MATHEMATICS EDUCATION IN RURAL GEORGIA: THE CROSSROAD OF SOCIAL, POLITICAL AND ECONOMIC FACTORS

by

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(Under the Direction of Dr. Leslie P. Steffe)

ABSTRACT

The purpose of this study was to explore the ways in which social, political, and economic factors impact the teaching and learning of mathematics in a small rural school in Georgia. In particular, this research focused on a charter school that seeks to educate approximately 275 pre-K through 12th grade students and is the only public school in the county.

Using qualitative ethnographic methodology, the study was intended to give voice to the residents of the county with an emphasis on those who are most affected by the school: students, parents, teachers, and administrators. Additionally, county officials, employers, and other members of the community shared their thoughts about the school and the ways in which students are being prepared for the future. To some extent, this study was constructed within a critical framework to examine how a small rural school operates within the bounds established by state and federal policymakers.

The data collected and analyzed in the study suggest that small rural communities can establish effective and, by most definitions, successful schools. In turn,

these schools can provide students with rich and varied academic experiences, including mathematical experiences. More importantly, the data reveal ways in which the mathematics programs of even the smallest schools can be enhanced, but only when faculty, staff, and policymakers work collaboratively in that effort.

INDEX WORDS: Rural, Mathematics, African American students, Black students Critical Ethnographic Theory, Qualitative Ethnographic Research, Civil Rights, Mathematics Curriculum

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A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2006

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August 2006

DEDICATION

This dissertation is dedicated to my daughters — Carrie, Chrissy, and Katherine.

ACKNOWLEDGEMENTS

It is unlikely that I will remember all of the people who have made this work possible, and to those whose names are omitted, I extend my most sincere apologies. That said, the following is a partial list:

Larry, whose academic experiences in a rural Georgia school system were the original catalyst for my critical ethnographic perspective, and whose patience has been without bounds.

My daughters — Carrie, Chrissy, and Katherine — whose experiences in a rural Georgia school system enabled them to become successful adults, earning such honors and distinctions as Fulbright Fellow, Phi Beta Kappa member, ACC All-Conference Selection, and Academic All-American, thus disproving claims that rural schools and communities have a "culture of failure." They are my greatest joy.

My mother, Margaret Toomer Hall, a true life-long learner, who instilled in me a love of learning and whose agile mind belies her age.

Dr. Leslie Steffe, my major professor, who forced me often to explain my reasoning, which he freely admits is different from his.

The members of my committee — Dr. Leslie Steffe, Dr. John Olive, Dr. Brad Findell, and Dr. Ed Azoff — each of whom brought unique interests and talents to the process, providing me with rich and truly priceless advice and encouragement as they, individually and as a group, challenged me to do more and do better while allowing me to do what I believed needed to be done.

Samuel Obara and Mary Bruce, whose feedback and support were vitally important and without whom I may not have survived.

Dr. David Stinson, whose passion for the un-privileged is contagious.

Serkan Hekimoglu, whose sage advice kept me on course.

Dr. Jim Wilson, for everything he does for all of the doctoral students.

Dr. Pat Wilson, whose PRIME project provided contact with schools and mathematics teachers and allowed me to remain grounded throughout my doctoral studies.

My colleagues at *The Mathematics Educator* and PRIME, all of whom provided insights and perspectives that enriched this academic experience.

Salli Park, may she rest in peace.

My dissertation research was supported in part by ACCLAIM (The Appalachian Collaborative Center for Learning, Assessment, and Instruction in Mathematics). My doctoral studies were partially supported with a graduate assistantship provided by the National Science Foundation under Grant No. 0227586. Any opinions, findings, conclusions, or recommendations expressed in this material are those of the author and do not necessarily reflect the views of ACCLAIM or the National Science Foundation.

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Chapter 1 — Rationale for the Study

Problems of Perception

I grew up in Atlanta, but I have spent most of my adult life in a succession of increasingly rural communities in Georgia and am quite familiar, and comfortable, with Southern rural culture. I have experienced the rural social, political, and economic environment as a parent and as an educator. My impressions, while by no means unique, have been constructed from the perspective of a transplanted city person who has parented in both the city and the suburbs and whose classroom experiences included teaching mathematics in a large metro Atlanta high school before teaching at a small high school in a rural north Georgia mountain community. Each of these environments provides a unique and interesting context in which to teach and learn mathematics; but without question, I found the rural experience to be the richest and most rewarding.

My journey from city to country involved moving a little farther out every few years, but I was unable to really escape from the city until the beginning of my oldest daughter's freshman year of high school. At that time, I moved my three daughters to Jasper, Georgia, a sleepy little town about twenty-five miles from the southern end of the Appalachian Trail. Jasper is the county seat of Pickens County, which had just 15,000 fulltime residents when we lived there. The high school, which served the entire county, had about 700 students. The community had the typical closed southern

small town social rules — unless a person had been born there, (s)he would always be an outsider, and at the time, the early 1990s, there were not many outsiders who were fulltime residents of Pickens County. Even so, we felt right at home in a community that was focused on family and tradition.

Many of the county residents were more or less impoverished, but it was generally hard to tell who was rich and who was poor and who was just comfortable because nobody put much store in showing off their worldly possessions. Poor in the country is not exactly the same thing as poor in the city. In many rural locales, rich and poor, black and white often live side by side, and virtually all children have acquaintances who are not in their socio-economic class. Many rural poor actually own a small piece of land, or have access to one through a family member. Clusters of kinfolk often live along the same road or within walking distance of each other, providing a strong support system not only for those families but also the entire community as most everyone is related to most everyone else in some way.

Rural counties, in general, do not have "housing projects;" and although there may be some housing available with rent subsidies, high density residential housing is unusual in these communities. Some rural poor live in structures that city people may not recognize as residential housing; and in fact, in the city, many of these people would be considered homeless. Of course, they do not consider themselves homeless. I have had a few students whose families lived in campers, tarpaper shacks, equipment trailers, old school buses, tents, tool sheds, and horse trailers. Some of those homes had a source of electricity, some did not, and I think none of them had

indoor plumbing. But the children survived, and sometimes flourished, despite such circumstances.

One of the strangest parts of the substandard housing situation in rural counties is that not all of these people are actually poor. Some are just living "off the grid," and many more just prefer a simple and natural lifestyle. It is a mistake to assume that someone who lives in a teepee, for example, cannot afford to live elsewhere. Buffalo skins are not cheap. Choice, in terms of everything, is vitally important to rural folk, and they do not generally appreciate the county, or anyone else, telling them their homes have to be "up to code."

There were farms and chicken houses throughout Pickens County, little traffic, and less crime. The high school and the area churches provided most of the social life, with practically everyone in the county attending sports events at the high school and large numbers of people, whether or not they actually belonged to any of the churches, participating in church-related programs. The county's economy and tax base were boosted by two resort/retirement developments, Bent Tree and Big Canoe, where most of the property owners were either retirees or weekenders who did not have children in the local schools.

With a healthy tax base, the schools were able to provide many things that other mountain schools could not provide, but I believe most of the credit for the really innovative things at the high school goes to the librarian, a no-nonsense woman who never took no for an answer. Not that anyone on the school board was brave enough to say no to her anyway — she must have been the librarian when they were in school. She arranged distance learning courses to provide expanded offerings in

science and foreign languages and collaborated with Darton College to offer a college freshman English course to the seniors — at 7:00 in the morning! I believe that distance learning was in its true infancy at the time and that Pickens County High School was one of the first public schools to offer such courses.

The vocational school had an excellent program, and many college track students received "dual" diplomas by taking vocational classes, usually technology based, in addition to their regular classes. Everyone was encouraged to do so. When my daughters were in school there, about 80% of the high school graduates enrolled in some sort of post-secondary program, including the armed services. The horticulture teacher convinced many of the able but not academically enthusiastic boys to attend Abraham Baldwin Agricultural College to become golf course turf managers and landscape architects, and many of those boys have found excellent jobs in the area as the metropolitan Atlanta area continues to expand northward. Appalachian Technical School is in Pickens County, and many students attended classes there during and after high school.

About 20% of the graduates went to four-year colleges — to public and private in-state schools as well as institutions like Yale, Davidson, and Tufts. Some returned to Pickens County after college and were able to find good jobs in the community or commute to jobs in Atlanta, but most moved to other places. Those other places tended to be within a few hours of home. All of this was happening in a county in which the typical parent had not finished high school, fewer than 5% of the adult (fulltime) residents had completed college, and outsiders and the outside world were still viewed with suspicion.

Things have changed. Pickens County has exploded since we moved away, just ahead of the influx of city people, and they anticipate having about 50,000 people in the county by the year 2010. It is not the same little town in the foothills, but I hear the schools are still outstanding.

The Pickens County school system was my introduction to rural education, as a parent with children in the elementary, middle, and high schools, and as a substitute teacher at the high school while I was getting my master's degree. I really thought we had found Nirvana. I accepted a teaching job just two counties away, twenty four miles north on a four-lane divided highway, but what I found there bore little resemblance to what I had experienced in Pickens County. The schools in that county were probably much more typical of rural schools in Georgia, which is not to say that there are any typical rural schools, but most rural schools do not have the tax base, the low student population, the easy commute to metro area jobs, or the innovative librarian that Pickens County had.

In my doctoral course work, I did not have the opportunity to explore rural education despite my keen interest in the topic and what I perceive to be its impact on the nation. Forty three percent of the nation's public schools are in rural communities, and 31% of the nation's children attend rural schools (Beeson & Strange, 2003). These are children of all races, both genders, and every socioeconomic level.

Multicultural issues are the focus of many recent research studies in education, but it seems we have a somewhat myopic vision of the world in regards to issues of equity, with our attention directed almost exclusively to racial issues — specifically racial issues in urban school settings — and, to a lesser degree, gender

issues. Our attention to those issues is both necessary and commendable, but I live in a state in which more than a fourth of minority students, and almost a third of all students, live in rural areas, oftentimes in poverty, and in which the rural population ranks seventh in the nation (Beeson & Strange, 2003), and there seems to be virtually no attention given to the dilemmas faced in rural mathematics education.

Many of Georgia's student teachers will find themselves, not in urban settings but in rural settings; and I fear they would be completely ill-equipped to deal with the complexities they will find there if not for the fact that many of them grew up in or near such areas and can call on their own life experiences to help them navigate. My own teaching experience in rural schools and my experience supervising student teachers bear this out. When I first started teaching in a rural school, I would have been totally out of touch with the realities of that educational environment if I had not lived for several years in a nearby community while my own children were in school. Even then, my city upbringing and my previous rural experiences conflicted occasionally with community norms, and I had to work at finding a balance.

The student teachers I have supervised in a rural north Georgia high school have done very well, provided that they were from rural areas. One student teacher, who grew up in a cosmopolitan area, did not do well in the rural school to which she was originally assigned but had a very successful experience when transferred to a suburban school. The nuances that permeated the rural schoolhouse, undetectable to her, created conflict, not with the students but with her mentor teacher, the other teachers, the staff, and the administration. Watching the drama unfold, I wondered

how often I had unknowingly missed similar cues when I was teaching in a similar school. I will never know.

Few mathematics teacher educators have any apparent research interest in mathematics education as it exists in a Southern rural context, and it seems that there are some faulty perceptions about the demographics of Southern rural communities. Such assumptions about demographics can lead researchers to concentrate on issues and cultural differences that are not specifically rural in nature and that are manifested in much the same form in rural and urban contexts. Furthermore, when we casually observe rural schools and communities, we make assumptions, valid and otherwise, that may impair our ability to judiciously interpret what we think we see.

During an afternoon seminar, I took exception to Dr. Larry Hatfield's claim that there is a "culture of failure" in rural schools and communities. In any community, there can be groups of people who have relinquished their responsibilities, who accept failure as a given, and who blame everyone but themselves for their lot in life; but these groups, who may very well share a culture of failure, do not represent the rural communities in which they live nor is their existence unique to the rural circumstance. Perhaps our difference of opinion is a problem of perception, but I believe that once an observer understands the rural community's definitions of success and failure, there can be little doubt that "culture of failure" is an inaccurate descriptor of rural culture.

Success and Failure

Success and *failure* are relative and subjective terms, but in most rural Southern communities it seems that someone is generally considered successful if he (and occasionally these days, she) has some degree of influence in the community, and just about everyone would like to be successful. *Success* does not require wealth or a fancy title or a diploma of any sort. If a rich attorney moved into a small town, he would not be considered successful for many years, if ever. He would be described as a rich attorney from wherever – even when it has been so long that no one remembered where he was from. His friends might add that he is "really smart." If someone from a small town becomes a rich attorney in that town, he still has to earn "successful" status, which is not the same thing as being wealthy. Being successful implies that the members of the community, after having reviewed an individual's life, his work, how he treats his friends and family, and how he treats his enemies, has decided that the individual has earned their trust and respect. In that way, he gains influence in the community (i.e., becomes successful) because people value what he thinks and says and does. More often than not, a person's relationship with God will enter into this assessment as well.

If you were to ask almost anyone in a Southern rural community what it means to be a *failure*, the response you will most often hear is that it means someone is "just sorry." This state of being, akin to being no-account, but worse, is often related to sinful living of some sort — too much alcohol, too many fast cars, drugs, gambling, etc. — rendering the sorry individual incapable of anything except a life of

failure. You will almost never hear anyone say an honest and hard-working member of the community is a failure.

