation). The following is one such large-scale project from the area transportation technology.

PICTURE THIS WITH ME —

Topic: Develop a transportation system for the Centennial Campus

Method: Groups of students work in teams and use this topic to integrate learning in as many traditional disciplines as possible. The products which result must include written, orally presented, and tangible items. Some groups will likely develop monorail systems, shuttle bus systems, or more exotic approaches.

Broad Range of Sub Topics Included (and how they correlate to the traditional curriculum):

- *Needs Assessment: Applying statistics (math and technology) to determine needs. Also includes some communication in developing and conducting surveys.*

- *Environmental Impact Study: How will such a large project fit with its environment? (Science and more communications to develop reports and defend positions in mock town meetings, etc.).*
- *Past and current trends of transportation: Historic study of transportation means and their social impacts coupled with a look to the future. If a goal of social studies education is to avoid repeating past mistakes, shouldn't technological forecasting and trend extrapolation be the next step? What a good project to use in centering such an endeavor!*
- *Media can be developed explaining the project and its impacts from different viewpoints and in different formats: Groups of students could prepare TV news reports and videotape them, write newspaper articles, write letters to the editor, videotape citizen on the street reactions, take before and after of the site. The opportunities are limited only by the imaginations of the students and their teachers. (Remember, students will need to learn this new way too!).*
- *How will it work? Scale concepts models or even working models or prototypes must be constructed and tested. This includes both science and technology education. computer simulations could be part of it, but a good bit of it will include "shop type" activities that involve all of the students' senses in their learning. Remember Dewey and "learning through experience?"*
- *Each team should try to sell its ideas to the others and to the public in a community display of some sort. This could include artistic posters and media, skits or music and dance with costuming, videotapes, murals, models, etc. There is also the need to study architectural and aesthetic concerns about the project. How should the system be decorated? Logo design, decor of the stations, landscaping, think broadly about the things we could teach through such a big project.*
- *Physics and mathematics are applied in technology education through consideration of sizes, shapes, aerodynamics, speeds, schedules, weights, structural designs, costs, power consumption, how tight to make the curves, how far to space the beams, limitless opportunities again here to put real world problems and concepts together with those sterile figures and formulas we learned by rote.*
- *Societal impacts such as employment during the project, reduction of individual family resources needed for transportation due*

to the system, new opportunities for interaction with others while riding it, ease of access to campus and community learning resources from the perspectives of students and the community at large, the six impacts: economic, social, political, ethical, environmental, and cultural—think broadly.

- *Development of route maps and instructions for passengers are in the realm of communication. What about foreign language instructions and schedules??*
- *Surveys should be done outside the school in the community. What better way to get the community involved in the school?*
- *Creative problem solving, research of all types, and higher order thinking will be applied with the tools and materials of technology to learn in an integrated manner.*

The learning opportunities with this type of large scale, cooperative, integrated project are limitless. Other topics which might deserve similar treatment: Develop a center similar to Harbor Place (Baltimore) or Waterside (Norfolk) which would front the lake on the campus; A closed traffic campus for NCSU with only perimeter parking and shuttles; A new airport with transportation to local communities; An alternate energy vehicle; An underwater city; A space colony; A paperless school through technology; A bio-engineering factory producing “living” computer chips. Think broadly—the more outlandish may be the better!!!

Modern Technology Education is supposed to help teachers lead their students through studies of this sort—it can serve as THE integrating point of the curriculum. Students cannot, however, simply go to a shop and be turned loose with potentially dangerous equipment. This sort of study requires three main things:

1. *Well equipped technology education laboratories with technology teachers who are technically competent and have the creative spirit to encourage this broad thinking—no birdhouse builders here!*
2. *Students who know how to use the tools and equipment at a minimal level and are taught by academic teachers who encourage active learning and projects.*
3. *Flexibility that allows for overlaps in times and activities supported by an actively engaged community.*

A P P E N D I X III: THE LIVING MACHINE

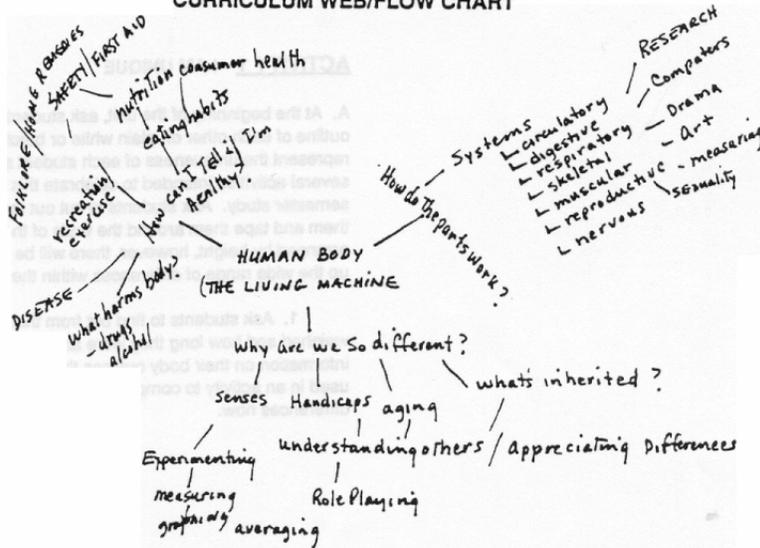
A Semester Interdisciplinary Unit Designed for 6th Grade: A Curriculum Project by Carol G. Lewis to Dr. John Arnold, NCSU

RATIONALE

The Human Body is an all-consuming fascination and topic of thought and discussion with early adolescents. This major unit in the sixth grade science curriculum lends itself to a comprehensive interdisciplinary approach, by reaching out to include in conjunction with science, healthful living, physical education, communications skills, the arts, mathematics, social studies, and library/media and computer skills concepts.

The thoughtful teaching team or self-contained teacher will capitalize on the students' natural interest and curiosity about how they are alike, different, and how all the "stuff" works, making this semester of study about "THE LIVING MACHINE" the most informative and fun, ever.

CURRICULUM WEB/FLOW CHART



INSTRUCTIONAL OBJECTIVES

(MAJOR PROCESS AND CONTENT OBJECTIVES)

The learner will:

- demonstrate a positive attitude toward self as a unique and worthy person, and will become aware that all persons have the need to belong and be accepted by others.
- have an understanding of the structure, function, and care of the human body.
- use the language arts to collect, organize, analyze, evaluate, draw conclusions, and express opinions about information.
- apply mathematical concepts of computation, graphing, and averaging to real life situations.
- participate effectively in groups and demonstrate growth in self-management.
- demonstrate an understanding of computers, their operation and their possible applications to solving relevant problems.

ACTIVITY 1 I AM UNIQUE

A. At the beginning of the unit, ask students to work in pairs and draw an outline of each other on plain white or butcher paper. These outlines will represent the uniqueness of each student and will be a focal point of several activities intended to celebrate this uniqueness during the semester study. Ask students to cut out their outlines, put their names on them and tape them around the walls of the classroom. (They could be arranged by height, however, there will be other activities that will point up the wide range of differences within the class.)

1. Ask students to find out from their parents how much they weighed and how long they were at birth, convert to kg/cm and record the information on their body outlines the next day. This information will be used in an activity to compare the differences of the class at birth with differences now.

2. In pairs, ask students to measure height in cm and weight in kg and enter information into a computer graphing program to produce a classroom graph. If there is reason to believe that some students would be embarrassed by their names being used, use a number instead. The purpose of the activity is to create a graph that points out differences. Graph the "at birth" data to use for comparison.

3. Use AA time or group discussion to point out how this period of life is filled with extreme differences and the importance of being unique.

B. Provide paper and ask students to mark the length of their foot on. Each student's foot length can be cut as a 3" strip. By arranging strips by length and taping on the wall, the class will have constructed another type of graph.

During the study, students will conduct self-assessments related to the different topics of study, including favorite things, creative writings, eating habits, exercise habits, etc. The information will be placed on the body outlines. From these assessments, each student will create his own LIVING MACHINE PROFILE and plan for the future.

ACTIVITY 2 SYSTEMS OF THE BODY

A. As the systems of the body are introduced, assign students to heterogeneous groups and allow them to select a system of interest to explore and present to the class. Provide a short list of key questions to guide students in their research. Plan with the media coordinator so that when they come to the media center in small groups, s/he can provide assistance in locating appropriate resources. Require information from a variety of resources (i.e., current periodicals, audiovisual and print resources.)

B. Provide a list of suggestions for ways to present the information to the class. Encourage creativity and do not overlook creative dramatics, songs, or student-made videos, filmstrips, tapes, etc. Several presentations can be given to senior citizens in homes. The class can vote to decide which ones to perform.

C. Make a timeline for the whole process, building in checks, in order to keep students on task and to keep teachers informed of progress. Use group work time to interact with various groups to offer support, direction, and assistance. Make the computer program, SCIENCE TOOLKIT, by Broderbund, available to student groups so that they can conduct safe

experiments using the computer. Use or introduce to student groups, the School Television Series that would be appropriate for their group work, such as THE INSIDE STORY WITH SLIM GOODBODY.

D. Make the presentations a "big deal." Student rating sheets can evaluate.

E. Other activities:

Some systems are more complex to understand and may not be selected by student groups. Teachers may decide to present certain systems and initiate activities. For example, understanding how the body responds (Nervous System) is a complex concept. Concrete activities can help students understand concepts such as reaction time:

1. Ask students to stand in a circle, holding hands. The first student squeezes the hand of the student next to him or her and the squeeze is passed from student to student as it is felt. Clock the amount of time it takes for the squeeze to go all the way around the circle. Repeat several times and divide the time in seconds by the number of students for an average reaction time. Students are invited to estimate the time it will take beforehand, form hypotheses, test, and use many of the science process skills.

2. Another similar reaction time activity asks students to catch a ruler between the thumb and forefinger. Results can be charted or graphed.

F. As a culminating activity, role play the systems of the body, having students move on a GIANT LIVING MACHINE, drawn on the playground in chalk. Props can be used as students simulate blood flow (red and blue hats or scarves) by walking through the GIANT.

ACTIVITY 3 HOW MY FAMILY AFFECTS ME-WHAT DO WE INHERIT?

A. Ask students to survey family and/or members of the community regarding inherited characteristics. Include such noncontroversial items as eye color, attached or unattached ear lobes, ability to roll tongue, hitchhiker's thumb, longer index or ring finger, right or left-handed, hair on finger mid-digit, and top hand in hand clasp. Use results of the survey in a variety of subactivities.