We talk about mathematics and mathematical thinking as gateways to power and prestige. Sometimes I think we are a bit delusional about that, and I suspect that language arts teachers would argue the point; but assuming mathematics is a gateway, then we should be able to find a connection between mathematical prowess and success — not necessarily the kind of mathematical prowess that is measured by standardized tests or the kind of success that is defined by going to college and doing well there or amassing great personal wealth. I believe, almost without exception, that the people considered successful in these communities are problem solvers with enviable mathematical and critical thinking skills.

In rural communities, some of these successful people may not be able to read and write, but they often seem to be very mathematically intuitive and can hold their own in terms of mathematical concepts and computations that are related to their work. Some of their computational methods are a bit strange, but they have figured out a way to do what they need to do. If you ask a carpenter to tell you about the Pythagorean Theorem, he will probably look at you as if you just arrived from the moon. Ask about the 6-8-10 rule, however, and he might explain it all very quickly, in his own language. Just try to keep up with somebody who is in command of a carpenter's square. That fellow in the front-end loader can do all sorts of things with slope, but he might not recognize a piece of graph paper. The experienced logger can tell you about the tonnage of the trees in your yard and figure out what they will bring as saw timber or pulpwood. He probably does not own a calculator, and he may or

may not use a pencil. If he uses a pencil, he most likely will do his calculations on a piece of wood rather than a piece of paper.

Many of these people are not really aware that it is their mathematical ability that made them more successful than the "other guy," but they could figure out the cost to make the estimate to get the job and make a profit. They did not need a boss to explain the angle for the miter box saw or the dozer blade. They understood the terms of the bank loan and how to include the interest payments in their budgets. But whether or not they can relate their skills to the mathematics being taught in the schools, whether or not they believe there is value in school mathematics — these beliefs affect the ways in which they support their children's educational experiences.

Some of these people believe that education is the key to their children's future success, that the world has changed, and that a diploma is a necessary thing nowadays even though they did well without one. Some believe education is a social necessity but not an economic necessity. Others believe school is a waste of time, serving primarily to keep children off the streets and out of the job market, and these people do nothing to encourage their children to succeed in school.

There are, of course, people in every community whose backgrounds include formal education (or who wish they had been able to receive a formal education), who value intellectual growth and academic success and who support wholeheartedly their children, the teachers, and the schools. They may or may not be satisfied with what the schools are able to offer. They may or may not be actively involved with the schools, perhaps volunteering or participating in parent-teacher organizations. Being supportive of the schools does not, however, necessarily mean being supportive of

every academic theory, curricular overhaul, or instructional fad that comes along — especially when changes in school policy are mandated by state or federal law.

Academic Choice and Official Policy

There is frequently some difference between following *the law* and following the *spirit of the law*, and an excellent example of that, though not related to mathematics, is the promotion of "Christian learning centers" (CLC) in several rural counties in this state and elsewhere. To get around the separation of state and church, many communities (about 1000 nationwide) have purchased property adjacent to the local high school, and religious instruction is offered at those sites. During the school day, students can walk over to the CLC to take Bible education courses for which they receive elective credit (Georgia Legislature, 2002). While this practice is obviously not directly related to mathematics instruction, it does raise questions about the value the community places on federal laws and guidelines regarding education, how those laws and guidelines are followed, and what pressures are placed on state and local policymakers to enable deviations from those laws and guidelines. More relevant are courses that may be included in the mathematics curriculum that clearly reflect a determination by the local community to educate the students the way it sees fit.

In the past, the 9-12 mathematics curriculum found in Georgia schools was loosely determined by the state under the Quality Basic Education Act (QBEA). By 2008, all grade levels are on track to implement the new Georgia Performance Standards (GPS), which are currently being implemented in the middle grades. The

No Child Left Behind Act of 2001 (NCLB) and the related Adequate Yearly Progress (AYP) requirements mandate that each spring, Georgia elementary students through eighth grade take Criterion-Referenced Competency Tests (CRCT), and that juniors take the Georgia High School Graduation Test (GHSGT). Graduation requirements are stated as Carnegie units, which are actually only blocks of seat time — each unit of credit requires 150 hours of instruction during the regular year or 120 hours during summer school. Until the advent of the GHSGT and its competency assessment for each of five core subject areas, including mathematics, there was no explicit requirement that students actually learn anything, and in mathematics, the GHSGT does not require much evidence that students have learned anything beyond basic mathematical skills.

Course titles and descriptions are given by the Quality Core Curriculum (QCC) standards, but there has never been a real effort to determine how closely schools were following those requirements. Beginning with the 2004-2005 school year, statewide end of course tests (EOCT) for Algebra I and Geometry were initiated, and these tests now count as the final exam for those two courses — 15% of the final grade — and students must have a final average of at least 70 to pass the courses. Most teachers report that quadratic functions are given little attention on the EOCT for Algebra I, and formal proofs receive similar attention on the EOCT for Geometry. Although the EOCT scores have only a moderate effect on pass/fail rates for these courses and passing the EOCT is neither a requirement for course credit nor currently a part of AYP requirements; the percentage of students who pass or fail the

EOCT is posted online for public scrutiny. Teachers are under intense pressure to make those numbers look good.

In rural Georgia schools during the 2004-2005 and 2005-2006 school years, I observed numerous rural classrooms in which the entire focus of instruction was on developing students' skills for taking the EOCT. These were not necessarily mathematical skills but test taking skills. Everyone has to pass Algebra I or its equivalent to meet graduation requirements. College track students seemed relatively unaffected by the EOCT, but the content and instruction for general/vocational track students often seemed to have deteriorated to the point that it was often hard to see how the courses could be described as even remotely equivalent to Algebra I. This customization of individual courses seems to be prevalent in many rural schools, but it is not clear if such courses are mandated by the school administrators, the district office, or if they are simply developed by the teachers, bastardized, we might say, from the QCC course description to something they feel is more appropriate, given the skills their students bring to the classroom, and more likely to generate an acceptable number of passing test scores.

There are several events during the year that can interfere with the effective teaching and learning of mathematics in rural schools. For example, in many rural communities, hunting season is a big part of the boys' lives, and occasionally the girls' lives, too; and it causes all sorts of problems, especially in the mathematics classroom where concepts are interwoven and a student's absence for several days in a row can haunt him for quite a long time. However, the father-son, or parent-child, bonding that goes on in a tree stand is critically important and highly valued, and it is

generally understood that the mathematics teacher will do whatever is necessary to help the child catch up. Depending on the amount of time students are out, this can be a very difficult challenge for the mathematics teacher. A similar problem arises when school starts at the beginning of August, interfering with the Baptist Church revival. Such social factors impact instruction, expectations, and achievement, and different schools deal with them in different ways.

These, and other, issues facing rural mathematics educators might be summed up by posing the following general question: How do the social, political, and economic factors of the rural circumstance influence the teaching and learning of mathematics? My objective is to identify and describe those factors that influence the mathematics program in a rural Georgia school; to describe that program, including but not limited to the curriculum, resources, teacher quality, and instructional methods; and to describe how the mathematical environment, as structured in the community, fosters mathematical growth in the students.

Chapter 2 - Literature Review

Rural Schools in the Literature

There is not an overwhelming amount of research literature specifically about mathematics education in rural schools; but to some extent, general articles about rural education which focus on the interplay between rural communities and their schools shed light on how that interplay might affect the teaching and learning of mathematics.

As previously stated, some researchers believe there is a "culture of failure" not only in rural schools but also in rural homes and communities, lowering standards and expectations, and effectively preventing students from experiencing future success (Hatfield, 2002). In Hatfield's paper, the rural districts he cites are overwhelmingly minority, with black students comprising 73% or more of the student population. Additionally, unemployment is high, and poverty is rampant. Such demographics are not representative of all rural districts in Georgia, and not all of Georgia's rural children are in such extreme situations.

In some parts of the state, rural schools tend to have extremely low percentages of minority students while in other areas, minorities are over-represented. Nationally, the percentage of minority students enrolled in rural schools is only 8%, and the percentage of students living in poverty tends to be lower in rural areas than it is in non-rural areas (Loveless, 2003). In Georgia, however, 26.4% of rural students

are minorities, and rural schools have high levels of poverty (Beeson & Strange, 2003). Most educational research indicates that such demographic and socioeconomic factors are critical issues regardless of locale. The Southern Rural Development Center (SRDC) works with 29 land-grant institutions to address economic development issues which affect the well-being of people and communities in the rural South. One focus of the SRDC is the impact of human capital issues — illiteracy, high drop-out rates, lower percentages of college educated adults — on economic stability. These factors are also critical in explaining educational outcomes as the family's perception of the child's future opportunities will have a direct bearing on academic expectations (Mulkey, 1993), and the collective expectations of the families of students in a rural district will largely determine the expectations of the community.

What Matters in Rural Mathematics Education

Determining exactly how far behind Georgia's rural students might be is a difficult task. Part of the problem involves determining what "rural" means. Districts that gain or lose substantial economic resources can be reclassified, and as recently as 1998, the National Center for Education Statistics (NCES) established a new rural locale code, increasing the number of rural schools by about 6%. The NCES and the U.S. Census Bureau are generally accepted as sources of reliable data, but the occasional changes in classification sometimes make it difficult for researchers to compare past and present as well as here and there.

In *Why Rural Matters 2003*, Beeson looks at demographics as well as school size, teacher salaries, numbers of students receiving free and reduced lunch, student-to-teacher ratios, access to technology, expenditures for administrative and transportation needs, and per capita income. These factors, along with percentages of teachers reporting parental support, expenditures for instruction, the average number of students per grade, the percentage of the state's population that is rural, and enrollment levels, are used to rank states on an "urgency gauge." The urgency gauge measures the conditions that are faced by students, teachers, and others in rural schools.

Beeson's report also includes an "importance gauge," measuring the scale and scope of rural education in each state. Factors considered to be important include the percentage of the state's population that is rural, the number of people in rural areas, the percentage of schools and students in rural areas, the percentage of minority students who are enrolled in rural schools, and the percentage of rural children in poverty. Beeson reports that Georgia has the largest rural schools in the nation, with an average of 131 students per grade; high levels of poverty, with more than 15% of rural children living in poverty; and rural educators who often feel that parents are not supportive of their efforts (Beeson & Strange, 2003).

These statistics are unsettling. Many rural scholars believe there is a crisis in rural education, not just in Georgia but throughout the country (Hatfield, 2002); but, rural students, nationwide, outperform non-rural students in almost every subject area tested, including mathematics. There is, however, considerable variation at the regional and state level (Howley, 2003) — rural students perform significantly better

in some states, and significantly worse in others; and, unfortunately, the mathematics achievement scores for Georgia's rural students are among the lowest in the nation (Lee & McIntire, 2000).

During the past two decades, many state legislatures have addressed rural education, but it is not clear whether schooling conditions and/or student learning have improved in rural schools as a direct result of any state mandates (Lee & McIntire, 2000). Over the past twenty years, on a national scale, rural students have been on par with non-rural students on standardized mathematics tests, frequently surpassing the non-rural students in tasks that involved problem-solving skills (Howley, 2003); and rural schools outperformed non-rural students on the National Assessment of Educational Progress (NAEP) in 1996 (Lee, 2003). Nonetheless, many educators are unaware that, in general, the achievement gap has closed (Seely, 2003) and continue to operate under false assumptions about rural students' achievement, especially in mathematics.

NCLB requires standards-based accountability based on Adequate Yearly Progress (AYP), with academic performance goals set by each state. Even though we might question whether achievement gains measured by a state's own assessment are valid for interstate comparisons, Georgia is among the states which are lagging behind in comparisons of rural and non-rural students. Georgia's rural students showed no significant gain on the NAEP from 1992 to 1996 when other states posted gains for rural eighth graders at or above the proficient level from 17% to 25% (Lee, 2003).

Lee and McIntire looked into interstate variations in mathematics achievement, comparing achievement by rural and non-rural students across the country in an effort to identify state-level factors (Lee & McIntire, 2000). Particular attention was given to the connection between schooling conditions and student achievement through the use of standardized test scores as well as questionnaires completed by students, mathematics teachers, and school administrators. The schooling conditions analyzed by Lee and McIntire include instructional resources, professional training, algebra course offering, progressive instruction, safe and orderly school climate, and collective support.

Not surprisingly, Lee and McIntire found that most rural schools lack the facilities, course materials, and educational programs found in larger school districts. The American Association of School Administrators has observed that one of the main problems for rural districts is the recruitment and retention of quality teachers and that often the problem is finding qualified individuals who will fit in with the school and the community (Collins, 1999). In a study of two Kentucky high schools for the Appalachian Collaborative Center for Learning (ACCLAIM), DeYoung (2003) found that, overall, the mathematics teachers were improvement oriented and well qualified. Lee and McIntire identified at least two factors responsible for rural teachers' having less professional preparation than their non-rural counterparts: rural teachers are generally younger and because of geographic isolation, many of them have fewer opportunities for advanced study and professional development. Using NAEP scores, Lee and McIntire determined that rural schools generally have limited

availability of advanced courses for high school seniors and the offering of Algebra to eighth grade students for high school credit varies from district to district.

On the other hand, rural schools generally enjoy low student-teacher ratios, individualized instruction, and cooperative learning opportunities; and such student-centered instruction, which is believed to foster higher order thinking skills, is in line with NCTM's recommendations for reform practices. Although Lee and McIntire found that rural teachers exercise considerable control over the instructional processes in their classrooms, it is not clear from the report whether or not these progressive practices are simply a result of the rural school environment or the result of conscious reform-mindedness on the part of the teachers.

Despite the attention directed to progressive instructional practices by many educational researchers, the Lee and McIntire study found that professional training, algebra course offerings, and progressive instruction were not significant factors in mathematical achievement for rural students. Eight-four percent of the variation in achievement across thirty-five states was explained by instructional resources, safe climate, and collective support (Lee & McIntire, 2000).

Researchers continue to investigate the ways in which teacher beliefs determine instructional practices, but it is important to realize that it is not only the teacher's belief system that is critical in the rural mathematics classroom (Perry, 2003). Expectations of mathematics education, and education in general, that are brought from the community — administrators, parents, teachers, students, and others — into the school building will often determine what can be taught there and how it will be taught.

DeYoung's Case Studies in Kentucky

DeYoung (2003) wades through the muddle of definitions applied to *rural*, focusing more on economic realities than population numbers. In most cases, schools in Appalachia, the site of DeYoung's research, are in communities that are, and have been, struggling economically. Several of Georgia's rural counties are in the southern part of the Appalachian range and have economic challenges similar to those that DeYoung describes. In rural locales, local economies and demographics affect school resources as well as organizational and curricular policies and often influence the academic decisions that are made for and by students. DeYoung examined the curricular war between academic and vocational/technical forces; the underlying assumptions that were often made concerning student abilities; and sought to analyze those factors, especially in regards to accountability mandates and the current emphasis on mathematics instruction within rural and Appalachian high schools.

DeYoung defines the focus of his work as describing and interpreting cultural themes found in classrooms in which mathematics is taught and constructed. Using interviews and focus groups, he questioned students, administrators, and teachers about mathematics instruction and the importance of mathematics in the two high schools. Each school's mathematics curriculum included Algebra and Geometry, along with courses under a variety of titles that reflect the requirements of the Kentucky Core Content standards. According to DeYoung, Kentucky's requirements are tied to grade levels, not course names, other than Algebra and Geometry, and schools are free to organize the material as they see fit. Often, course names are chosen primarily because of the way the courses will be perceived by college

admissions officers. Both schools had some difficulty justifying advanced mathematics for only a handful of students. Discussions about state accountability and the necessity for targeting lower performing students generated comments about how high achieving college-bound students were being shortchanged and that instead of focusing on students whose talents could be enhanced, teachers were focusing on students who were, for the most part, apathetic about academic achievement (DeYoung, 2003).

DeYoung found that at one of the schools, there was direct competition between the academic departments and the vocational program, which was not under the direction of the principal, with the vocational program often attracting students who "should" be taking college preparatory classes. In general, there seemed to be conflict in meeting the immediate needs of the student and the community while preparing students for the future. DeYoung states that although there are differences in the economies of the two communities and the realistic probabilities of students' finding employment nearby, the historical debate rages on in both schools about whether the aim of education is to help students prepare to leave the community, for college and career goals, or to provide them with a technical/vocational foundation of locally useful skills, encouraging them to stay in the community. Perhaps as a result of the conflict between academic and vocational interests, the mathematics emphasis at both schools was changing away from the abstract to a more immediately useful and practical concentration, geared to the bulk of the students and not to the needs of future mathematicians (DeYoung, 2003).

Chapter 3 – Methodology

Theoretical Framework

I am well aware of my subjectivities and generally try to guard against jumping to conclusions that may be influenced by my personal beliefs. I admit to being fiscally conservative, socially liberal, and to having a feminist ideology, some anti-establishment inclinations, an appreciation for tradition, and considerable regional loyalty. Those subjectivities, while sometimes seemingly contradictory, are a driving force behind my perspective, social constructivism, which is an epistemology framework that supports the theory that individuals construct knowledge through interactions with their environment. These interactions include social, political, and economic events as well as communication, verbal and otherwise, among individuals. I believe that social forces from beyond the walls of the school as well as social norms within each classroom impact instruction, student motivation, and mathematics achievement.

I think it is reasonable to assume that the social norms within each classroom are, in fact, a part of the larger community construct; and if such is the case, then the social forces from beyond the walls of the school are vitally important in the construction of an academic environment. Viewing the world through such a lens, case studies and qualitative ethnographic research methods are often used to gain

understanding about the ways in which individuals and specific groups go about the business of teaching and learning mathematics.

Qualitative Ethnographic Research

Ethnographic research focuses on the identification of common cultural understandings, and such subjective, but collective, understandings are often interpreted to be more significant than objective data (Garson, 2005). Because rural schools are often believed to be at a disadvantage, or oppressed, in some way, this will be descriptive critical ethnographic research, focusing on the links between culture and behavior within the community and the mathematics classroom. In *Critical Ethnography in Educational Research* (Carspecken, 1996), there is a description of critical ethnographic research developed by Kinchloe and McLaren (1994):

> ...certain basic assumptions: that all thought is fundamentally mediated by power relations which are socially and historically constituted; that facts can never be isolated from the domain of values or removed from some form of ideological inscription; that the relationship between concept and object and signifier and signified is never stable or fixed and is often mediated by the social relations of capitalist production and consumption; that language is central to the formation of subjectivity (conscious and unconscious awareness); that certain groups in any society are privileged over others and, although the reasons for this privileging may vary widely, the oppression which characterizes contemporary societies is most forcefully reproduced

> when subordinates accept their social status as natural, necessary or inevitable; that oppression has many faces and that focusing on only one at the expense of others (e.g. class oppression versus racism) often elides the interconnections among them; and finally, that mainstream research practices are generally, although most often unwittingly, implicated in the reproduction of systems of class, race, and gender oppression. (p. 4)

I propose that a critical theory of education is a necessity for reconstructing education to meet the challenges of a global and technological society. We become so accustomed to the way things are in education that we often fail to think about the evolution of that state of being and how it might serve our purposes in the future. In failing to examine historical and current social, political, and economic factors, we are often blind to the oppression and injustice that are inherent in the system, and we frequently miss opportunities to reconstruct it in a meaningful manner. Critical theorists want to emancipate those who have suffered oppression of some sort, and part of critical theory assumes that the oppressed share, to a greater or lesser extent, the blame for the circumstances in which they find themselves. Because of this shared responsibility, neither the oppressors nor the oppressed can, independently, create change — only a cooperative and democratic process can be successful.

In a critical ethnographic study, the researcher begins with a review of the literature, exploring issues that have previously been identified and theories that have been developed by other researchers. Building on that foundation, the researcher seeks to gain deeper understandings of those issues and further develop, or generate, theories about the group or culture under examination. As the researcher attempts to

see the world from the perspective of the participants, the focus of ethnographic research narrows and sharpens and may even change substantially (Genzuk, 2003). I believe that "rural" constitutes a unique culture, distinct from "suburban" or "urban," and although some issues seem to permeate virtually all mathematics classrooms — for example, how to respond to the near-universal student lament: "When are we ever going to use *this*?" — other concerns have distinctly rural manifestations.

This research, which will include extensive descriptions of social, political, and economic forces as they converge in the mathematics classroom in a rural school, is within the framework of critical ethnography in the sense that I believe the dominant forces that construct educational curricula (especially mathematics curricula), set goals, and establish funding formulae are, in general, focused on suburban and urban issues, often at the expense of rural communities, schools, and children. I am not, however, at all certain that rural communities and schools actually go along with governmentally mandated programs beyond whatever is necessary to secure funding, and what I expect to find is that the rural school in this case study will have developed unique policies, official and unofficial, which reflect the needs of the community but may or may not have a positive impact on the teaching and learning of mathematics.

Understanding the perspective of the participants often requires some degree of immersion on the part of the ethnographer into the culture, and it is not unusual for ethnographers to live in the culture for months or even years. The extent of a researcher's participation in the culture, however, is a

continuum which varies from complete immersion as a participant to complete separation, with the researcher acting strictly as an observer (Genzuk, 2003). Wherever the researcher positions herself on that spectrum, gaining access to good informants and establishing trust and rapport with those informants is critically important.

At the time of this study, I was in the process of restoring an old farmhouse two miles from the county line that borders the county in which my research site school was located. During the restoration process, I became acquainted with several people in the area — descendents of the various owners as well as an assortment of local construction trades people. I became more and more involved in the community as I got to know the neighbors, and I believe the degree to which I was immersed in the local culture enabled me to give voice to an array of people from the community. I established a rapport with the people I met, virtually all of whom had connections to the school — as current or former students, parents, teachers, relatives of teachers, etc. — and many offered to assist me in my efforts by agreeing to participate in interviews as well as providing introductions to other people in the community that they felt would be good informants.

Case Study Research

Case study research is often used to examine complex issues by developing a holistic description of a situation, focusing on events, people, places, or other factors within a natural setting. Case studies are designed to bring out contextual details from

the viewpoint of the participants by gathering and analyzing data from multiple sources (Tellis, 1997). Multiple sources of data are an important ingredient in establishing the validity of a case study, and Tellis lists six sources of data identified by Yin (1994), all of which were used in this study: documentation, archival records, interviews, direct observation, participant observation, and physical artifacts. Data gathered from these sources are normally qualitative but may also be quantitative. In this study, quantitative data are used to expand the description given of the rural community, primarily to allow readers to have a more detailed understanding of the socio-economic factors under which the community school operates.

Stake discusses three kinds of case study research: intrinsic case studies, which are used primarily because the researcher wants a better understanding of the particular case; instrumental case studies, which provide insights into an issue or which offer refinement of existing theory; and collective case studies, in which a number of cases are examined (Stake, 1994). This study falls somewhere between the intrinsic case study and the instrumental.

Often used in ethnographic research, the case study is an interpretive research method in that the researcher will discover more than can be reported, and although the data represents the participants' story, the case study report is the researcher's version of the participants' story (Stake, 1994).

Participants

A rural county, Mayfair[1] was selected for this study after consideration of several factors: location, rural status, and socio-economic demographics. The county was within a reasonable travel distance, and multiple trips to the school would be necessary for observations and interviews. There was not much apparent economic activity in the area, but the county straddles an interstate highway, which provides access to jobs in several large cities. Mayfair County School was a Title I school with a minority population of about 84%, and although the National Center for Education Statistics reports that the number living below the official poverty level was 25%, large numbers of students in the school were in low SES brackets, as evidenced by the high number of children who qualified for the free and reduced lunch program. People who live just a little above the poverty level are still very poor.

The county had one school for all children, pre-K through twelfth grade – fewer than 300 students. The school had provided sixth through twelfth grades for just the previous four years; prior to that time, under a consolidation plan, students were sent to a middle and high school in an adjacent county. Mayfair was undoubtedly still trying to figure out how to "do" middle and high school during this study, the school's fifth year.

I believe that administrative policies, state and federal mandates, fiscal limitations, expectations about students and their abilities, economic opportunities in the community, and other such forces contributed to the structure of the academic

[1] All names of people and places are pseudonyms except where given in historical context.

environment in general, and the mathematical environment in particular, affecting the students and the work they are *able* to do as well as that which they are *willing* to do.

Data was gathered from interviews with twenty three informants, each of which discussed his or her individual experiences with the school and/or the community. They shared not only their general impressions of the school and the community but also their hopes for the future; their educational philosophies; their feelings of pride and accomplishment; and, occasionally, their frustrations and disappointments with the situation. Three of the informants were graduating seniors who participated in a focus group in which conversation centered on school experiences, particularly in regards to mathematics courses, and their future plans and aspirations. The following roster of informants gives a brief description of their place in the school or the community:

1) Mr. Owens, a local businessman who is also a retired mathematics teacher who volunteers and substitutes at Mayfair County School as well as schools in several surrounding counties;
2) Mr. Drew, a mathematics teacher at Mayfair County School;
3) Mr. Glover, a mathematics teacher at Mayfair County School;
4) Mr. Restor, a mathematics teacher at Mayfair County School;
5) Ms. Wise, the superintendent of the Mayfair County school system;.
6) Dr. Walton, the principal of Mayfair County School;.
7) Ms. Hancock, the assistant principal and guidance counselor of Mayfair County School;
8) Ms. Stancil, a teacher at Mayfair County School;

9) Ms. Gerald, pre-K coordinator and a bus driver for Mayfair County School;
10) Ms. Masters, teacher, reading specialist, and Curriculum Director for the Mayfair County School;
11) Ms. Nightingale, school nurse and health occupations teacher for Mayfair County School;
12) Mr. Whitehead, media specialist for the Mayfair County School;
13) Mr. Hammer, vocational teacher at the Mayfair County School;
14) Ms. Cass, music director at the Mayfair County School;
15) Mr. Roberts, member of the Mayfair County Board of Education;
16) Ms. Dover, officer of the Mayfair County Parent-Teacher Association;
17) Mr. Charles, Mayfair County commissioner and business owner;
18) Mr. Jones, sheriff of Mayfair County;
19) Ms. Brown, clerk of the Superior Court of Mayfair County;
20) Ms. Edwards, office manager of the local sewing plant;
21) April, a graduating senior;
22) Robert, a graduating senior; and
23) James, a graduating senior.