B. WHAT HAPPENS WHEN SOMETHING GOES WRONG?

If the teacher wishes to examine handicapping conditions, students can be

made more sensitive to the limiting factors and factors that are NOT limited by various handicaps. Blindness and deafness and /or confinement to a wheelchair are often of interest to students. This activity could be introduced with a videotape, a booktalk, or story read by media coordinator.

1. Students can simulate the handicap and try to perform in the school environment for a specified amount of time. Assign students to alternate (take turns) being "blind," "hearing impaired," or confined to a wheelchair and continue the class in a regular fashion, allowing them to experience the limitations. The reactions they have and the reactions of other students to them would make good topics for AA or group discussion.

2. Ask students to write how they felt as they participated in the activity. Put their writing on their body outline.

ACTIVITY 4 WHAT HAPPENS WHEN WE GET OLDER?

If the teacher is interested in sensitizing students to aging:

A. Ask students to smear mud on glasses, plug their ears, wear gloves and put extra weight in their shoes and continue to perform classroom activities, such as reading, writing and moving about.

B. After the designated time, students discuss their feelings and do a creative writing activity.

C. Divide into groups and role-play being old in the grocery store, trying to find a telephone number, etc.

D. Outside class activities:

1. Interview a senior citizen to find out what they do with their time, what they do for recreation.

2. In conjunction with health and folklore, students could interview older family members or other senior citizens to determine old remedies for illnesses they used, or still use to treat illnesses and injuries, such as putting snuff on a bee sting. This activity could be followed up by research activities to determine the reasons some may have worked so well, or inviting in a medical expert to be a guest speaker on the topic. Taping the interviews and transcribing would extend the activity further. Compile the remedies into a book and present to senior citizens who contributed and/or share with seniors visited when performances are done.

ACTIVITY 5 HOW CAN I TELL IF I'M HEALTHY?

- A. Set up a center that provides necessary equipment for students to measure blood pressure and conduct experiments to measure heart rate. Allow students to measure each other at rest, after activity, and length of time it takes to recover to below 80 beats per minute. Engage in activities such as walking, running, sitting and reading, and record rates on individual charts that will be placed on the body outline. Use EASY GRAPH II, a computer program, to create a bar graph showing averages for boys and girls.
- B. Have students read the article about Fast Foods in CONSUMER REPORTS, June, 1988. Ask them to chart everything they eat for 3 days. Use their intake to determine eating habits, caloric intake, etc. Use the computer program produced by MECC to do a nutritional analysis of the food.
- C. Use the computer program, SURVEY TAKER, allowing students to generate questions regarding eating habits. Place the program in the media center and allow students to complete the survey on a random basis. Review and analyze results of the survey in a large group setting. Discuss implications.
- D. Bring food labels from home and analyze contents of various foods within food groups.
- E. Ask students to create posters encouraging good health practices.

ORGANIZATION

This unit will take a full semester. It can be taught in a teaming environment or in a self-contained classroom, as well. Provision has been made for large group, small group and individual activities. The discovery learning opportunities and problem solving activities meet students' developmental needs.

EVALUATION

The activities allow group and individual evaluation. Products that result from activities, such as the posters and writings can be graded by the teacher or jointly by the teacher and student. A content test addressing the concepts tested in the schoolwide testing program would provide the teacher with information regarding progress and mastery levels.

**WCPSS/NC STATE COLLABORATIVE PLANNING COMMITTEE
CENTENNIAL CAMPUS MAGNET MIDDLE SCHOOL (CCMMS)**

1994-95:

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Curriculum & Instruction
NC State University**

**Edwin Gerler
Dean's Office, Ed. & Psy.
NC State University**

**Patricia Marshall
Curriculum & Instruction
NC State University**

**Jo Baker, Co-Chair
Middle School Education
WCPSS**

**David Haase
The Science House
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**William McNeal
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**Stanley Baker
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**Margaret Isenberg
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WCPSS**

**Linda Isley
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WCPSS**

**Alan Reiman
Sub-Committee Co-Chair
Curr. & Instruction, NCSU
Prof. Development, WCPSS**

**David Coley
Martin Middle School
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CENTENNIAL CAMPUS MAGNET MIDDLE SCHOOL**

1994-95 (continued)

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**Larry Watson
Math., Science & Tech. Ed.
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EX OFFICIO MEMBERS:

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Appendix B

Interview Guide for Data Collection

1. Please share with me your background and how you became involved with the planning for Centennial Campus Middle School.
2. Do you remember your actual first involvement with others who were working on this project? If so, could you please describe that initial experience?
3. Do you remember your own thoughts as you left that first meeting or planning session? If so, would you please share them.
4. During your initial involvement, please describe your overall impressions of the proposed project. That is, were you excited, was there enthusiasm among the group members, was there confusion, did the group feel like a team, etc.
5. As you continued to participate in meetings and hold conversations with others regarding this project, how would you describe the evolution of the group? (I am trying to understand if the group became a team and, if so, how. This is also important to understand how a collaborative model was established.)
6. If appropriate: Your name is frequently mentioned in the planning documents. From this I assume you became a leader of the group. How did this occur?
7. If appropriate: There was communication within the school system about the whole concept of such a model middle school being nebulous. Did you find it nebulous in the beginning? Please explain your response.
8. If appropriate: There was also communication with the school system expressing concern about the possibility of collaboration between WCPSS and NCSU. What was your feeling about the possibility of collaboration as you joined in the planning process?
9. As the planning group members began to discuss the notion of a model middle school, what strategies did the group leader or leaders use to help the members focus and begin to develop a single vision?

10. Do you remember specific discussions about developing a shared vision for the school? If so, would you please share them.
11. In summary, how would you describe the process the planning group went through to develop a shared vision? (This assumes the interviewee believes a shared vision was developed.)
12. When the planning for CCMS began, were you familiar with the concept of partnership schools?
13. What was the discussion about partnership schools? Was there discussion about laboratory schools?
14. As the discussion continued, how (why?) was the decision made that CCMS would be a partner with all of the colleges on the NCSU campus and not just the College of Education?
15. Talk about this partnership and the vision that the planning group shared.
16. During discussions of the school, did you or the group discuss how you wanted people to feel when they entered the school building (once inside the building)
17. Some of the materials that document the planning process indicate that WCPSS and NCSU spent some time discussing the notion of collaboration. Please describe the model (structure) that was eventually put into place?
18. From where you sat, was the collaborative model an effective one? (Was it productive? Was it efficient?)
19. Do you recall discussion between the planning group members about the collaborative model that would be in place once the school was open and the partnership up and running? If so, would you please describe that discussion.
20. From the literature, I have gathered that sustaining school-university partnerships is challenging. Do you recall conversation about such? If so, would you please describe it.
21. Do you recall discussion about the fact that neither of the institutions involved (WCPSS and NCSU) could implement this program

- independent of the other? If so, would you please share that discussion?
22. Talk about the decision to locate the school on the campus of NCSU.
 23. In the planning documents there is only mention of the school's partnership with the Centennial Campus? Do you recall the conversation about that component of the partnership? If so, would you please share it?
 23. As the first phase of planning for CCMS came to a close with the approval of the concept document in November 1995, what were your feelings? (Was there a feeling of accomplishment; was there a feeling that something unique had been created; etc)
 24. As the years passed between 1995 and the hiring of the principal in 1999, what role did you play in the continued planning?
 25. Now that the school has been open for two years, are you curious about it and the partnership?

Are you familiar with the program that is in place at CCMS now?

Do you wonder if the school and its partnership with NCSU do indeed exist match that which you and the planning group envisioned?

Appendix C

Consent Form for Interviews

Revised 8/1997
Edited 12/6/2000

**North Carolina State University
Institutional Review Board For The Use of Human Subjects in Research
GUIDELINES FOR PREPARATION OF INFORMED CONSENT FORM**

An **Informed Consent Statement** has two purposes: (1) to provide adequate information to potential research subjects to make an informed choice as to their participation in a study, and (2) to document their decision to participate. In order to make an informed choice, potential subjects must understand the study, how they are involved in the study, what sort of risks it poses to them and who they can contact if a problem arises. Therefore, **the language used to describe these factors must be understandable to all potential subjects.** The informed consent form is to be read and signed by each subject who participates in the study **before** they begin participation in the study. A duplicate copy is to be provided to each subject.

If subjects are **minors** use the following guidelines for obtaining consent:

-< **8 years old** - requires signature of parent(s)/guardian/legal representative

-**9 through 17 years old** - requires signature of both minor and parent/guardian/legal representative

If the subject or legal representative is *unable to read and/or understand the written consent form*, it must be verbally presented in an understandable manner and witnessed (with signature of witness).

Attached find a sample consent form template. In generating a form for a specific project the principal investigator will fill in the underlined areas of the form and replicate the bold areas.

**North Carolina State University
INFORMED CONSENT FORM**

Title of Study Centennial Campus Middle School: A Historical Case Study

Principal Investigator Kenneth A. Branch

Faculty Sponsor (if applicable) Dr. Paul Bitting

You are invited to participate in a research study. The purpose of this study is to document the planning and collaboration process that led to the opening of Centennial Campus Middle School and to describe the program that is currently in place at the school.

INFORMATION

1. List all procedures, preferably in chronological order, which will be employed in the study. Be sure to use lay language.
*Subjects will be identified in advance.
 Subjects will be contacted by telephone to inform them of the study and to gain their permission for participation.
 Interviews will be scheduled at the convenience of the subjects and at their choice of locations.
 Subjects will be sent a copy of the Informed Consent Form in advance.
 Subjects will be sent a copy of the interview questions in advance.
 Interviews will be tape recorded.
 Interviews will last a maximum of two hours.
 A second interview may be conducted if appropriate. If so, the second interview will last a maximum of two hours.
 The tape recordings of the interviews will be transcribed.
 The tapes will be stored in a locked file cabinet in my home.
 The transcripts will be coded to protect the subjects' confidentiality.
 The tapes will be destroyed after the completion of the study and after approval of the dissertation has been obtained.*

2. State the amount of time required of the subject per session and for the total duration of the study.
*Each interview will last a maximum of two hours.
 A second interview may be scheduled with certain subjects based on the need for additional data.
 The second interview, if scheduled, will last a maximum of two hours.*

RISKS

Using lay language describe the foreseeable risks or discomforts, if any, of each of the procedures to be used in the study, and any measures which will be used to minimize the risks.