Note that informants quoted in the report are sometimes not identified by name, at their request, when they felt their statements might create hard feelings or other difficulties.

Methods

Overview

Research for this study followed a recursive path, with virtually every issue subject to document analysis, observation, and conversation. Historical and other public documents were available that confirmed the state of affairs, past and current, the relationship between community input and the development of current policy, the level of support given to the academic program in general and the mathematics program in particular, and community expectations for Mayfair County School. Observations provided information about the extent to which those official policies were actually implemented in the classroom and what kind of mathematical environment existed at the school. Conversations with administrators, teachers, students, and other informants served to confirm and explain what they believed was supposed to happen, what was happening, and the relationship between teachers, students, and mathematical goals that was generated as a result of those events.

Validity

An important concern in any research is establishing validity, and case study researchers can address this concern in a variety of ways. Two tactics available in qualitative research are the use of multiple sources of evidence, which can include documents, interviews, surveys, and observations, and the chain-of-evidence technique of data reduction (United States General Accounting Office Program Evaluation and Methodology Division, 1990). A chain of evidence is the sequence

followed from observation to conclusion, and if the chain of evidence is strong, an independent researcher could, theoretically, follow the steps from data collection through analysis and come to the same or similar conclusions. Some qualitative researchers would take exception to the idea that an independent researcher would come to the same understanding, noting that the analysis of the data involves interpretation of the meanings embedded in the data, and different researchers looking at the same data may make different inferences.

Nevertheless, the GAO guidelines could be considered a description of "triangulation," which is often recommended for qualitative research. Triangulation is not a specific process — Carspecken (1996) defines it as the use of multiple recording devices and multiple observers. Others use the term to refer to repetitive data gathering and procedural challenges to explanations, using multiple sources to clarify meanings by identifying the different ways in which a phenomenon is interpreted (Stake, 1994).

Wainwright (1997) points out that the goal of the qualitative researcher is not to produce an unbiased account but to deepen the researcher's understanding of a social phenomenon and that the techniques employed by the researcher to establish validity serve primarily to reduce the risk of the researcher's self-deception. The validity dilemma is often resolved when issues emerging from the data are placed in an historical context and issues previously identified in the academic literature are used to influence the direction of the study (Wainwright, 1997). Analysis of the statements made by the informants entails looking at the social, cultural, and political processes that shaped their views, and it is essential to examine the historical

development of the academic program, specifically the ways in which mathematics is taught and learned, to reveal changes in the way it has been conceptualized over time.

Mayfair County School is a charter school, operating under the terms of a charter that has been approved by the local Board of Education as well as the State Board of Education. In general, a charter school may request waivers from provisions of any state or local rule, regulation, policy, or procedure. In exchange for this flexibility, the charter school is held accountable for meeting the performance-based objectives specified in the charter. The petitioning process involves input from school administrators and faculty, the local Board of Education, and members of the community. Records of this process identified the concerns, attitudes, and influence of the community over the academic resources provided for and by the school.

Further insights were gleamed from an assortment of public documents, primarily the minutes of the Board of Education meetings, which included extensive information about budgets, school curriculum, textbook selection, school construction, employment practices, discipline policies, and citizen concerns. Old newspapers also provided some information about the community and the school. Essential sources of information were the Georgia Department of Education (GADOE), the Governor's Office of Student Achievement (GOSA), the National Center for Education Statistics (NCES), and their data bases of statistical information about the county's demographics, student enrollment, and student achievement in mathematics. Additionally, statistical information was retrieved from various reports issued by the U.S. Census Bureau.

Conversations with school administrators, district office personnel, and community members provided repetitive data, strengthening the validity of the study and shedding additional light on the official stance of the school and the mathematics program. Conversations with classroom teachers explored the ways in which the policies were being implemented, and observations in the classroom provided repetitive data to confirm the degree to which the official policies were actually being followed. These conversations were in reference to classroom observations as well as specific items of interest mentioned by other informants or found in documents and third-party data bases.

Data Collection

The first order of business was to review the minutes of the Board of Education (BOE) from 1996 until 2006, providing documentation about the political, financial, and academic issues that affected the school's creation and subsequent operations. Entries in the BOE minutes were usually brief, and occasionally I found it necessary to search for other documents to explain some events. For the most part, however, the BOE records provided a solid foundation from which to work.

My research included classroom observations during each of 27 visits to the school. I observed the mathematics teachers' regular classes, sometimes more than once; a mathematics enrichment class; and several of the school's vocational classes. Originally, I intended to use the Classroom Observation Protocol (COP), developed as part of the Collaborative for Excellence in Teacher Preparation (CETP) Program (Lawrenz, Huffman, & Appeldoorn, 2003) as a guide for collecting observational data

in the mathematics classrooms. The protocol has several parts, including descriptions of the instruction and major activities, but the classes were so small and instruction was so individualized that much of the protocol proved to be irrelevant to the situation at hand, and I found it more useful to generate and refer to standard field notes.

According to Genzuk (2003), observations and relatively informal conversations are often the main sources of data in an ethnographic study, and situational responsiveness is required in order to get the best data possible. Many ethnographic researchers believe that pre-conceived interview protocols are unacceptable, but critical ethnographers tend to have a more focused approach, often planning to discuss specific issues derived from observations and historical research (Wainwright, 1997). In addition to the classroom observations described previously, I conducted sixteen audio-taped interviews and had follow-up conversations and email correspondence with those informants. I conducted four interviews (not audio-taped) with other informants and an audio-taped focus group with three members of the senior class. In each of these interviews, I asked about issues and events that had been mentioned in the document analysis, behaviors that had been observed in the classrooms, and/or topics that had come up in other conversations; however, for the most part, I tried to allow the informants the freedom and opportunity to address the things which they felt were most important, listening to what they had to say, using their information and insights to formulate follow-up questions or to generate additional historical documents analysis to expand my understanding of various

issues. Questions were always open-ended, and informants were allowed to express their understandings in their own terms.

In addition to observing in classrooms and interviewing informants, I attended a faculty meeting, a county commission meeting, a PTA meeting, and the Wild Game Dinner, an annual fundraiser for the community. My intention in attending these events was simply to observe the interaction of groups of people from the community, but as it turned out, attending these functions was not a productive use of time. At these "public" meetings, there was little public participation, and the only conversations of interest to me were about the expense of historical restoration for the county courthouse and how to eat rattlesnake, one of the dishes served at the Wild Game Dinner. Neither of those topics was related to this study.

I asked the mathematics teachers to complete a survey for each of their courses. These surveys were adapted from pilot study instruments developed by Drs. Leslie P. Steffe and Thomas Cooney in 1979 for the Second International Mathematics Study. The questions included in the surveys address instructional strategies used with different levels of students in Geometry, Algebra, and any course that includes measurement, integers, ratio, and percent. I had originally hoped the data gathered from these survey instruments would provide information about mathematical concepts addressed in these courses as well as ways in which the teachers might differentiate between types of students. The teachers declined to complete the surveys, primarily because the individualized nature of their instruction made it difficult to "choose the best answer."

When meeting with the seniors that agreed to participate in the focus group, I wanted to know what they enjoyed about mathematics and *how* they enjoyed mathematics. I wanted to know why they had taken the courses they had taken; what courses they would have taken if the school had been able to offer them; what they thought it meant to be "good" at mathematics; if they could relate mathematics, in general, to other interests in their lives; and how they thought they might use it, directly or indirectly, in the future.

Transcripts were sent to all informants, and they were asked to verify that I had accurately recorded what they had said, and where necessary, clarifications were made. Additionally, those informants who expressed an interest in reading the report were sent a copy of the first draft of Chapter 4 and asked to provide any feedback they felt would be beneficial.

Data Analysis

Analysis is the process of bringing order to the data, organizing the data into categories, and identifying themes that emerge. Using an Excel spreadsheet, I created a table in which topics, such as student socio-economic factors, racial issues, academic expectations, mathematics curriculum, and mathematics instruction, were cross-referenced to each speaker, observation, or historical document. Transcripts had been generated from the audio-taped interviews; and those transcripts, along with field notes about observations and historical documents, were coded, cut, and pasted into the appropriate cells of the table, sub-coded, cut, and pasted into more refined cells.

By repeating this refinement process several times, I was able to compare and contrast the interview responses of some two dozen informants (approximately 36 hours of recordings), multiple classroom observations, and related historical documents to create a rough outline within which I could describe the social, cultural, political, and economic factors that are, and have been, at play in the mathematics classroom and how those factors affect the teaching and learning of mathematics at Mayfair County School. As the pieces began to come together, a cohesive and illuminating picture began to emerge, and I was able to generate some theories about ways in which social, political, economic, and other factors impact the mathematics classroom.

Many researchers feel that the analysis of the data continues throughout the writing process (Stake, 1994; Wainwright, 1997) as the researcher turned author will be forced to make choices about the content of the final report. I suspect the analysis of the data actually continues indefinitely, but as someone said, "You're never finished, but eventually you are willing to share your work."

Chapter 4 – He Said; She Said

A Brief History of Mayfair County

This is the story of a rural community whose residents came to believe that they were being shortchanged socially and economically, and their children were being shortchanged academically, as the result of the consolidation of their middle and secondary grades with those of an adjacent county. It is the story of the creation of a charter school for children pre-K through grade 12, a school that thrives as the result of realistic expectations, hard work, patience, progressive thinking, resilience, and a fair amount of old-fashioned stubbornness.

Mayfair[2] is a small rural county which had a population of fewer than 1900 people in 2000, according to the U.S. Census for that year. It is one of the few Georgia counties that had a population decline during the last decade of the twentieth century (Bachtel, 2001), but it shares that status with many rural areas in other parts of the country. As is true for many small rural communities, there is, as one informant described it, not much to do: "…but there was nothing to do here — there's still nothing to do, for kids. There are not any playgrounds, no baseball fields, or any anything…."

Another characteristic Mayfair shares with many other rural communities is a stagnant economy. As Dr. Walton, the principal of Mayfair County School described

[2] All names, including those of persons and places, are pseudonyms except where given as historical reference.

it: "...drive through downtown — it looks like a ghost town except for a post office and bank." Actually, there is a hardware store, too, but the town does look deserted; and in 2001, the county had just 20 non-farm establishments with paid employees (U.S. Census Bureau, 2006).

Approximately 60% of the citizens are black, 38% are white, and the remaining 2% are of other or mixed heritage. About 20% of the population is 65 or older, and 18% of the people in Mayfair County are of school age. There is an unemployment rate of approximately 9.5%, compared to the state figure of 5.5%, with 760 people gainfully employed; 80 unemployed, and the remainder of the residents not in the labor force (U.S. Census Bureau, 2000b). The median household income is $23,750, in contrast to a median household income of $42,433 for the state. Interestingly, although 23.4% of the residents live below the poverty level established by the federal government, and 94% of the students qualify for free or reduced lunch, fewer than 4% of residences are multi-unit structures, most of which appear to be rent-subsidized; and almost 77% of the residents own their own homes. The median value of these homes, however, is just $40,300, compared to a statewide median value of $111,200 (U.S. Census Bureau, 2006).

These figures provide a snapshot of the demographics for the county; however, demographic perceptions within the county tell a somewhat different, and much more interesting, story about the social, political, and economic life of its residents and what these perceptions reveal about the past, current, and future opportunities for the students in the county school.

Although the county has a 60% black population, the school registrar reports that the school has an approximately 84% black student population. Is this disparity the result of white flight? An aging white population? A growing black population? According to Jackie Wise, the school superintendent:

> For some of them – it's a racial issue. Some of them just don't want to go to school in a predominately black school, and we are a predominately black school…. I think the idea of the kids being sent to a neighboring county, I think there was an underlying racial aspect to it. There's no question in my mind. Of course, nobody will acknowledge that — well, the whites won't acknowledge that. But that's what happened. We had white flight.

To gain an understanding of the white flight that occurred in the county, a brief review of the county's history is in order. Integration was late in coming to the area — until the 1970s, there was a school for the black students, and there was a school for the white students. When desegregation finally came to Mayfair this changed: one public school was established, and it soon became a school for the black students; and a new private school, The Institute, provided educational services for the white children of the county. Mr. Owens, a retired mathematics teacher who had been teaching in an adjacent county at the time, explained that white parents who could not afford to send their children to the private school would home-school or arrange to send their children to schools in the surrounding counties. Mr. Owens recalled the events:

> All the schools were segregated until, what, 1970 something? Well, what happened in the county was that all of the white kids left the schools — they had a school over there called the Institute or something like that….You see, most of the communities set up academies…so you had the black schools, and you had the academies – the academies came after integration. I think that started in about 1976. I [had been] transferred to the all white school as a teacher. I had earned my Master's and there were two black faculty members – one was the librarian at the elementary school, and I was at the high school, and I taught physics and math. And that's the way that was. After the idea of integration, they were just going to let this be the high school, but then the academies started to pop up. All of the white students in Mayfair County were successful in withdrawing from the school….*we never had any real problems* [italics added].

Although there may not have been "any real problems" in 1976, Ms. Gerald, who had moved to the area several years before this study, did not quite agree with that assessment of the events that followed the passage of the Civil Rights Act:

> ...and the things I heard that happened here [during integration]….They had protests, they were drug to jail, ... and you know... something about the school ... well, there was a lot... they need to write a book about that!