I do not foresee any risks or discomfort related to gathering data from the subjects for this study.

BENEFITS

List the benefits you anticipate will be achieved from this research, either to the subjects, others, or the body of knowledge.

This study will contribute to the existing body of literature on school-university partnership schools and middle level education.

CONFIDENTIALITY

The information in the study records will be kept strictly confidential. Data will be stored securely and will be made available only to persons conducting the study unless you specifically give permission in writing to do otherwise. No reference will be made in oral or written reports which could link you to the study.

COMPENSATION

For participating in this study you will receive no compensation. Other ways to earn the same amount of credit are not applicable. If you withdraw from the study prior to its completion, you will receive not applicable.

EMERGENCY MEDICAL TREATMENT (if applicable)

Include an explanation as to whether any compensation and/or medical treatments are available, if injury occurs and, if so, what they consist of, or where further information may be obtained.

This is not applicable for this study as no physical risk is involved.

CONTACT

If you have questions at any time about the study or the procedures, you may contact the researcher, Kenneth A. Branch, at 2904 Wycliff Road, Raleigh, NC, or 919-787-3385. If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Matthew Zingraff, Chair of the NCSU IRB for the Use of Human Subjects in Research Committee, Box 7514, NCSU Campus (919/513-1834) or Mr. Matthew Ronning, Assistant Vice Chancellor, Research Administration, Box 7514, NCSU Campus (919/513-2148)

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be returned to you or destroyed.

CONSENT

I have read and understand the above information. I have received a copy of this form. I agree to participate in this study.

Subject's signature _____ Date _____

Investigator's signature _____ Date _____

Appendix D
Data Analysis Matrix

Example

| Source/Category | Middle school curriculum | Middle school organization and structure | Middle school personnel | Responsive schooling for young adolescents | Collaboration | School-university partnerships |
|-------------------|--------------------------|--|-------------------------|--|---------------|--------------------------------|
| Interviewee #1 | | | | | | |
| Interviewee #2 | | | | | | |
| Interviewee #3 | | | | | | |
| WCPSS Document #1 | | | | | | |
| WCPSS Document #2 | | | | | | |
| NCSU Document #1 | | | | | | |
| NCSU Document #2 | | | | | | |

Curriculum Map Format

Sample Curriculum Map

| Month | August | September | October | November | December |
|--------------------------|--------|-----------|---------|----------|----------|
| Theme | | | | | |
| Integration | | | | | |
| Literature | | | | | |
| Field Study/ Speakers | | | | | |
| SCOS | | | | | |

Appendix F

Curriculum Integration Coordinator Job Description

Curriculum Integration Coordinator Job Description

The curriculum integration coordinator will:

- Coordinate the development of instructional activities/strategies for vocational teachers that connect vocational and core course objectives. The Standard Course of Study, LEA objectives and teams of core and vocational teachers will be used to develop these materials. Computers and other technologies including multimedia presentations, will be used when appropriate.
- Coordinate the development of instructional activities/strategies for core teacher that connect core course and vocational objectives. The Standard Course of Study, LEA objectives and teams will be used to develop these materials. Computer technology, including multimedia presentations, will be used when appropriate.
- Collect workplace examples of activities that show the necessity of curriculum integration. Incorporate these activities into guides for teacher use. Verify activities with business/industry.
- Support and promote the integration of curriculum and use of technology in the delivery of instruction to students enrolled in vocational education.
- Provide staff development about curriculum integration.
- Develop matrices showing the connections of academic and vocational content. Promote teacher understanding of connections among curriculum areas.
- Assist with the development and entry of integrated test items into an instructional management system (VoCATS).
- Assisting students in assessing and investigating career options of middle grades.
- Help with the development of level appropriate student career development/education plans:

Middle Grades

- Assist students in assessing and investigating career options.
- Assisting with student attainment of career development objectives based on career development plan.
- Assisting students with use of electronic databases that retrieve career information and data.
- Collaborate with middle school counselors and teachers to provide electronic career information for those students enrolled or waiting to enroll in vocational courses.

High School

- Assist students in assessing and investigating career options.
- Assisting with student attainment of career development objectives based on career development plan
- Assisting students with the use of electronic databases that retrieve career information and data.
- Assisting students in entering resumes and other pertinent information into the Employment Security Commission's Job Bank.
- Assisting students in development and presenting senior projects that combine core academic and vocational content. Where appropriate include technology to support the project.
- Serving as a collaborator with industry-education coordinators to provide electronic career information to students enrolled or wanting to enroll in vocational courses.

**Curriculum Integration Coordinator
Job Description Additions**

- Coordinate the development of instructional activities/strategies for core course teachers that are integrative across the curriculum. The Standard Course of Study will be used to assist in the development of these activities and lessons.
- Coordinate various grade level meetings involving curriculum integration of all subject areas.
- Develop curriculum maps for grade levels, subject areas and individual classes.
- Install curriculum on web-site and develop links for technology based lessons for parents and students.
- Develop partnerships with area businesses to help integrate curriculum, technology and school-to-career initiatives.
- Assist students in understanding and assessing future high school graduation tracks.
- Assist students at-risk of retention in understanding promotion standards, test scores and aid in the development of individual education contracts.

Appendix G

Eighth Grade Curriculum Map
Spring 2003

| Time | Third Quarter |
|---|---|
| Theme/Unifier | "Taking Off: Changing Our World" |
| Essential Question | How does the growth of technology affect community development? |
| NCSU Outreach | Airplane Project _ College of Engineering - Laura Bottomley |
| Guest Speakers | Samual Tso - Navajo Code Talkers WWII - February 4 Even Exchange Dance Company: Flight Dance - February 21 |
| Possible Resources/Field Studies | EDS: Jason Project: January 30- Pelican Team January 31 - Sea Star Team |
| Very Best Place to Start (CLICK TO LINK) | <u>Resources Galore!</u> Media Center Page |
| House Collaborations | Building Airplane with remote control capabilities and an onboard camera. |
| Click to link to the Standard Course of Study Objectives | CLICK TO LINK TO SCOS |

Appendix H

Sixth Grade Curriculum Map
Fall 2002

| Planned Unit Dates: | First Quarter | Second Quarter |
|---------------------------------------|--|--|
| Theme | Reflections of the Past/Visions of the Future | Catapulting Through the Middle Ages |
| Theme Definition | Reflecting on the past of CCMS sixth graders and the beginnings of civilization | Guiding Students toward a sense of the ambiance of the Middle Ages, of the social, cultural, and political forces that affected behavior and motivated change. |
| Integrated Units or Projects | Greek and Roman Expo: "Meet at the Forum" | <ul style="list-style-type: none"> • The Madrigal Dinner • Astronomy Night |
| NCSU Outreach | <ul style="list-style-type: none"> • Ecosystem study of CCMS Campus • Wildlife Education | <ul style="list-style-type: none"> • Astronomy Night • Visit to NCSU Arboretum • Visiting Astro-physicist • Ecosystem Study <ul style="list-style-type: none"> ◦ Wildlife Education and NCSU |
| Link to Media Center Resources | <u>Resources Galore!</u> Media Center Page | <u>Resources Galore!</u> Media Center Page |
| Instructional Literature | <ul style="list-style-type: none"> • Mythology | House Novel: <ul style="list-style-type: none"> • <u>Catherine Called Birdy</u> Optional Team Novels: <ul style="list-style-type: none"> • <u>Adam of the Road</u> • <u>The Midwife's</u> |

| | | |
|-------------------------------|---|--|
| | | <u>Apprentice</u> <ul style="list-style-type: none"> • <u>Matilda Bone</u> • <u>Sorcerer's Apprentice</u> • <u>Ella Enchanted</u> • <u>Door in the Wall</u> |
| Resources | | Jim Argent - <i>Masque of the Red Death</i> |
| Interhouse Activities: | <p>Spanish:</p> <ul style="list-style-type: none"> • writing, vocabulary, sentence structure, basics of conversations, five themes of geography, friendly letters, Latin root words <p>Keyboarding:</p> <ul style="list-style-type: none"> • Computer History, Components of computers, keyboarding, uniform formats, spelling, grammar, bibliographies, computer etiquette and legal issues <p>Music:</p> <ul style="list-style-type: none"> • History of Music, cultural arts day in AA, planet music, music genres, literature/lyrics integration <p>Career Decisions:</p> <ul style="list-style-type: none"> • Historical Careers <p>P.E.</p> <ul style="list-style-type: none"> • Training Regimen, | <p>Spanish:</p> <ul style="list-style-type: none"> • Spanish Fairy Tales • Poetry • Romance Languages <p>Technology:</p> <ul style="list-style-type: none"> • Journaling • Invitations to Madrigal Dinner • Report Writing • Personal and Business Letters • Proofreading <p>Music:</p> <ul style="list-style-type: none"> • Guided Listening • Oral Traditions of Music • Gustav Holst - "The Planets", "Pines of Apian Way" • Beginning of Written Music <p>Career Decisions:</p> <ul style="list-style-type: none"> • Autobiography • Job Interviews • Apprenticeships and Guilds of Middle Ages <p>Health and PE:</p> |

| | | |
|---|---|--|
| | <p>nutrition, fitness circuits, solar system games, fitness logs</p> <p>Dance:</p> <ul style="list-style-type: none"> • "A funny thing happened on the way to the Forum" <p>Art:</p> <ul style="list-style-type: none"> • Mosaics | <ul style="list-style-type: none"> • Fitness and sports • Drugs/Alcohol/Tobacco • Alcohol During the Middle Ages • Persuasive Writing Against Drugs <p>Dance:</p> <ul style="list-style-type: none"> • Patterns and Shapes • Dance for Wedding Feast at Madrigal Dinner • Gregorian Chants <p>Art:</p> <ul style="list-style-type: none"> • Coat of Arms • Gargoyles • Castle Arches |
| Other | To be announced as activities develop. | To be announced as activities develop. |
| Click to link to the Standard Course of Study Objectives | <u>SCOS Objectives</u> | <u>SCOS Objectives</u> |