There was a history of racial discord in the county, and there were some problems. During the 1960s, high school students who were involved with the NAACP traveled across the South every summer to protest civil rights violations.

Additionally, the SCLC (Southern Christian Leadership Conference) sent workers into areas in which civil rights continued to be compromised, and according to Tyrone Brooks, a member of the Georgia House of Representatives, one SCLC focus was Mayfair because of its entrenched racism and strong Ku Klux Klan presence. A catholic priest who had arrived in Mayfair during this turbulent period gave this report at the time:

> Before I arrived with the S.C.O.P.E. [Summer Community Organization and Political Education] team, there had been previous activity by the S.C.L.C. staff....organizing the youth and the community. They did integrate the public swimming facilities at the state park and the eating facilities in town. They also organized a protest picket on the merchants of the town to protest the firing of six Negro teachers. Negroes who wanted to register to vote were hindered and actually threatened with the loss of jobs or delay in relief checks, not to mention the numerous threats that there would be violence. The white people who distributed these nebulous threats of violence, however, always said that it would come from some source other than themselves. Another thing: anyone who participated in the demonstrations or attempted to register had all his credit called in immediately. It was because of this total social pressure hindering the Negro in his exercise of his constitutional rights that we thought it necessary to band together and protest publicly…

Many residents believe that the few problems that arose during this time were the result of outsiders' coming into the county to "stir up trouble" and that the

surrounding counties had many more problems than did Mayfair County. Nevertheless, there were some criminal cases resulting from events in the county, mostly in 1965, and in a United States Court of Appeals Fifth Circuit ruling from 1967, the court upheld the conviction of some citizens who had been found guilty of conspiring together "to injure, oppress, threaten and intimidate Negro citizens." In October, 1965, the two defendants, together with five other armed men, had assaulted a one-legged black farmer on his way to church and shot at the man's brother when he came to the original victim's defense. Fortunately, no one was seriously injured or killed. The trial transcript provides a glimpse of the potential for violence and terror at the time:

> A. Well, after I got about a mile and a quarter from the house I met a car. I seen a car coming so I pulled over on my side of the road and they was over on their side until they got about as close to me as them doors there and they switched right over on my side. So I just hit my brakes. When I did — see, I didn't know it was two cars. When I hit my brakes this one run around me and another one come up in front of me. I said, 'Man, what in the world's the matter with you.' Just like that. At that time they stopped the other car and come to jumping out of the cars with guns, shotguns and pistols and one thing and another, and one said, 'What did you say, nigger?' And I didn't say nothing. And he said, 'You black son-of-a-bitch, I'll find out what you said.' So he come up and started poking at me.
>
> Q. You still in the car?
>
> A. Yes sir. I didn't have time to move. I wasn't even expecting nothing. So he

started hitting at me. I just throwed up my arms like that and tried to dodge. He was trying to hit me in the face but my car is low, low top, and I kept my head back out of the way, and he reached over there and tried to pull me out and commenced to hitting on me like that. Then about that time I heard my brother scream, and he said 'That's my baby brother--

Q. Wait a minute. I thought you were by yourself?

A. He was in his car.

Q. Oh, he was behind you?

A. Yes sir. He had done come up behind.

Q. Now let me ask you, how many cars was it out there all together when they were — when this man was trying to hit you?

A. Well, it wasn't nobody but them two and my car to start off with.

Q. There was two cars?

A. Of them.

Q. Of them. Now let's find out who 'them' are. Were they white men or Negro men?

A. They was white men. They had on black. All of them was dressed in black.

Q. What do you mean, black suits of clothes?

A. They had black shirts and one thing and another, black britches.

Q. Black shirts?

A. And black britches.

Q. And there was two car loads of them?

A. Yes sir.

Q. Did more than one of them get out of the car?

A. Yes sir, all of them got out, got out with their shotguns and pistols.

Q. And one of them was trying to hit you there while you were under the [steering] wheel?

A. Yes sir.

Q. And then your brother approached?

A. Yes sir.

Q. What happened when your brother got there?

A. I heard him screaming, saying 'Don't you all—that's my baby brother, don't you all hurt him, please.' See, he was behind back there and this other one was standing up there side of the car and I couldn't hear too much what was said, cause he was trying to hit me, was hitting me on the arm, but I was trying to dodge my head out of the way. Wasn't nothing else I could do there among all them guns and one thing and another.

Q. Did you stay in the car?

A. I didn't get out. I couldn't get out among all them guns, no sir.'

Apparently, things settled down in Mayfair following this unfortunate incident. The schools remained segregated for another ten years when, as previously described, the black students became the only students attending the public school and the white students attended private academies or managed to enroll in schools in nearby counties with "better" demographics, and according to Mr. Owens, they still do:

> …But now, here's another thing that happened, and it still happens today. When integration actually took place, many of the kids out of Mayfair started going to school in [an adjacent county] — they wanted to charge tuition for that. The whites were commuting out of Mayfair County, and they still are. I guess I could name a lot of them …. I substitute, and I recognize their last names, and I see some of them…

Of course, not all white children who are not at the county school go to private schools or enroll in nearby counties' schools — a few are home-schooled. There are a variety of reasons for parents to choose an academic environment, other than the local school, for their children. For some, it is a decision based on religious principles; for others, academic considerations are the primary motivation. For others, it is family tradition. It may be a decision based on racial concerns. Ms. Dover, an officer of the school PTA, discussed the whereabouts of some of the white children not enrolled in the county school:

> I know one family with five kids who are home-schooled, probably six or eight families that send their children to [some of the nearby private schools]. Maybe 20 to 25 children in all. Over the years, it's been more than that. Even when they were sending the kids to Leeson County, they were still sending them to private schools or other nearby counties…. [The mother who home-schools her five children] was home-schooled. Yes. She was one of twelve children, and her mother home-schooled all of them!

One problem with trying to determine just how much white flight has actually occurred is in the way demographic numbers are generated. According to Ms. Gerald,

> …I don't know…in the city, maybe it's happening, too, but it's so large you're just not aware. I found that most of the Caucasians send their kids to private schools and do not let them go to school here. That was kind of strange to me. There's a family that lives off my street. She's got a mixed family. She's got two white, all white I think, and three mixed. She sends the whites to a private school, and she sends the mixed to this school. And that is something I do not understand….I drive the school bus, and I pick the kids up, and I see her putting the other two in the truck to take them. You can tell that the three that go to school here are black and white, mixed, but the other two are not. But on her form she filled out — you know, you have mixed, Caucasian, African American —she put down white. Y*ou can put whatever you want to put* [italics added].

Regardless of the accuracy of such self-selected racial demographics, when census figures are compared with enrollment, about 60 of the counties school age children are "missing" from the school's roster. Most informants estimate that of these, not more than 30 are white children who attend school out of the county or are home-schooled. Even if these white children enrolled in the county school, the student body would still be predominately African-American, with about 72% of the students members of that minority. Dr. Walton discussed these demographics and the changes he expects to see in the future.

I think over time, [students who currently go to school outside of the county] will come to school here. Over the last couple of years, I've seen an increase in the number of kids coming back to our school. In a period of economic hardship, kids who are attending private school tend to come back to public schools. I think another factor is that a lot of the parents never went to school in this county — you know, after integration, a lot of the private schools were established. The white parents sent their kids to private schools or to [other counties] to avoid integration, and in many situations, certain families have not attended the local school system in many generations. It became a kind of tradition — going to school out of the county. Initially, I think, and maybe now, there are some race issues involved in that. Because we are predominately black. A lot of the white parents just don't feel comfortable sending their kids to such a predominately black school. But I think that as the years pass, we will overcome that — as the school progresses and raises its academic standards. When I came here six years ago, we had some problems with perceptions—about what was going on at the school. We have overcome many of those perceptions and I feel that in the years to come, the school will continue to gain acceptance, and in the future, white parents will start sending their children to this school. I don't know how long that will take – five years, ten years – but I think economic progress and different people moving into the county will alter traditions. Parents will begin to look at the academic record of the school without looking at ethnicity or race.

The ideas of family tradition and changing the way people think were echoed in the words of one middle-aged resident:

> That cycle is not going to be gone until — there isn't a nice way to put this — some of the older people are out of the picture. Because everybody does as they were raised, and it's just hard to change their thinking.

The Social

The school provides music concerts, sporting events, and other activities that might help create a sense of community; and in many rural communities, the local school, especially the high school, is the venue for almost every cultural, social, or athletic event in the area as well as a source of enormous pride. As of yet, that has not happened in Mayfair. In some cases, there are racial overtones in the community's lack of support — a former Garden Club member noted that some members of that organization were not interested in doing projects that would improve the appearance of the "black" school. Other members of the community may not have gotten involved with the school or may not have attended school-sponsored events for entirely legitimate reasons. When asked if she had attended any of the events at the school, Ms. Brown, clerk of the Superior Court, admitted that she had not:

> I hate to say that I have not [gone to any events at the school]. They've had things, and I just haven't gone. That's my fault. I really should go. I should be more involved. I should go to the basketball games. I love basketball. I played basketball when I was in school. But you know how it is — you go to work,

you go home, you get involved in things when you get home, and if you don't have kids playing...

The lack of public participation at school-sponsored events has also been a hallmark of Board of Education meetings, and according to the superintendent:

> … [the town meeting in March 1998 to discuss math and science instruction] was part of the Title I requirements — you have to have a public meeting to discuss what you're spending federal funds for. We frequently call town meetings and have no one show....We put public participation on every board meeting agenda. We probably have public participation at one out of three board meetings. It's usually because a parent has an issue about something that has happened with his or her child. We've had issues on dress codes. It's usually about issues that I would consider minor in education, and usually personal, and usually discipline. We have had parents who wanted transportation for athletic programs, and that type of thing. Rarely does it have anything to do with academics — in fact, I can't think of any time it had anything to do with academics at all.

The PTA suffers from a lack of parental support, too. According to Ms. Dover, few parents actually join the organization, even though membership dues are just $5.00 per year. In previous years, everyone who attended the meetings would vote on issues — the PTA sponsors fund-raising activities and uses the proceeds to provide items that the school needs — until it became apparent that most of the parents were not members and should not be part of the decision-making process:

> At our PTA meetings, it's mostly staff — teachers and other staff. We have a few, maybe 12 or 15 parents who are there every time. They're not members, though. They won't join. They just come….I make it a point, when an issue comes up that needs a vote, I tell them to hold their cards up to vote. The first year I was [an officer], everybody would vote. And I knew they weren't all members. I mean, you're not going to vote on how to spend this money if you're not a member. That's just not right. So I started telling them that if they're not members, they're not allowed to vote. They can come to all of the meetings they want, but they can't vote. I think there are 43 members. Mostly staff and teachers. Very few parents. Maybe 20 parents. There are maybe 100 or 125 families in the school…

That many of the parents who come to the meetings choose not to join and be active participants in the PTA organization is taken by many as an apparent lack of interest in their children's educational experience. Indeed, it may be easy to dismiss what seems to be a lack of parental and public concern about academics as the result of apathy, but Mr. Owens had a different interpretation, a perspective that provides a glimpse into some of the challenges that the faculty and staff of this school face:

> … and most people you talk to, they don't comment on stuff like that because the parents don't care. Really and truly, they don't care. Oh, they're happy with [their children's personal experiences at school]….They feel pretty good about that. But I think if you were to ask if they want their children to take a year of German or French, I think they would say they don't care which one,

> or none of them. That's what I meant when I said they don't care…I'm not saying that they don't want the best for their children, they don't know what's out there. If you are not familiar with it, then it just doesn't cross your mind. You know, if you didn't know college exists, then that couldn't be a concern of yours. So you wouldn't care because you don't know it exists. How can they care about something they don't know about?

Mr. Owens believes that a parent who has never taken high school mathematics would have little reason to attend or participate in a meeting about the mathematics curriculum, but that failure to participate should not necessarily be interpreted as a lack of concern about what is best for that parent's child or children. Virtually everyone at the school believes that one of the greatest challenges they face is overcoming parental apathy, whether borne of true disinterest or simply a lack of experience and understanding about the academic process.

Additionally, informants often expressed their belief that many of the county's citizens are not able to provide role models for the children, especially in terms of careers, work ethic, and persevering when things get difficult. Mr. Glover, one of the school's mathematics teachers explained his perception of the problem:

> But as far as I can see, a lot of the parents don't take their children's education as seriously as they should. Especially when you've got your kids in school here and they have to pass the 3, 5, and 8 [CRCT]— hey, they have to pass those tests to be promoted…. Some [of the parents] are in their thirties. We have some kids — I went to school with their parents. I see some of the kids

> following the same trends that I saw their parents follow, and to be honest, a lot of them really didn't take a lot of stuff into consideration. They would come to school, but, I mean, you know, when you come to school or you're going to college or something like that, you've got to figure out, what am I doing here? What is it that I'm trying to accomplish? How can I go about doing it? But that sense of direction wasn't there. It was like, okay, *I'm coming to school because I woke up* [italics added]…

For many of the parents of the school's students, it seems they may have gone to school when they woke up, but only for a few years. Although the census bureau estimates that 56% of the county residents over the age of 25 are high school graduates (U.S. Census Bureau, 2006), according to the superintendent, when the school opened in 2001, 65% of the parents of Mayfair's students had not completed eighth grade. Perhaps those parents do not have any substantial understanding of the issues and concerns that may affect mathematics, or any other, instruction, and they are forced to trust that the school's administrators and faculty do know what they are doing. The superintendent stated that it was no wonder that these parents did not come to the Board of Education meetings — they were uncomfortable coming to the school for any purpose:

> We encourage parents to come. We encourage them to come eat with their children. We have "Muffins with Mom" breakfasts and "Doughnuts with Dad." We have lunches. The price is extremely reasonable. We do get some, the parents that don't work, but they don't feel comfortable sometimes.

Of course, it could be the case that the parents understand more than they are given credit for, trust school officials to make prudent choices, and only express concern when they sense a disconnect between what is happening and what they expected. The principal recalled that when the mathematics curriculum was changed to include Learning Logic, parents were concerned, and they did not hesitate to express their concerns:

> I remember when we started Learning Logic. There was a lot of apprehension about the program because it was new. Parents seem to have a lot of questions when the curriculum changes or when a new program is being implemented. Parents asked questions concerning the lack of textbooks associated with the Learning Logic program. Although the teachers sent home worksheets, the parents needed textbooks which provided example problems and directions to help their children complete assignments…

In any case, the lack of strong positive parental influence makes the teachers' jobs much more difficult. As Mr. Glover noted, "…it takes so much out of you — not having that parental push in the home. That takes it out of you." Ms. Wise, the superintendent, well aware of the demands placed on these teachers to provide not only academic instruction but also support and encouragement, discussed some of the ongoing efforts to make parents, especially the younger parents, more comfortable about coming to the school and participating in the education of their children:

> We've been very successful with our pre-K program because when we changed to the federally funded program, it paid for a pre-K coordinator ….

She goes to every house of every one of those children. She includes the parents on field trips with the kids, so they do a lot of traveling with their children ….She has dinners for the parents before the PTA meetings and gets them involved at that early stage. Even if they were not successful in school; even if they dropped out – here's an opportunity to be part of it... going on field trips, they like that, and if they're young — we have some very young parents — it gives them an opportunity. It's important.

The Leadership Committee is an ongoing thing. I think it's been good for the school….One of the things the Leadership Committee has been really good for is giving the parents the confidence to be leaders and serve on a committee. We suddenly had parents in those meetings who had never been in charge of anything before, and they rose to the occasion, and I was really impressed. People who didn't know how to run a meeting, you know, and you watch them grow. That was really impressive.

The pre-K coordinator, Ms. Gerald, echoed these sentiments, reflecting on the changes she has seen in both the parents' involvement with the school and their children's increasing level of achievement:

Well, I guess [some of] the parents don't realize they are in a partnership with the school. I don't know, but the newer parents are more involved. The [parents] that have been through school, you know, they're more involved with their children. I think the curriculum director — she's great, she's really great, with the program she's doing from pre-K and she follows them through, I don't know up to what grade, but from pre-K. I'm sure they're doing much

> better than they were doing before because the parents are more involved with them — more than before… Then the kids know they have that support, and once they know their parents are there, you know, they do better. And we test them at the beginning, and we test them at the end to see what and how much they have learned, and I guess for the program, the Bright From the Start program, overall, to see what we are doing, to measure how well we are doing in pre-K....

The academic achievement of children is often influenced by their parents' expectations (Patrikakou, 2004), and when the majority of parents did not finish high school, or did not attend high school at all, it may seem that the community, in general, has not put much value on education through the years. Another look at the history of the county proves that such an assumption may be faulty. Much of the history of the schools in the county has been relegated to the memories of the older residents, and newcomers are not always aware of the efforts that have been made in the past. One school official stated that:

> We've never had a Head Start program in this county. There were some letters about starting that, and then there was no other reference to it. I had started to pursue it. The county picked it up…but they were unsuccessful. They did apply, and they were unsuccessful. I'm not sure why...I'm not sure about the details.

However, at one time, there had been a Head Start program in the county, at least during those turbulent years of the 1960s, and the efforts to establish a higher

degree of literacy within the black community was described at the time by the priest who had come to the county during the civil rights protests in 1965:

> We worked quite a bit to conduct a Head Start Project. We got literacy classes going because we had to teach people at the least to be able to read and write, and, also, at these classes we would teach the necessity of trying to save money and how to go about saving it and something about consumer values. We fixed up the old schoolhouse … for the Project Head Start. I arranged … for the adult literacy classes and also for political education and as a focal point for organizing the smaller communities. There were about fifty-two children involved in Head Start. There were four full-time teachers, several aides, two cooks and six or seven adults who drove the children to school. The project furnished employment for these people. The children had wonderful opportunities they would not otherwise have had. They had fruit juice in the morning and a full hot meal and apples or oranges in the afternoon before they went home. We took a group of adults and all the children to the Atlanta Zoo. I would say that about 90% of the Negro adults of the county have never been to the zoo. The parents were so thankful for the federal government's interest in their children. The trouble with these rural counties is that the white population has made the Negroes feel that they are outside of society. But, when we brought these children and adults to Atlanta, they experienced for the first time that metropolitan cities accept Negroes into society, and this is the beginning of a reconciliation in the community…The teachers who worked in Head Start … would visit the parents at home and try to educate the

> parents of the necessity of the children's studying and having the proper attitude toward learning. The whole idea is to produce in the child some type of awakening experience to lead him to a desire to learn.

This priest, who was in Mayfair County for just nine weeks during the summer of 1965, would have us believe that the blacks in the county were totally devoid of educational, social, or cultural opportunities; that they were all illiterate; and that the parents in the county did not see any value in education for their children. This was simply not the case. One can only speculate whether the priest actually believed this to be true or if he focused his attention on the county's educational shortcomings, to the exclusion of its successes, in order to further his own agenda, perhaps to justify his temporary assignment to the area, or to encourage greater efforts by various civil rights organizations that were active at the time.

Whatever the case, during that period, the black school in Mayfair County was considered to be a superior alternative to many of the schools in nearby counties, integrated or not; and black residents in Georgia, even in these rural counties, were given opportunities to further their education. Residents of this county consistently reported that Mayfair County was providing a solid educational foundation for its black citizens before desegregation. Mr. Charles described his family's educational experience in the county:

> [My brother] is down in West Palm Beach now, practicing medicine, and he came from this school system. Didn't have a lot of math and science, but if

you want to do it, you can… I didn't get the best education that I should have, but we all look back and say we could have done better…

When the provisions of the Civil Rights Act were finally implemented in Mayfair County, Mr. Charles and his brother had already finished high school. They had attended the all black school, which boasts among its alumni many other successful and well-educated black citizens. Mr. Owens, who grew up in an adjacent county, had similar recollections about the black school:

> I had a brother to finish high school here in Mayfair, I think in 1952. In our county, we only had the eleventh grade, but over in Mayfair, they had twelfth grade. I was born – if you could throw a rock right over there, about a mile, that's where I was born and reared. My dad wanted to send one of my brothers, well, buy him a truck and let him go, to school over in Mayfair to do the twelfth grade because we only had eleven grades…. Mayfair had a much better facility for blacks back then than we had [in our county]. Much better.

Mr. Owens had earned an advanced degree, as did several of his cousins, and he made references to several of the older black residents of Mayfair County who had graduated from the all-black school before 1970 and had earned medical degrees and doctorates in various fields. How did they even know such an opportunity existed?

> Well, I was born in 1943 and finished college in 1964. I got my Master's in Baltimore….I had an aunt who was from here. She had received — I guess she was born in 1907 — and she earned her Master's from NYU. She was the

> curriculum director here and advocated going to school. That was a motivating factor for me. She was born down here. It's amazing. I don't know exactly [how she knew about NYU]. It was an interesting thing. You know, the state of Georgia, before integration, before about 1974 — when I first started teaching, if I wanted to go to summer school, they would pay me to go to a black school. So that's how my aunt got into NYU. *The state of Georgia would pay you not to go to the white university* [italics added]. I went one summer — now this was after the state stopped paying you to go elsewhere — I went to a NSF summer thing at Mercer, and Lester Maddox was running for governor[3], and he was passing out his literature, and he didn't bother to give it to the black students. So he didn't give any to me.

So it seems that throughout the 1950s and 1960s at least some blacks in and around Mayfair were able to take advantage of the educational opportunities provided by not only the black schools but also the state of Georgia, even if the circumstances now seem, at best, peculiar. Eventually, the civil rights movement did arrive, and with it the "integration" of the schools; but, as previously reported, the schools in Mayfair did not combine to create an integrated school, and the only remaining public high school in Mayfair became an all black school.

One might think that there had been no change at all, but the exodus of the white children from the county's public school system was accompanied by the near complete withdrawal of the white residents' support, financial and otherwise, of the county schools. As the county's high school struggled to survive, the idea of

[3] Lester Maddox was elected governor of Georgia in 1967.

consolidating with an adjacent county became more and more attractive. Mr. Owens described the effects of the loss of that parental support:

> Well, I felt that since they didn't have the white support, the parents being interested in the schools' being better for the sake of their children. Like, you didn't get that parental support… So if you don't get the financial support from the white parents, a lot of times, over there, there are no jobs over there, so you don't get any financial support. So, I kind of felt that the black parents just kind of felt like Leeson County could offer more to their children. But here's the interesting part of it — originally, they didn't want to go to Leeson County, the school district over there in Mayfair wanted to unite with [a different county]. But that county didn't want them because they, the Board members, they said they felt that the kids from Mayfair would pull the system down so low that they refused — even though, prior to that, the Mayfair County high school graduates had been more successful than theirs.

In 1978, the Mayfair and Leeson Boards of Education combined their efforts to provide a comprehensive school for the students from both counties, grades six through twelve, at a site in Leeson County. The elementary grades remained in Mayfair, but many residents in the county were not even aware of the school's existence. The superintendent described it this way:

> When I came here — I don't know if you've been out to the location of the old school. It's in the park – literally, in the [state] park. Hidden away. And a lot of people didn't even know we had a school. A nice rural setting, but it

> was a hidden-away school, and I wrote a grant and said it was the school of last resort because if you could afford it, you sent your children somewhere else.

For twenty years, middle and high school students from Mayfair traveled to Leeson County to go to school. As time went on, some of the citizens of Mayfair came to the realization that the consolidation was not working to the academic advantage of the Mayfair students and that the county was shouldering an unfair financial burden. The realities of the situation were startling. Not only had Leeson County built the new school on the far side of the county, necessitating lengthy bus rides for the Mayfair students, but the parents of the Mayfair students were generally excluded from any decision-making processes at the consolidated school. Mayfair was paying a fee for each student and providing transportation while Leeson County was receiving funding from the state along with credits which were used for construction and improvements at the consolidated school site.

Because of the distance, Mayfair students could rarely take advantage of any extracurricular activities or programs and parent involvement was limited; but worst of all, there was virtually no academic advisement in place for the Mayfair students, many of whom spent their high school careers amassing credits for non-academic courses and learning, too late, that they would not have the credits required for a high school diploma. The drop-out rate was in excess of 58%, according to the Charter School Assurances filed with the state, and virtually none of the Mayfair students were going to college. As Ms. Wise described the situation,

> The agreement we had with Leeson County at the time — originally, the school was supposed to be close to the Mayfair County line, but actually when the school was built, it was closer to the other end of Leeson County, so it became, for some of our students, an hour bus ride, or more. And it was at least a half hour bus ride for everyone. It was difficult for the students. If they had trouble, their attitude was, we don't need this, and they quit. But back to the school situation, we were also paying Leeson County, in addition to their taking the FTE money from the state, and we provided transportation, and we were paying $3000 tuition per child, and when I started looking into this, I called every system that was in a combined high school. We paid more than anyone in the state of Georgia. I actually took a class at the University of Georgia — a budget class — in which the professor used Mayfair County as an example of one of the worst deals in the state. Leeson County got the best deal out of that. They got a beautiful, brand new high school... I don't think anyone really realized how much it was going to add up to. And all the credit you get, per child, because you earn money for building improvements and all of these other things based on enrollment…

Ms. Dover, a long-time activist in the school, agreed with the superintendent's recollection:

> What they were doing was taking our money. And [the Mayfair students] were not given the opportunities that the Leeson County kids were given, even though we were sending our money over there. They were supposed to be

> educating our children, but they weren't. They really didn't care about the Mayfair kids. They really didn't. Most of [our students] wanted to come back. Of course, a lot of them didn't because it was easy for them over there.

In 1998, Mayfair County hired Ms. Wise to be the new superintendent. Prior to that time, the school superintendents in Georgia were elected, and Ms.Wise had previously run for the office of superintendent and had not been elected. Although there may or may not have been opposition to her stand on the consolidation or any other academic issues, the county is majority black, rural, mostly Baptist, and largely male-dominated — and Ms. Wise was none of those things. But the law changed, and the superintendent of Mayfair County wanted to retire. Ms. Wise applied for the position and was hired.

The new superintendent spearheaded the movement to build a school and bring the county's middle and secondary grade children back to Mayfair. At first, it seemed the county could not possibly do the things required by the state — the number of students was too small, the county was too poor, and there was no building in which to establish a school for middle and secondary students. Part of the solution lay in establishing a charter school, an arrangement that allowed the Board of Education to negotiate some leeway in the state requirements related to the physical plant of the school.