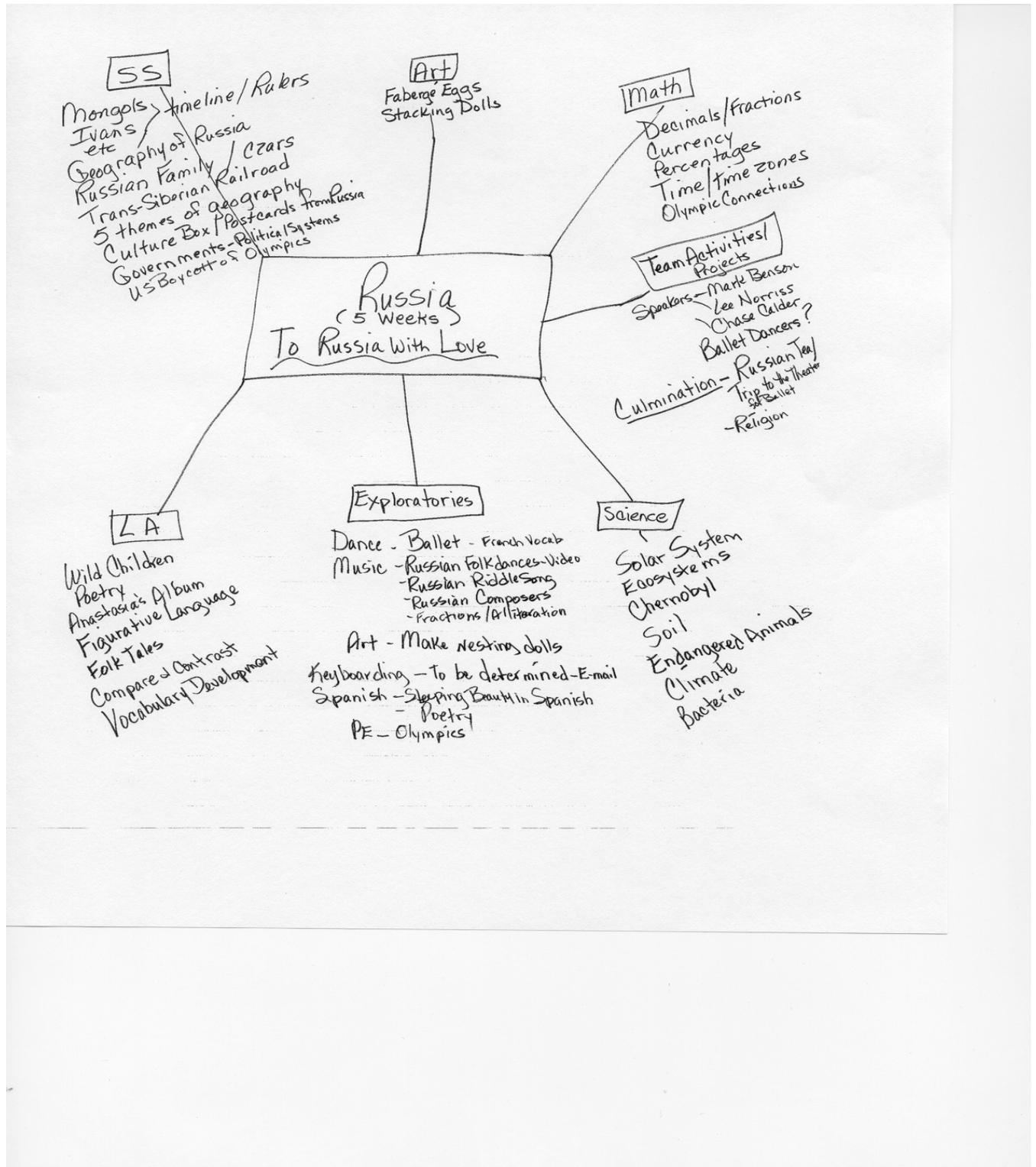
Appendix I

Seventh Grade Curriculum Map
Fall 2002

| Unit Time Frame | July 29-September 13th | Second Quarter |
|---|---|---|
| Unifier | Geography and Climate of Africa and Asia | Culture of Africa and Asia and Human Biology |
| NCSU Outreach | <ul style="list-style-type: none"> • National Weather Service • State Climatologist • NCSU Biologist | <ul style="list-style-type: none"> • Geneticist • State Climatology Office |
| Instructional Literature | <p><u>The Adventures of Tom Sawyer</u> by Tom Sawyer</p> <p><u>Where the Red Fern Grows</u> by Wilson Rawls</p> | <ul style="list-style-type: none"> • Short Stories • Literature Circles |
| Possible Resources | Reporter from News and Observer or WRAL - Interview skills | <p>"What's Up" - From News and Observer</p> <p>"Arts and Entertainment" from News and Observer</p> |
| Very Best Place to Start (CLICK TO LINK) | <p><u>Resources Galore!</u></p> <p>Media Center Page</p> | <p><u>Resources Galore!</u></p> <p>Media Center Page</p> |
| Interhouse Activities | End of Quarter Celebration | <ul style="list-style-type: none"> • The Magic of Africa • Crowning of the Pharaohs • End of Quarter Celebration |
| Other | | IMAX - Jane Goodall |
| Click to link to the Standard Course of Study Objectives | <p><u>CLICK TO LINK TO SCOS</u></p> | <p><u>CLICK TO LINK TO SCOS</u></p> |

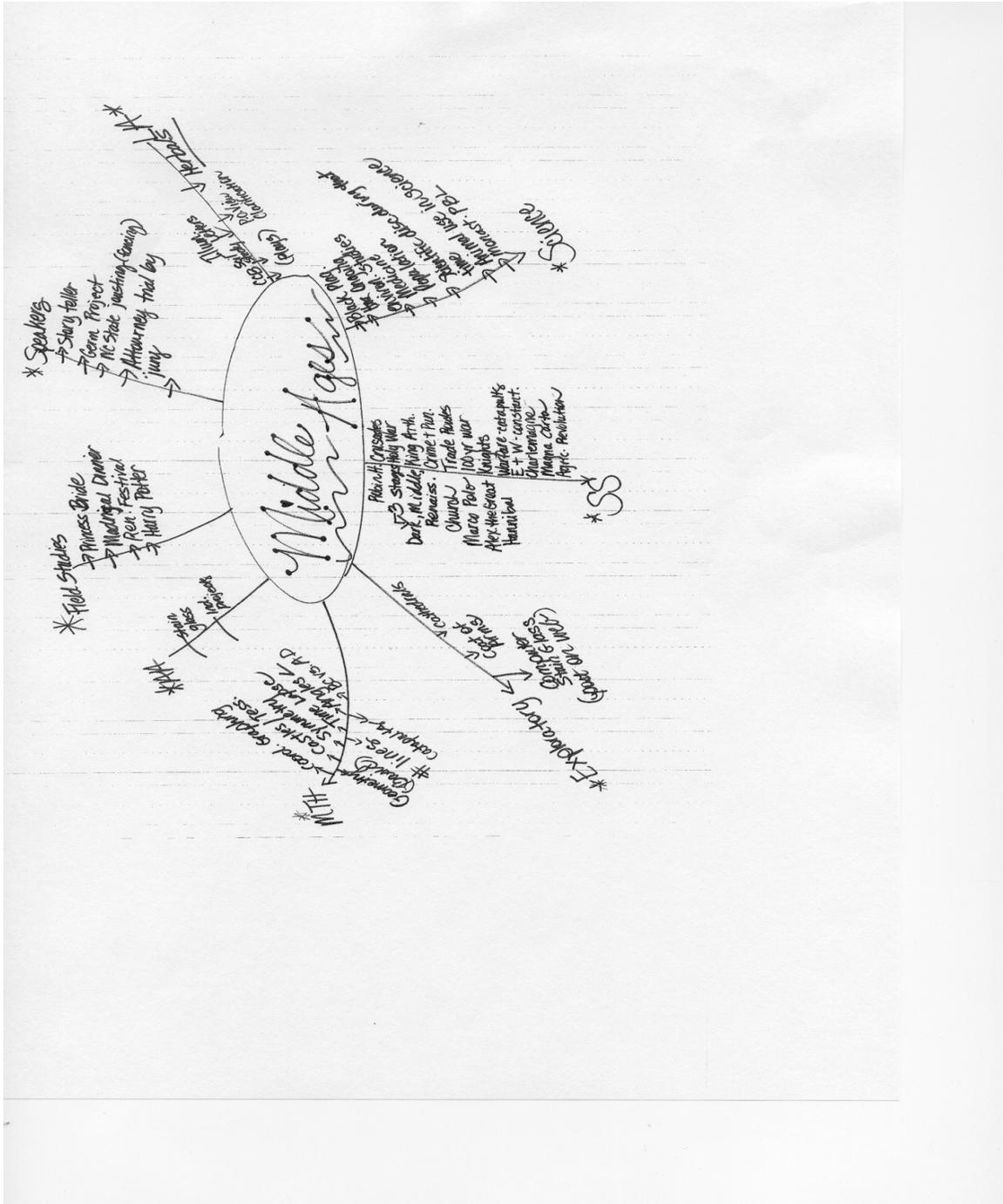
Appendix J

Instructional Planning Web I



Appendix K

Instructional Planning Web II



Appendix L

Outreach Coordinator Roles and Responsibilities

General Duties: Help facilitate the mission of CCMS by identifying and developing programs to link university, corporate, government and community personnel to the school. Be responsible for the day to day coordination and management of these programs.

Assist staff in meeting the goals and objectives of CCMS and thus help enable middle school students the opportunity to reach their fullest potential.

- Specific Duties**
- A. Provide on-site leadership, guidance, and motivation for outreach programs.
Attend regularly scheduled staff team meetings.
Collaborate with staff on identifying opportunities for the involvement of campus, private, and community partners.
Provide awareness of opportunities for staff and students.
 - 4. Coordinate necessary correspondence and communication between school staff and program resources.
 - 5. Collaborate with school personnel in order to integrate services into pertinent activities and opportunities.
 - 6. Communicate regularly with school administration.
 - 7. Plan and implement special events for staff and outreach partners.
 - 8. Assist in seeking grant writing and funding opportunities to help enhance the mission of CCMS.
 - 9. Provide feedback for documentation and evaluation.

 - B. Serve as liaison between CCMS and community partners.
 - 1. Establish communication link between school and community partners.
 - 2. Network with partners to create and maintain a positive image of CCMS.
 - 3. Provide and coordinate opportunities for partners to be involved.

4. Establish written agreements with partners.
 5. Serve as part of the CCMS Program Advisory Council.
 6. Provide feedback for documentation and evaluation.
- B. Serve as liaison between CCMS and private industry partners.
1. Establish communication link between school and private industry partners.
 2. Network with partners to create and maintain a positive image of CCMS.
 3. Provide and coordinate opportunities for partners to be involved.
 4. Establish written agreements with partners.
 5. Provide feedback for documentation and evaluation.
- C. Coordinate outreach programs.
1. Coordinate class presentations and activities.
 2. Assist in the coordination of activities for student interns.
 3. Coordinate off-site trips for students.
- Coordinate and maintain a community volunteer component.
5. Assist in implementation of class activities to enhance integration of curriculum.
 6. Plan and implement school-wide events.
 7. Establish meetings with outreach partners to plan implementation of programs.
- C. Participate in CCMS Parent Teacher Association
1. Attend regularly scheduled meetings of association.
 2. Collaborate with parents on identifying opportunities for the involvement of NCSU, private, and community partners.
 3. Provide awareness of outreach opportunities for parents.
 4. Recruit and train parents to participate in the outreach program.

- D. Perform other duties necessary for the successful operation of CCMS as assigned by administration.

Appendix M

CCMS Daily Schedule
2003-2004

| TIME | SIXTH | SEVENTH | EIGHTH | EX HOUSE | PE |
|--------------------|----------------------------|------------------------------|-----------------------------|------------------------------|------------------------------|
| 7:45-8:00 | A/A | A/A | A/A | A/A | A/A |
| 8:03-8:52 | On-Team | Expl/PE | On-Team | Seventh | Seventh |
| 8:55-9:44 | On-Team | On-Team | On-Team | Common Planning | Common Planning |
| 9:47-10:36 | On-Team | On-Team | Expl/PE | Eighth | Eighth |
| 10:39-11:28 | On-Team | Lunch (10:58-11:28) | Expl/PE | Eighth | Eighth |
| 11:31-12:40 | Lunch (12:10-12:40) | Expl/PE (11:31-12:20) | Lunch (11:31-12:01) | Seventh (11:31-12:20) | Seventh (11:31-12:20) |
| 12:43-1:32 | Expl/PE | On-Team (12:23-2:30) | On-Team (12:04-2:30) | Sixth | Sixth |
| 1:35-2:30 | Expl/PE | On-Team | On-Team | Sixth (1:35-2:24) | Sixth (1:35-2:24) |

Appendix N

CCMS Daily Schedule
2002-2003

| | | |
|--------------------------------|---|--|
| 2:20-2:30 Team Time | 2:20-2:30 Team Time | 2:20-2:30 Team Time |
| Exploratory/Physical Education | 11:28-2:30 Academic Block | 12:04-2:30 Academic Block |
| 12:03-12:33 Lunch | 10:55-11:25 Lunch | 11:31-12:01 Lunch |
| 8:03-12:00 Academic Block | 9:47-10:52 Academic Block | 9:47-11:28 Exploratory/Physical Education |
| 7:45-8:00 Advisor/Advisee | 8:03-9:44 Exploratory/Physical Education | 8:03-9:44 Academic Block |
| SIXTH GRADE | SEVENTH GRADE | EIGHTH GRADE |

Appendix O

Centennial Campus Middle School Teacher Profile

Teachers at CCMS should:

- ❑ Recognize that teaching young adolescents is fundamentally different from teaching either elementary or high school students.
- ❑ Be masters of their subject matter.
- ❑ See themselves as part of a wider resource of services designed to meet the needs of their students.
- ❑ Know how to respond sensitively and effectively to their students.
- ❑ Be able to work as a team with other teachers.
- ❑ Have a willingness to learn about other subject matter and be willing to educate other teachers about their subject matter.
- ❑ Have a holistic view of the teaching and learning processes.
- ❑ Know how to design instruction that responds appropriately to young adolescent developmental needs.
- ❑ Be able to manage and monitor their students' learning.
- ❑ Ensure success experiences for all students and provide support in failure.
- ❑ Be able to engage families in their children's education; be able to work with families of all socioeconomic levels.
- ❑ Want to connect school with community.
- ❑ Understand adolescent development; be able to promote the physical, social, and emotional growth of young adolescents; advocate for the whole adolescent.
- ❑ Be sensitive to cultural differences.
- ❑ Understand principles of guidance for use in an advisory role.
- ❑ Understand and promote the middle school concept.
- ❑ Believe in the authentic assessment of learning.
- ❑ Know how to plan and implement curricular experiences that focus on the learner.
- ❑ Know how to encourage students to take ownership in their learning.
- ❑ Loves to teach this age group.
- ❑ Thrive on the energy and enthusiasm generated from being with young adolescents.
- ❑ Find middle school-teaching rewarding.
- ❑ Believe that teaching middle school students is an important service.
- ❑ Believe they can make a difference in the lives of their students.
- ❑ Be able to design instruction that responds appropriately to young adolescent developmental needs.
- ❑ Advocate for the whole young adolescent.
- ❑ Understand that young adolescents need freedom of movement and interaction with peers.

- ❑ Have positive self-concepts.
- ❑ Display optimism.
- ❑ Show enthusiasm.
- ❑ Exhibit a good sense of humor.
- ❑ Demonstrate flexibility.
- ❑ Be good listeners and communicators.
- ❑ Be able to use a variety of learning activities and materials.
- ❑ Self-evaluate for professional growth.
- ❑ Promote a classroom and school climate based on mutual respect.

Appendix P

List of Teacher Interview Questions

1. Talk about the importance of ensuring success experiences for all students and how you would accomplish such a task.
2. What suggestions would you have for how CCMS can connect to the community?
3. What would you do to engage families in their students' education?
4. What are some of the ways you could encourage parent volunteerism in your classroom?
5. Middle school teachers are called upon to meet a number of demands: responding to the unique needs of their students, involving parents and communities, participating in an advisory program, etc. How do you juggle these responsibilities?
6. Describe instruction that is developmentally appropriate for young adolescents.
(learn by doing, combining several different activities in one instructional period, address different learning styles, practice problem solving, set goals for learning, opportunities for exploration, freedom of movement, interaction with peers, opportunities for success, and support in failure)
7. How does a student-centered classroom look different than a subject-centered classroom?
8. Describe your own personal affective qualities that will help students experience greater academic success.
9. How does a teacher ensure that she/he is teaching character as well as content to her/his students?
10. How do you model flexibility in the classroom?
11. How do you communicate to (demonstrate for) your students that you care about them?
12. How do you build in your classroom a climate of mutual respect and trust?
13. Why do you choose to teach at the middle school level?
14. What is your definition of an effective teaching team?
(willing to work with others, good listeners and communicators, willing to compromise, hard workers, and not in competition with their teammates.)
15. Middle school education is a collaborative effort between teacher and parent. How would you achieve this?
16. How do you ensure that all students have an equal chance of achieving success?
17. How do you communicate to your students that you expect them to be successful learners?
18. How do you promote self-responsibility among your students?

19. How do you meet students' needs for a safe environment in the classroom?
20. Talk about your own experiences using reflection as a self-assessment tool.
21. Tell us about your educational background and teaching experiences (student teacher experiences.) Have you had other work experiences that relate to education?
22. Describe the instructional program you believe is most appropriate for middle school students.
23. Tell us about one lesson/activity/project you taught that you felt was particularly effective.
24. Why is/are your field/fields (discipline, subject area) important for students to study?
25. Define curriculum integration? Is there a difference between curriculum integration and interdisciplinary teaching.
26. What are the advantages of using integration of the curriculum for middle grades students? What are the disadvantages?
27. How do you remain current in your area/areas of concentration?
28. How do you plan or organize your lessons/activities to meet the needs of individual students?
29. What is your experience in differentiation instruction? Talk about some of the strategies you have used? (compacting curriculum, tiered assignments, learning contracts, flexible skills grouping, etc.)
30. Have you had experience using methods of authentic assessment? Please share those experiences. What has worked well. What system of assessment would you like to put into place in your classroom if hired to teach at Centennial Campus?
31. How would you improve the current progress reporting system that we have in place in middle schools in Wake County? (quarterly report cards, mid-quarter progress reports for students who failing)
32. How do you involve parents in their students' education?
33. How would a visitor to your classroom or teaching area know that you have in place a set of rules governing student behavior?
34. Do you believe that students should participate in developing/establishing classroom rules?
35. How do you manage a classroom or teaching area when students are working in groups or on teams?
36. How do you/would you use technology as an instructional tool?
37. What is the role of homework in your classroom?
38. How do you give feedback to students on homework assignments?
39. During the teaching process, what do you do to ensure that your students understand the lesson (skills, concept, etc.)
40. What have you done recently (past year?) to improve your professional skills? What areas of professional development would you like to pursue in the future?

41. Describe yourself as you think your current principal (supervisor, most recent principal) would describe you.
42. What are your strengths as an educator?
43. What recommendations would you make to the board of education about improvements that need to be made in the public schools?
44. What are the most crucial issues facing teachers/educators today?
45. How will you support the students at CCMS in their co-curricular (extracurricular) activities?
46. How have you contributed toward the improvement of the total school program in your current position?
47. What is the teacher's responsibility for total school improvement?
48. If your teaching team's/grade level's work together came to a standstill, what would you do to help the group reach its goal?
49. What is your role as a teacher in the process of site-based management?
50. Is there anything else about yourself that you would like to share before we end this interview?
51. If you are selected for a position at CCMS, will you be able to begin work on July 17 (July 10?)