The Board of Education secured a grant to investigate the possibility of creating a charter school, found that it was a feasible solution, generated the necessary public support, and negotiated the renewable charter, for a term of five years, with the state. In Georgia, a charter school is a public school that operates

according to the terms of a charter, which is simply a contract between the local Board of Education and the State Board of Education. The charter school receives waivers from various provisions of Georgia law, rules, regulations, policies, or procedures in exchange for addressing and meeting the performance-based objectives specified in the charter. In the case of Mayfair County School, the guiding principles for the establishment of the charter school specified that the school would:

- Create a learning environment for all of its children,
- Improve the climate for children to become hungry for knowledge,
- Enhance both academic and vocational achievement levels to better meet state and national goals, and
- Allow a climate of inclusion for stakeholders (parents, citizens, retired professionals, etc.) to participate in means to improve the school through collective efforts.

A critical component of the charter process is gaining and documenting public support for the venture. Mr. Roberts, a member of the Board of Education, remembers the circumstances under which he agreed to serve and takes pride in his participation and efforts to make the charter school a reality:

> When I was going to join the BOE, I was asked how I felt about us being a charter school, and the first thing I said was, "Explain a charter school to me." Out of all the explaining that was told to me, the words that this would be a traditional school, an old-timey school, not with thick books with what the government and state would say we can do and what we can't do and all this

stuff, but a little more relaxed school system. I said, "yeah, that's something the people here could live with…"

The remainder of the challenge, the financial obstacles that resulted from the limited tax base of the county, was met by a Herculean effort, primarily on the part of Ms. Wise, to find and secure every possible source of funding. The Mayfair Board of Education purchased twenty acres of land, built the building, and in 2001, they brought their children back to Mayfair to attend school in a beautiful new facility. It was not easy, as Ms. Wise recalls:

> We were very impressed with the idea of a charter. It gave us the opportunity to do things that had never been done. There were so many restrictions because of size that we couldn't possibly accommodate everything. Even in the building that we're in, our classroom sizes are reduced. But we don't owe anything on this building. It's paid for. We didn't have to borrow money for it. We begged, borrowed, and worked hard — I won't say we stole! I recognized the need for an immediate grant writer, so I became one.

Beyond the challenges of helping students catch up academically, school officials were faced with a wide array of social concerns, all of which affected the children and their ability to be successful in school. Mr. Drew, one of the mathematics teachers, pointed out the difficulty some students have in focusing on school work when there are problems at home: "It's pretty common for problems at home to negatively impact our students' ability to focus on their school work.." One of the most challenging social problems in the county is the number of single mothers

— representing approximately 12% of households in the county (the state average is 8.6%). While 12% may not sound like an overwhelming percentage, Mr. Roberts pointed out that those single-parent households represent a disproportionate number of school families:

> We're at a disadvantage because about 75% of our kids live in a one-parent home, and they're probably doing the best they can, but still, you know, it's a struggle — I don't think the parents have time. I've always believed that 50% of your learning is done at home, and not at school. But if you can't, you can't. Right now, the only person losing is the kids.

The absence of fathers was brought up in several interviews, and Mr. Glover, who is in his mid-thirties, described what happened one day when his father came to the school for a visit:

> … my dad came one day to check on me, and the kids were like, "who is that?" and I said, "that's my dad." And they were like, "Your dad? Why did he come here?" And I told them he came to check up on me. He came to make sure I was doing what I was supposed to do. And they were like, "But you're grown!" And I said, "Yeah, but no matter how grown I am, he's still my daddy." They had a hard time trying to understand that 'cause a lot of these kids don't have a daddy at home. So the topic of discussion for the day was: I've never seen my daddy. One little girl said that her daddy came to see her one time, but her mother locked her in her room...So … a lot of them just don't have that male role model — not on a consistent basis — until they

come to school. Then they have Dr. Walton, Mr. Drew, me, and other teachers and coaches at the school; but outside, they don't see a positive male role model every day.

Teachers are sometimes in conflict with their expectations about the academic and social progress that is realistic, and in this predominately black school, the white teachers try to be careful about cultural considerations that may impact their classrooms. Ms. Stancil described the challenges and the emotional toll:

> … I'm not sure I'm doing the right thing with my kids. But I guess, I guess I am, as long as the scores show it…. I think, in Mayfair, it's very racially separate, you know, and coming from somewhere else, I see that and think this is just wild. It's like the town is stuck in the 1950s. And I think a lot of times, people think, well, all the smart kids around here go to the private schools and the dumb kids are in here. And I think the teachers, some of them won't come out and say it, but I do think some of them believe that. You know, and — I don't know. I've seen so many times when I've thought a child, I'd say this child is never going to get it, but then they do… I think a lot of teachers might give up too soon. I don't think they really mean to, I just think they do…I feel like I could push them a little more in my classes. I try to have high expectations. I'm always evaluating myself — you know, am I expecting enough? Am I expecting too much? Should I expect more? I have a tendency to be very easy-going, and sometimes I think maybe I shouldn't, maybe I should be that mean teacher, that task-master. But then, I don't know if that

works with our kids. They say that with African American students — I read this somewhere, in my educational psychology class — that you have to be a, I forget what they called it, a gentle something — like, you have to be strong, but you also have to be gentle and let things go when you need to. You have to be a gentle enforcer, or something like that. You have to walk that line. If you're too strong, they're not going to do anything for you. If they don't like you, they're not going to do anything for you. I know some teachers say they're not here to be liked, but it's such a gigantic part here. The more I learn about these kids and what works for them, it's always that friendship thing. But I'm not their buddy. Like, I think sometimes teachers can be too buddy-buddy with them and let them get away with too much. I just have to walk that line — let them know I care about them but I'm not going to let them screw it up. My first year, I thought I would lose my mind. I really thought they'd have to take me to the loony bin. I thought, I need to quit this job. My husband was like, "Just quit if you're so miserable," and I was like, "I can't quit. I've never quit anything." I would just come home, and, if I had a bad day, I would just cry. Just cry….I wish someone had just told me, "It's okay if things don't go great. You can't be Super Teacher every day"…

In many rural communities, there is a tension between staying in the community and pursuing post-secondary educational or career opportunities, a course of action that often means children of the community will not return but settle in places with more economic and career opportunities. One of the verses of a country song describes that situation well:

Bobby told Lucy, "The world ain't round...

Drops off sharp at the edge of town.

Lucy, you know the world must be flat

'Cause when people leave town, they never come back."

They go ninety miles an hour to the city limits sign,

Put the pedal to the metal 'fore they change their mind.

Small Town Saturday Night, *lyrics by Hal Ketchum*

Mayfair County does not have that particular tension due to an interstate highway that bisects the county and provides access to abundant educational and career opportunities that are available within commuting distance, and students are beginning to see beyond the city limits. Mr. Drew said of his students, "I think most of them want to get out. I think these kids [perceive education as the ticket out]. Technical school is an option... [Several students] are probably planning to go to college… I think they all have options."

But there are many obstacles, some of which may seem surprising, to overcome. Ninety four percent of the students qualify for free or reduced lunch (Georgia Department of Education, 2004), a clear indication of the rampant poverty in the district, and Mr. Glover described the financial challenge that some students face when *applying* for college — not attending — just applying:

> Now we have a kid who... is planning to go to college — she had like a 1300 on her SAT. I asked her if she had filled out the applications, and she said she had filled out the applications but she had not sent them off. I asked her why

she hadn't sent them off, and she said she didn't have the money to send them off. So what I did, I went and got two money orders, my own money, so she could send the applications off, and she said, "Thank you, thank you. I don't know how I'm gonna' pay you back." I told her not to worry about that, just to get a good education and come back and try to help some people. She's a smart girl, level-headed…. she's a good kid."

Although many students plan to leave the community, they do not have to travel far to find better opportunities. But leaving the county is not always so simple for young adults who have had limited contact with the "outside world." Mr. Restor, who teaches mathematics and coaches one of the sports teams, worries that instead of being a nurturing and supportive environment, a small school in a small community may actually turn out to be something of a handicap:

Some times I don't think it's realistic. When they get to college, it's not going to be three or four in a classroom. When you have to compete, you know, in the world, it ain't gonna' be small. And once they leave this small setting, they get intimidated. That's why, what I try to do, I try to schedule a lot of field trips. Take them places, you know, and get them in the sports program so they can be exposed to competition, to life outside of Mayfair. You can get intimidated if you're not used to it...you know, these kids, from this rural area, they can't see themselves outside of here, outside of their small town...when I take them to basketball games or a track meet, they just clam up. Those other kids are walking around...these kids just sit together and all of these people – I

> tell them, Meet and Greet! That's my thing, Meet and Greet! Socialize…You see these people every day. They have no social skills, they don't have them. They're intimidated. It's almost like they don't know how to communicate with the outside world, so they're just stuck right here in their comfort zone.

Concerns over the students' lack of experience in the outside world were expressed by many of the informants, and several recognized that bringing the students back to Mayfair might exacerbate that problem. As Mr. Glover explained:

> A guy from another school asked me if I think separating Mayfair from the Leeson County school system — did I think it helped the kids, or did it hurt them? And I said yes and no. Yes, because it gave them an opportunity to build their own identity, and a lot of the kids that were from Mayfair, they missed a lot of school, but pulling them from Leeson County — I think it hurt them in the sense that they don't have a lot of exposure. Exposure to a lot of different things.

Without that exposure, without seeing what the world has to offer, students are at a disadvantage when they try to visualize career and educational opportunities. Robert, one of the graduating seniors, talked about his future plans, and it seemed that he did not have clearly defined concepts of his career options, college, or the paths he might choose to take:

> I took Geometry, Algebra I, Algebra ½, and I was on the Learning Logic program for a while….I thought Learning Logic was good. I want to do

> electronics. Engineering. I like math. Sometimes, you know, it gets kind of difficult, but I like doing it. I'm looking at Athens Tech. That's all I've really looked at right now, but I'm supposed to be taking a trip to Albany, so it might change and I might think about going down there. I'm taking the Cisco classes[4], and I'm on my fourth one now. I'm really looking forward to graduating high school. I'm ready to get to working…

Not only the students but many of the parents have rarely been out of the county, and, as previously discussed, they are routinely invited to go with the school on field trips. Ms. Hancock, the guidance counselor and assistant principal, talked about how parents are actively encouraged to participate in school activities — anything that will broaden the parents' horizons will help them understand and support their children's educational opportunities. The superintendent also described her efforts to remedy this limited exposure in regards to visits to colleges and universities:

> I'm big on introducing them to colleges and universities. Our kids have no concept of it. They don't know what's out there. We do at least a couple of trips a year, taking the kids to a college or university.

But going on field trips is a privilege, and, as is true at many schools, the assistant principal has the responsibility of maintaining order and discipline. At Mayfair School, this job involves not only enforcing school rules but also educating

[4] Cisco Network Academy is a four course certification program offered through the vocational department in collaboration with Cisco Systems, Inc. For more information, see http://www.cisco.com/web/learning/netacad/index.html

the children about socially acceptable behavior. On one day during my observations, there was a field trip to the Atlanta Aquarium. Some students who had "not been behaving" were not allowed to go. During lunch in the cafeteria, Ms. Hancock spoke individually to each one of the children to let them know how disappointed she was that they didn't get to go; but she gently reminded them why they didn't get to go and that such things were under their control. She explained to me that if children have never been expected to behave, or to behave in certain ways, then the school has to teach those social skills. Children cannot be expected to behave in some mysterious "right" way, and the school sees as part of its mission helping its students understand what behavior is acceptable in society and what is not.

Mr. Drew remembered well that some of the students returning from Leeson had presented quite a challenge for the disciplinarian at the school. Things had improved, he said, because there had been:

> ... some jockeying... some politics...some image issues...some refocusing by the administration. And we've got Ms. Hancock…she is excellent on discipline. She is an advocate of tough love...

There are no "resource officers" patrolling the hallways, and there was nothing in any of my observations to suggest that there had ever been any serious discipline issues. In fact, the behavior of the students at Mayfair was exemplary during each of my visits to the school — students were exceptionally well behaved, polite, and cooperative in the halls and in the classrooms. Mr. Owens, who also spends time at other schools in the area, had a similar impression:

> I think that they're just well-behaved. I've forgotten the reason I was going, but I was over there. Maybe something about job placements. Anyway, I was in the school … and here I was, a total stranger to most of them, and they were so respectful. It was probably one of the most well-mannered groups of students I've ever worked with. I'm working down here [in another county] as a long-term sub, and the students just don't have the respect that the kids in Mayfair have.

Ms. Gerald, a veteran of the long trips to the consolidated school as well as the current bus routes, described her disciplinary methods and the ways in which the behavior and attitude of the children had changed since the community school was opened.

> They're just totally different, overall, since coming back. Because it was like they weren't connected. They were outcasts, I think, by being there. And then they had to travel from here to there to go to school and then come back, but mine,— I've been doing this for eleven years. So mine are okay. They even take up for me – "Didn't you hear Ms. Gerald say stop?" You know, it all depends on the bus driver. Some bus drivers will let them get away with things and whatever, but they just know I won't. I'm not mean, and they know that. I care, and I listen to them. When we would come from Leeson County and someone would want to fight, and — they think I was crazy anyway — so I'd say, "okay then, if y'all want to fight, I'll just pull over to the side. I've got my little book. So when you finish fighting, get on the bus, and we'll go on

home." And they'd be, "no, no, no, we're not going to fight." And I'd say, "Well, okay." Sometimes they'd be noisy, like coming from Leeson County it would be noisy, and I'd say, "Be quiet," and they wouldn't, and I'd say, "Okay, you all have to be quiet." If I had to tell them three times, I'd find a safe place to pull over, and I'd pull my little book out, and I'd start reading, and I'd say, "when y'all get ready, we'll go." And I'd hear them, "Shhh! Shhh!" but I'd just read on for a little while. Or either — if I had to stop the first time, it would be fifteen minutes, and if I had to stop again, it would be thirty minutes. And I'd say, "I don't care what you say or what you do, it's going to be thirty minutes before you get to go home."