Appendix Q

CCMS Teacher Interview Format

Teacher Interview and Evaluation Form

Applicant Name _____ Interview Date _____

SS# _____

| | | |
|---|---|--|
| Introductory Questions | Tell us about your educational background and teaching experiences. (This may include student teaching experiences.) | |
| | Why do you choose to teach at the middle school level? | |
| Knowledge of Content and Instructional Practices | Describe the instructional program you would put into place in your classroom. | |
| | Explain why your instructional program would be appropriate for young adolescents. | |
| | Tell us about a lesson you taught or activity you led that was particularly effective. Why was the lesson/activity so successful? | |

| | | |
|--|---|--|
| | <p>We frequently use an instructional strategy called integration of curriculum. Are you familiar with this strategy? If so, please explain it or your experience with using it.</p> | |
| <p><i>This may not apply to 8th grade for the 2002-2003 school year.</i></p> | <p><i>CCMS will have two-teacher teams at each grade level. Do you feel comfortable and competent to teach in two different subject areas?</i></p> <p><i>Talk about the depth of preparation you have received either through training or experience in your subject areas.</i></p> | |
| | <p>During most of the school day, our students are grouped heterogeneously. Talk about the specific strategies/techniques you would use to differentiate instruction and ensure success experiences for students at all levels.</p> | |
| <p><i>(These two questions may be combined into one question.)</i></p> | <p>Tell us about some of the assessment techniques you have used in the classroom.</p> <p>Describe the assessment system you would like to put into place on your team at CCMS. Why would it be appropriate for young adolescents?</p> | |
| <p><i>(These two questions may be combined into one question.)</i></p> | <p>What technology have you used as an instructional tool?</p> <p>Talk about other ways in which you would like to see technology integrated into the instructional program in your classroom or at CCMS.</p> | |

| | | |
|---|--|--|
| Teamwork and Collaboration | What is your definition of an effective teaching team? (How should it be organized? What is the purpose?) | |
| | How would you involve parents in the education of their children? | |
| | Describe the ideal relationship between CCMS to N. C. State University? That is, a relationship that would benefit our students, staff, and NCSU. What could be a benefit to other middle school students in Wake County? | |
| Knowledge of Classroom Management and Discipline | Talk about the classroom management strategies you use. | |

| | | |
|--|--|--|
| | How do the strategies change as students move from whole group instruction to group work to individual work? | |
| Interest in Professional Growth | What have you done recently (past year) to strengthen your professional skills? (Staff development, conferences, etc.) | |
| | What areas of professional development would you like pursue in the future? | |
| Summary | Overall, what contributions would you be able to make to Centennial Campus Middle School? | |

| | | |
|--|---|--|
| | <p>If you are selected for a position at CCMS, will you be able to begin the week of July 15?</p> | |
| | <p>Is there anything else you would like to share before we end this interview or do you have any questions for us?</p> | |

Strongly recommend

Recommend

Do not recommend

Comments

Signature of Interviewer _____

Appendix R

CCMS House Leader Roles and Responsibilities

Leadership is needed at the house or grade level to ensure that the many decisions are made properly and reported to the principal or his designee. The house leader is a member of a teaching team who serves as an instructional leader as well as the coordinator of the house's program. The responsibilities are organized into four categories:

1. House Relations
 - Encourages and supports high morale among all house members and their interaction with students, staff, colleagues, parents and the community.
 - Leads house members in decision-making and consensus-building.
 - Facilitates communication and collaboration among all house members.
 - Recognizes and encourages professional growth and initiative on the part of house members.
 - Offers suggestions and takes the lead in team-building activities for house members.
 - Assists each team in the development of team identity through the use of logs, themes, team colors, etc.

2. Organizational Relationships
 - Functions as a liaison between the house and the administration through representation at meetings with the principal or his designee.
 - Serves as liaison between the house and other houses, teachers, and staff members.
 - Informs appropriate special programs and exploratory teachers of house activities affecting their students, such as field trips, special projects. etc.
 - Identifies and encourages the use of central office staff.
 - Assists the principal or his designee with ongoing and cumulative assessment of the functioning of the house.

Instructional Coordination and Development

- Helps the house members understand and implement the CCMS mission and the middle school philosophy and program.
- Serves as a resource for integrating the curriculum within the house:
 - Assists house members as they share activities which occur in core and exploratory classes.
 - Assists in instructional planning as appropriate.

- Communicates regularly with curriculum area contacts.
- Facilitates processes and procedures which monitor the success of each student in the house. Assists in planning appropriate interventions.
- Facilitates the development of academic teaming strategies which address students' needs to ensure success.
- Serves as a resource for house members who encounter classroom problems, such as pedagogical limitations, classroom management situations, etc.
- Facilitates the advisory program for the house. Ensures consistency across the house and ensures that grade-level house plans are being followed.
- Understands and models the use of quality tools in the classroom.
- Works closely with the counselor to coordinate house-level guidance activities.
- Assists in the process of continuous improvement.

Management Activities

- Helps house members see opportunities for flexible scheduling and flexible grouping to accommodate the integration of curriculum and students' individual learning styles.
- Assists in initiating and coordinating house-wide special events such as the participation of NCSU and private partners.
- Assigns responsibilities to house members such as keeping minutes at house meetings, coordinating group meetings, etc.
- Prepares house budget for the purchase of instructional materials and supplies.
- Assists in the orientation and provides support for new teachers to the house and to the school. This may include a tour of the facility, introduction to staff members, review of CCMS policies and procedures.
- Schedules and conducts house meetings:
 - Determines protocol for conducting meetings.
 - Prepares agenda for meetings in advance.
 - Involves all house members in discussions.
 - Assures the use of consensus in decision-making.
 - Maintains house notebook for purposes of documentation.
 - Uses quality tools in conducting the meetings.
- Assists in interviewing and selecting new house personnel
- Serves as resource for substitute teachers in the house.
- Directs the development and implementation of house policies such as house rules and expectations for students, orientation for students, etc.
- Follows through on designated house duties such as bulletin boards, house newsletters, etc.

Appendix S

Centennial Campus Middle School

Curriculum Area Contact Roles and Responsibilities

The CCMS Curriculum Area Contact is responsible for communicating and managing the implementation of curriculum within a single discipline. He or she is also responsible for understanding how the curriculum relates to other curricula, which facilitates its integration. The responsibilities are organized into four categories:

1. Curriculum Area Relations
 - Serves as spokesperson for the teachers who deliver the respective curriculum.
 - Maintains open communication with the administration, other curriculum area contacts, teachers who deliver the curriculum, house leaders, and central office staff.
2. Organizational Relationships
 - Functions as a liaison between the curriculum area and administration through representation at meetings with the principal or his designee.
 - Assists the principal or his designee with ongoing and cumulative program evaluation.
 - Serves as liaison between CCMS and the central office staff for the respective curriculum area.
3. Instructional Coordination and Development
 - Communicates to curriculum area teachers the appropriate grade-level curriculum and monitors its implementation.
 - Coordinates staff participation in curriculum study, development, and revision.
 - Participates in in-service activities related to his or her duties such as curriculum development, textbook orientation, materials identification, etc.
 - Coordinates or designates curriculum area teachers to coordinate special activities such as spelling bees, quiz bowls, geography bees, etc.
 - Serves as a resource for curriculum area teachers who encounter difficulty in the implementation of the curriculum.
 - Communicates staff development opportunities to curriculum area teachers and encourages their participation.
 - Assists teachers in classroom organization.

4. Management Activities

- Orients new staff member to curriculum area policies including the procurement of curriculum supplies and materials, etc.
- Conducts regular curriculum meetings:
- Determines protocol for conducting meetings.
- Prepares agenda for meetings in advance.
- Involves all curriculum area teachers in discussions.
- Assures the use of consensus in decision-making.
- Maintains curriculum area notebook for purposes of documentation.
- Uses quality tools in conducting the meetings.
- Receives all communication relating to his or her area and disseminates information to department members.
- Coordinates budget input, planning, and administration.
- Coordinates the selection, procurement, distribution, use, and assessment of supplies, textbooks, equipment, etc.

Appendix T

CCMS Program Guide

EXPLORATORY Courses

Exploratory opportunities for students include electives in art, music, dance, Spanish, family and consumer science, technology education, business education and computer skills. The following is a description of choices at CCMS:

Keyboarding/Computer Literacy (Grades 6, 7, 8)

This course offers general keyboarding instruction that is essential in our technological society. Students develop basic skills in touch-typing and learn proper use and care of equipment and materials. General computer literacy includes terminology and computer usage. Word processing skills are introduced.

Business Computer Technology I (Grades 7 and 8)

This course is designed to provide instruction in computer hardware concepts, history, and software applications. Opportunities are provided for reinforcing keyboarding skills and for learning word processing, database, spreadsheet, graphic, and telecommunication applications. Language arts and basic mathematics concepts are reinforced in this course. It is recommended that all students take this course during middle school to be better prepared for the computer skills test that is given in the 8th grade.

Business Computer Technology II (Grades 7 and 8)

In this course, skills learned in Business Computer Technology I are reinforced and expanded. This is a project-oriented class with emphasis on desktop publishing, telecommunication, and the use of integrated software. (Prerequisite: Business Computer Technology I.)

Exploring Technology I (Grades 7 and 8)

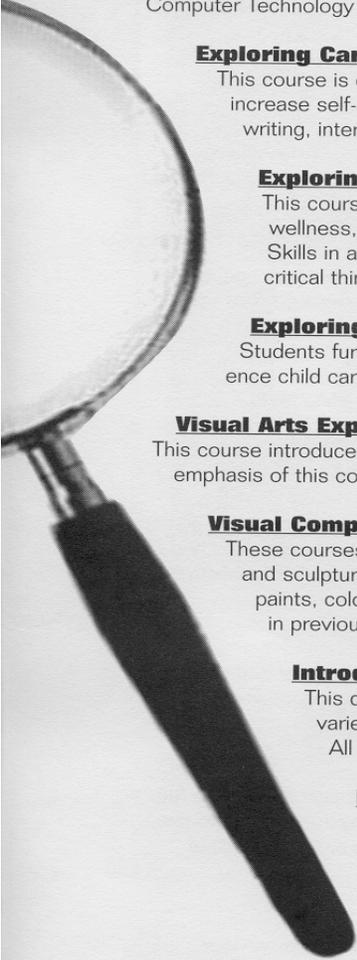
This course provides students with an opportunity to develop basic technological literacy through the application of principles, processes, and skills. The integration and application of language, math, science, social studies, and the arts allows students to build on academic concepts and apply those concepts to a variety of projects that interest and challenge the young adolescent. The course of study concentrates on construction, transportation, problem solving, and communication.

Exploring Technology II (Grades 7 and 8)

This course builds on the skills taught in Exploring Technology I. This course of study concentrates on problem-solving, web design, animation, and video production. (Prerequisite: Exploring Technology I.)

Photography (Grades 7 and 8)

This course concentrates on hands-on photography and graphic design skills used to produce the school yearbook. (Teacher recommendations and completed application required)

**Business and Marketing (Grade 8)**

This course is designed to explore the nature of business in an international economy and to study related careers in fields such as financial services, fashion services, fashion merchandising, information systems, marketing, public relations, and travel and tourism. (Prerequisite: Keyboarding/Computer Literacy or Business Computer Technology I.)

Exploring Career Decisions

This course is designed to provide an orientation to the world of work. Activities enable students to increase self-awareness and make wise educational decisions. The course also addresses resume writing, interview skills, and presentation skills while evaluating personality and character strengths.

Exploring Life Skills I (Grades 7 and 8)

This course explores life management skills. Topics include resource management, nutrition and wellness, personal and social responsibility, fashion and appearance, and career development. Skills in applying basic academic skills, problem solving, decision-making, and creative and critical thinking are reinforced in this course.

Exploring Life Skills II (Grade 8)

Students further explore areas introduced in Exploring Life Skills I. Students will study and experience child care, sewing, food labs, and many other cooperative and independent learning projects.

Visual Arts Exploratory (Grade 6)

This course introduces students to the elements of art through painting, printing, pottery, and sculpture. The emphasis of this course is on integration with core subjects.

Visual Composition 7/Visual Composition 8 (Grades 7 and 8)

These courses are an in-depth study of the elements and principles of art. Drawing, painting, collage, and sculpture are among the techniques used in completing artwork with oil, pastels, markers, paints, colored paper, and other media. Visual Composition 8 builds upon techniques introduced in previous art classes.

Introduction to Dance (Grade 6)

This dance course introduces creative movement, improvisation, and choreography through a variety of dance techniques. The course also builds an appreciation for dance as an art form. All dancers will be involved in formal and informal performances.

Modern Dance I (Grades 7)

In this course, students explore basic improvisation and composition as it relates to modern dance. Students learn skills of the pioneers of modern dance and explore cultures related to their academic curriculum. All dancers are involved in formal and informal performances.

Modern Dance II (Grades 7)

This technique course offers a more intensive study of the skills introduced in Modern Dance I. Students explore basic improvisation and composition as it relates to modern dance. All dancers are involved in formal and informal performances. (Prerequisite: Modern Dance I or permission of instructor.)

Modern Dance III Grade 8)

The students in this class hone their technical skills through intensive movement studies. Composition and choreography are emphasized along with performance skills. Dancers focus primarily on Graham, Cunningham, and Limon techniques. All dancers are involved in formal and informal performances. (Prerequisite: Modern Dance II or permission of instructor.)

Music Exploratory (Grade 6)

This nine-week course introduces students to the elements of music through singing, playing instruments, composition, technology, and movement. Students study basic theory concepts in order to read, notate, and perform a variety of musical styles, from the Middle Ages to today, spanning a number of cultures.

Chorus 7 (Grade 7)

This course is designed for students with or without formal choral experience. Vocal techniques and music reading are emphasized. Some after school rehearsals and evening performances are required. This is a semester course, but students have the option of participating all year.

Chorus 8 (Grade 8)

Eighth grade chorus is a year-long course. It is designed as a continuation of seventh grade chorus. Other students may join with approval of the director. Emphasis is on vocal technique and music reading. The repertoire increases in difficulty. Evening performances are required.

Beginning Spanish (Grades 6 and 7)

Beginning Spanish is an introduction to Spanish language and culture. Major topics include greetings, colors, numbers, vocabulary, interrogatives, family, holidays, art, and clothing. Students also write sentences and questions and conjugate verbs. Students who complete this course successfully may take Intermediate Spanish.

Intermediate Spanish (Grades 7 and 8)

This course builds on the study of Spanish language and culture. Major topics include present and past tense of verbs, direct object pronouns, two-verb phrases, adverbs, present progressive tense, prepositions, foods, and geography. (Prerequisite: Beginning Spanish.)

Advanced Spanish (Grade 8)

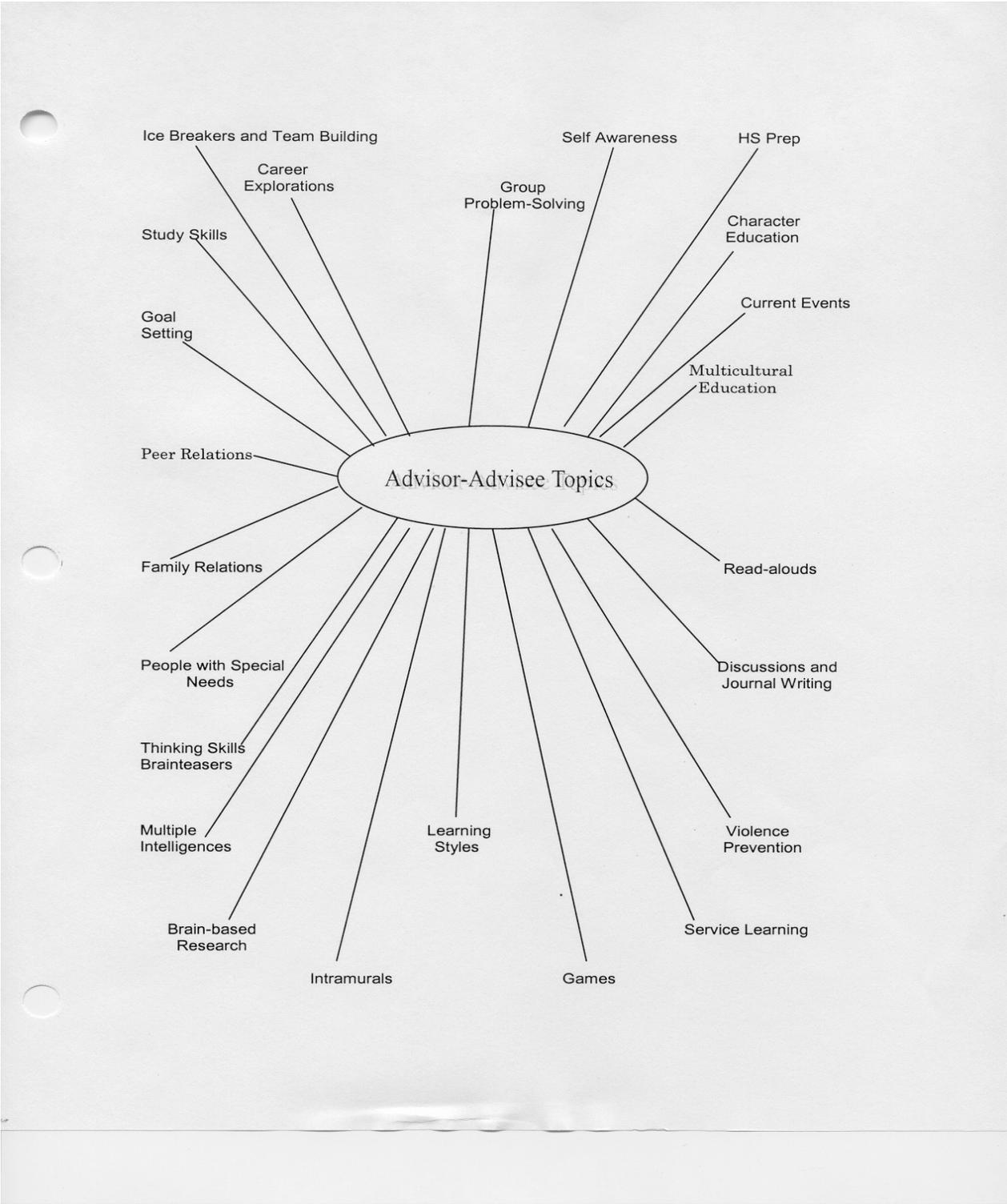
This year-long course offers further exploration of the Spanish language and culture. Topics include the future verb tense and imperfect verb tense as well as art and literature. Students who successfully complete this course may qualify to take Spanish II at the high school level. (Prerequisite: Beginning and Intermediate Spanish.)

Curriculum Assistance (C.A.)

Curriculum Assistance is a program option designed for students receiving special education services. Typically, students who enroll in CA spend the majority of their day in the general education classroom. The goal of CA is to provide the support necessary for students to be successful in general education. The three main components of curriculum assistance are tutorial instruction, remedial instruction, and study skills instruction. Students who enroll in CA must have a current individualized education plan (IEP) in effect.

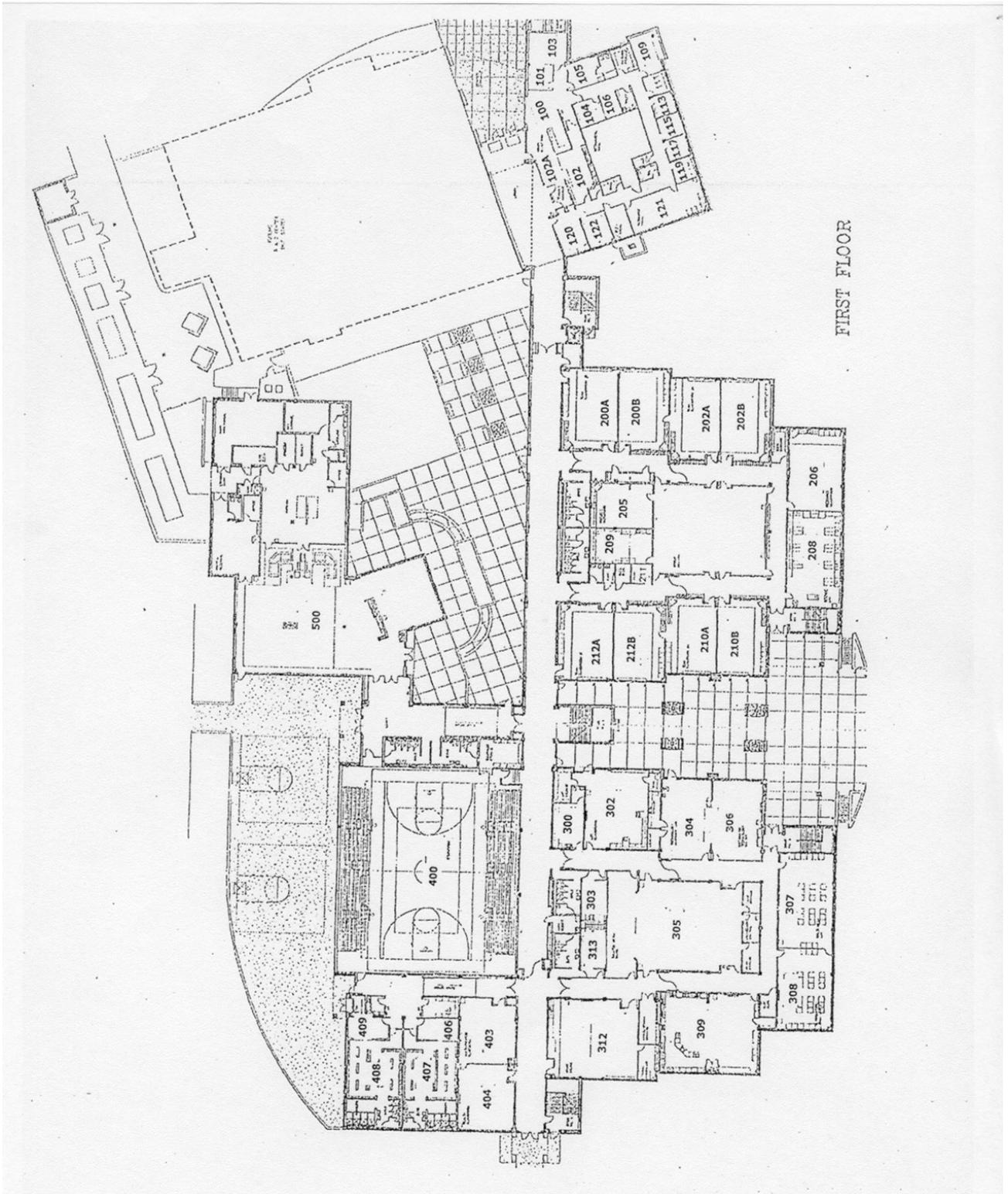
Appendix U

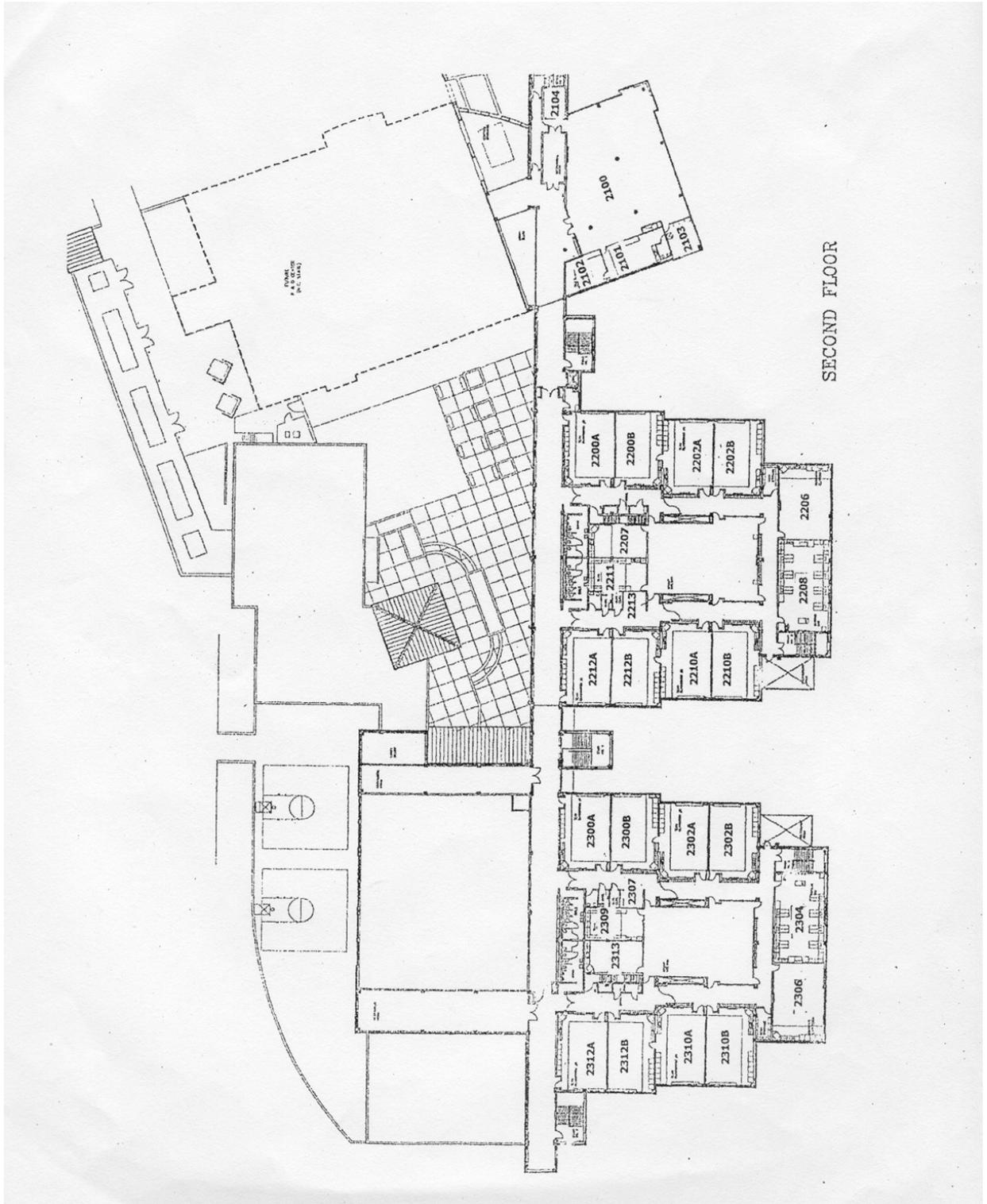
Advisory Program Planning Web



Appendix V

Map of CCMS Building





Appendix W

Outreach Activities Summary 2002-2003

1. CCMS received a grant for \$28,000 to fund an after school transitional program. The NC Child Development Office awarded the grant. CCMS is now a certified site for middle school day care. We are the only school in Wake County with this certification.
2. An eighth grade teacher was funded to participate in a GIS workshop held at Centennial Campus Middle School by the NCSU Science House for teachers in North Carolina.
3. The CCMS principal, outreach coordinator, and the NCSU Triangle East Partners in Education Coordinator, presented about the partnership at the National Middle School Conference in Portland, Oregon.
4. Two seventh grade teachers attended a training called *Unlocking the Code When Considering Grammar and Sentence Structure Within the Writing Process*.
5. A sixth grade teacher collaborated with College of Education faculty member on a writing project for CCMS students and NCSU students.
6. All sixth grade teachers worked collaboratively with an NCSU faculty member to organize a writing project in conjunction with our nature trail development.
7. CCMS hosted three student teachers during the spring semester.
8. A number of university students observed in classes during the year representing various educational classes at the university.
9. NC Teaching Fellows were hosted on our campus.
10. Staff development for curriculum mapping, differentiation, and technology took place throughout the school year.
11. An NCSU faculty member conducted a research project with eighth grade in the area of geometry.
12. Two NCSU faculty members and an NCSU student are presently working with the CCMS Outreach Coordinator, to design a staff development project around adolescent development. The CCMS Student Leadership Council will be taking part in this endeavor.
13. Staff development took place in the fall, which certified CCMS as a Wild Education Site.
14. The College of Engineering worked with eighth graders on a physics project in which students designed rides in an amusement park.
15. Sixth graders visited the arboretum as part of their instruction in soil science and biomes.

16. Seventh graders partnered with the College of Veterinary Medicine and assisted professors as they cared for the wildlife at the Museum of Science.
17. Four eighth grade students became interns for the NC State Climate Office on Centennial Campus.
18. Seventh grade students represented CCMS at a Culture Events Day on the campus of NCSU. Students developed a website based on their experience.
19. A number of seventh grade students assisted an NCSU physical education instructor in two fitness classes. This coincided with the student's study of body systems and physical fitness.
20. Professors and graduate students from the sociology department at NCSU continued observations related to gender differences on our campus.
21. A faculty member from the College of Physical and Mathematical Sciences taught a college-level astronomy class to CCMS students after school on Monday and Wednesday during second semester.
22. Colleges and organizations on campus hosted over 100 CCMS students for job shadowing during the year.
23. ENCORE, a program sponsored through NCSU's Lifelong Education program, had members partnering with the CCMS life skills teacher and her students to conduct oral history interviews.
24. Faculty members from the NCSU College of Humanities and Social Sciences presented to seventh and eighth grade students on subjects that enhanced learning in the classroom.
25. A number of tutor/mentors assisted in our Accelerated Learning Program to help students needing assistance in reading and/or math.
26. Park Scholar students from NCSU continued to work with a group of eighth grade students in a book club.
27. A presenter from the USDA on Centennial Campus addressed issues with refugee camps as seventh grade worked on a Problem-based Learning unit.
28. The liaison from the NCSU College of Natural Resources, arranged for all eighth grade students to visit the College of Natural Resources for a presentation on GIS.

Additional Planning for 2003-2004

1. Continued partnership with the State Climate Office for eighth grade interns.
2. Possible eighth grade interns with the College of Natural Resources for GIS training and implementation.

3. CCMS seventh grade students and staff and the CCMS art teacher collaborate with the NCSU Gallery of Art.
4. Further collaboration with eighth grade, Wildlife Commission, the Centennial Campus Development Office, and all colleges in the development of an environmental learning outdoor center for students.
5. Partnership with the College of Education faculty to incorporate the teaching of adolescent development theories through Advisory/Advisee groups.
6. Partnership with University Scholars for an after school tutorial program.
7. Work-study students and volunteer students tutoring on campus
8. NCSU student volunteers for the Science Olympiad.
9. Organization of a book club for female students by NCSU Park Scholars.

Appendix X

CCMS/NCSU Liaison Roles and Responsibilities

NCSU/CCMS Partnership Outreach Liaisons Role Description

The North Carolina State University liaisons to Centennial Campus Middle School serve as a committee established to assist the Outreach Coordinator. Liaisons represent the 11 colleges as well as organizations and departments on the campus of North Carolina State University. The liaisons provide a necessary link in helping to facilitate the partnership between a major university and a public school.

Established Role of Liaison:

- Serve as the liaison at partnership meetings or send a representative.
- Create a system of communication for notification of partnering opportunities with the college or organization.
- Encourage and assist in partnership opportunities with CCMS.
- Be responsible for communicating procedures for research opportunities, facility use, service learning, student observations and projects, and other types of involvement opportunities by the university.
- Assist the outreach coordinator from CCMS in identification of resource opportunities.
- Serve as a link in providing necessary information to the outreach coordinator at CCMS.
- Provide updated information to outreach coordinator to provide to CCMS staff when necessary.

Established Role of CCMS:

- Communicate with liaison or designee to inform them of opportunities for partnering with Centennial Campus Middle School.
- Encourage and facilitate cooperation between Centennial Campus Middle School teachers and staff and university volunteers, students, and staff.
- Provide a list of partnering opportunities related to research and grant-funded projects.
- Provide updated information and follow-up on various activities to the liaisons.
- Provide letters of recognition to colleges and organizations in appreciation to staff members and volunteers completing service on the campus of the middle school.
- Serve as a link in providing necessary information to the liaisons in helping to facilitate projects and activities.