According to Ms. Hancock, many of the students are pressured by their parents to go to work immediately upon graduating high school, and a common parental expectation is that the high school graduates will provide financial support for their families. Because Ms. Hancock's personal history parallels very closely the experiences of many of the school's families, she has been able to persuade many of these students and parents that a better course of action is to have the children continue their academic careers into post-secondary study, with an emphasis on students' going to a 4-year college or university.

Redirecting the school community's focus from attaining job skills to attaining college admission has been no easy task, nor has the idea been without controversy. Not everyone believes that the current student population is, overall, suited to that endeavor. The school stresses excellence and perseverance and

promotes the idea of self-sufficiency, responsibility, and pride, but, as the superintendent noted,

> Not everybody wants to go to college, but, unfortunately, we are trying to promote that. We need to give the kids opportunities to do what they can succeed in, and I certainly have high expectations for my students. I want all of them to do the most they can do. But when you have students with an IQ of 75 to 95 or 100. When you think about it, those people are not necessarily college material, and even if they were, they are not necessarily interested. We can't force everyone to fit in one mold.

The college issue surfaced in many conversations, and with few exceptions, informants did not embrace the idea of having everyone on a college bound program. Just how reasonable is it to have everyone on the college track? Are students' needs being served? How about the needs of the community? One teacher stated her opinion:

> Well, first of all, I would turn this into a vocational school. It's really what they need in this community. You need people here who can learn skills. There's a very small percentage of people who will go to college. I mean, that's every where. You're lucky if 10% will go, and you're lucky if 5 of that 10 will finish and graduate. For us, you're talking about maybe three kids out of a class that can even get into college. So if it were up to me, I'd turn this into a vocational school. And then teach to that. And maybe hire one gifted teacher to take those college prep kids — because it's only going to be a

> handful — and these other guys, they're just lost. They can't handle the college prep. It's not because they're dumb. They're not dumb. It's their environment, the lack of experiences…. They have no clue. So, I think we've moved in the wrong direction with that. We've put too much emphasis on going to college. Not everybody is suited for college, especially here. But in that, I would create a vocational school that would include the arts, ag, and various things, and build from there.

This teacher's vision of vocational offerings is not a dumbed-down version of the current academic program but something altogether different — a program that would provide opportunities to learn useful skills, develop talents and interests, and excel in ways that currently seem to be beyond the reach of many of the students.

As is usually the case, there are other opinions, equally valid, and Mr. Restor, one of the mathematics teachers, expressed his opinion about the psychology of encouraging all students to work toward the highest goal:

> …It started out – you know, this is just our fifth year – so we started out, we got them from Leeson County, and it was pretty much set then who was on what track. Because we made adjustments for those people, we kind of got stuck into lower level tech-prep classes. And then based on, like, the class that graduated last year, and the ones that graduate this year and the tenth, and eleventh grade — we kind of separated them according to the grades they made in eighth grade and their CRCT scores in eighth grade. But the ninth grade, we've tried to get all of them to be looking at the college track, and

> then those that can't deal with it, then start weeding them out, but at least give all of them the opportunity to start on the college track. Some of them might find out that they can do it if you just give them that opportunity. That's what I noticed with some of the seniors — there are some seniors in tech prep that easily could have done college prep — so you lose those kids. There's a girl in the senior class now that I felt like, if she would have been in the college prep track, her life would probably have had more structure and she might have had a whole different outlook on life. She would have been more goal-oriented. Because she isn't goal oriented, she ended up having a second child this year. If you have a goal in mind, then your life has more structure, and so then you don't make those bad choices…"

Unfortunately, for some students, having well-defined goals and successfully following the normal college preparatory track in mathematics is not enough to prepare them for the SAT or ensure admittance to college. April, one of the focus group participants, reported that she had taken Algebra I, Geometry, Algebra II, and Trigonometry, but she would not be able to attend the college she had hoped to attend because her SAT scores, especially in mathematics, were too low. Her mother discussed the alternatives that the family was considering:

> I push her so hard, I think, but then sometimes I think maybe she's doing the best she can. She was very disappointed in her SAT scores. She had wanted to go to Georgia College, and her SAT scores weren't good enough,… I'm not sure right now, but we're thinking maybe Gordon College, for the first two

> years anyway, and then she can transfer to Georgia College. Hopefully....her math and — is it the critical thinking skills? Her math was 330, or something like that….There was a program at Georgia College that — they'd let you go in the summer to do something, and I called them yesterday, and I don't know…. I'd say they gave me the runaround, but, I don't know because we just did a program for African-American families, and one of the guys working with the program said his son got in, and his grades weren't high enough, and so, anyway, the lady told me April's scores were too low to get into that program. She's, well, I think her grades are not all good, but she made all As this semester…

All of the school's teachers discussed the particular challenges related to the absence of clearly-defined goals in their students' lives, and even in non-academic courses, the effect is disturbing. The school has a wonderful music program that provides music at many local events. Ms. Cass, the music director, reports that she gets considerable support not only from the parents but also from the community in general. She worries that some of her most talented students have not had the opportunity to see how perseverance and hard work can pay off in the long run and will not be able to employ those qualities to pursue their dreams:

> …They are very supportive in this community. They love the bands… as of last December, I had a percussion ensemble, a wind ensemble, a jazz band, sixth grade band, seventh and eighth grade band. And that all happened with

fifty kids. So I had kids wearing a lot of hats. There's talent here, but…I don't think they see five years. They don't see ten years. Their life is day to day.

The Political

With such a large minority population, one might assume that racial issues affect decisions made by county officials and school administrators, the procurement of funding and grants, and the choice of instructional programs in the school. Indirectly, perhaps, they do; but none of the informants in Mayfair County suggested that the racial make-up of the community or the school had any direct bearing on any official policy or actions. The community has come a long way since the time when the good ol' (white) boy system prevailed. Black and white citizens are found at every level of county government and throughout the school's administrative offices.

When the movement to establish the Mayfair School began, the county's citizens were neither apathetic nor convinced that this was a prudent thing to do, and meetings of the commissioners as well as meetings of the Board of Education (BOE) experienced unprecedented attendance. For the large number of residents over the age of 65, the idea of building and operating a new school translated into a concern about property taxes, the primary source of funding for education in Georgia. Ms. Dover recalled that, "A lot of people own a good bit of land, like the dairy farmers, and they were very concerned that their taxes would go up…" The superintendent confirmed that property taxes did go up, "...we lowered the millage, but the tax amount was increased because of the reassessments the county had done." Mr. Roberts had similar memories:

> You would not believe the people in the county, when we were going through the charter process, that didn't like the idea. They had it in their head that it would cost everybody, they thought their taxes were going to go up. The taxes did go up, but our school didn't do it — you can't make these people believe that — because Ms. Wise got money from everywhere else.

For some residents, financial concerns were not the only issues — the idea of having all of those teenagers hanging around the town was also unsettling. According to one member of the community:

> Well, yeah, they were worried about their taxes. And they were worried that they would bring these black kids back to town and they would not go to school —they'd say they were going to school but then they'd just hang around town all day. When they went to Leeson on the bus, once they got on the bus, you know, they [went] some place else. They just wanted them gone…And these were middle-aged white people, middle-aged and over. They just didn't get it.

Addressing past concerns that teenagers would be playing hooky and getting into mischief, Mr. Jones, the sheriff of Mayfair County, reported that there is little juvenile crime and that they certainly do not have a problem with kids hanging around town during school hours. Mr. Roberts explained the measures that are taken to insure that all students are in school when they are supposed to be:

> We have a really good truancy officer. She's good. She doesn't mind telling the parents what's what. I heard at one of the last meetings that they were in the process of serving warrants on some parents for not sending their kids to school. I'd never heard of that before. But the parent is the one who can make that kid get up and get going. We have so many kids who say, "My stomach hurts," and the parent says okay, but once the bus is gone, the kid is fine. I enjoyed going to school. Matter of fact, I always kind of hated the summer time. You couldn't see your friends — we were scattered all around the county and the only time you got to see them, before you got to high school, was when you went to school.

Although taxpayers had been concerned that the establishment of a county school would increase their property taxes, public support has been strong for SPLOST [Special Purpose Local Option Sales Tax] initiatives that provide additional funds for the school. According to the superintendent:

> Actually, [the SPLOST] made a lot more than I expected. It brings in about $5000 to $8000 a month. Gas stations, telephone bills, tax on big purchases, like vehicle purchases. We've done it three times. We're on our third SPLOST. The second one was to help fund the school; the first one was for a school bus and a covered walkway, and the third one is for athletic fields. We're still waiting for the bid package on that. It's the easiest way for everybody because everyone pays sales tax so it's the most equitable. If you don't buy anything, of course, you don't pay anything, but almost everyone

buys something. Everyone pays sales tax, so it's equally distributed. Not just landowners and so on...

Many of the informants who are connected with the school believe there remains a tension between the school and the community, especially between the school and the county government. In interviews with county officials, no one had anything negative to say although there were admissions of initial concerns when the idea of a school was first proposed. Additionally, there had been some opposition to the appointment of Ms. Wise as the superintendent, but even those who had opposed her appointment had come to believe she was something of a miracle worker and were grateful that she had been available to lead the administration, faculty, and staff through the process of establishing the school and improving the educational opportunities for the county's children. County Commissioner Charles had taught on a provisional certificate at one time — he lasted two months! He readily admits that teaching was not a good career choice for him, but he believes in the value of education: "…the best thing you can give a child is an education. You can have millions of dollars to give him, and he might lose that, but he will never lose that education."

Regardless, many in the school community continue to view the county officials warily. Mr. Roberts described the situation:

I know that other schools have worse than we do. I don't know if I could take it in a bigger system because you always see write-ups in the paper about the Board doing this or the Board doing that, and we don't have that in this

> county. I guess I could say this is kind of a disappointment: when they mention county government on the Internet, they never mention the Board of Education. I always thought anybody who was an elected official was part of the county government, but they never acknowledge us…to the outside world we're not a part of the government of the county.
>
> When we were building the school, I went to the city council — we were trying to cut every corner that we could — and I went to them because they were going to charge us something like $3000 for a water meter. And I went to them and asked them if they could give us a break on the water meter because we were going to be the biggest user of water in the whole town. I couldn't get it. We also went to the county, you know, and asked them for different favors, and we never got nothing from nobody. Matter of fact, once the school was open, they went up $50 on our trash haul-off. Little things like that kind of put a bad taste in your mouth.

At the time this study was conducted, the system was searching for a new superintendent because Ms. Wise had announced her plans to retire, and the Southern Association of Colleges and Schools (SACS) accreditation committee had not yet issued its report on the school. It was a stressful time, the school had not met AYP goals in any year, and the charter was up for renewal. Many people were more focused on the charter renewal, especially in conjunction with the aforementioned conflicts with the county government. In a conversation about the charter renewal and the future of the school, one teacher said, "I don't see any reason why we wouldn't get [the charter renewal]...so I don't know. I'm cautious. It depends on what their

parameters are...the community perception if we lost the charter — that would be bad." Mr. Roberts went into more detail:

> …But we got some good teachers. Ms. Wise has done – all of our hiring is done by the recommendation of the superintendent – she's done a good job of recommending people, as far as teachers are concerned, and that's really helped us out a lot. That, plus our having just 270 kids. You can spend more time with a kid, you know, when you haven't got twenty five kids in a class. We've about got the Leeson County era out of our — well, it's out. Everything now is ours — something we've made happen — the juniors, the seniors, and everything is something we've made. Or our teachers made. We're not doing too well on some of our tests, but we're getting better. That's one of the things I'm a little concerned with myself because of this new thing about, that schools need improvement. That concerns me because this is our last year to get off of that. All indications are that we may get off of it, but that remains to be seen. There shouldn't be [a problem with the charter renewal], and that's one of the things that a new superintendent has to understand, too, that it's up to them to make sure we abide by everything and make sure we can get that every time it comes due because with the people, some of the people, in the county being jealous of the school, they'd love to hold that against us — if we lost the charter…we never could figure out why, what they had against it. I have no idea. I'd like to know why. I understand that some of the older ones that didn't have kids in school thought their taxes would go up. Their taxes are going to go up whether they have a school or not.

The Economic

The entire community seems to be attuned to the financial ramifications of keeping the school operating. The search for a new superintendent has heightened people's awareness of how important various sources of funding have been. As Mr. Roberts said, "The only thing that worries me about what's going on over there… the money has to keep rolling in. It takes a strong person to do that. Ms. Wise knew how to do that." And, in fact, the superintendent became famous, or maybe infamous, for her ability to get funding for the school. She was described by one county official as an "outstanding beggar," and according to Ms. Dover:

> …when we dedicated our gym, Roy Barnes was governor, and he came to the dedication. He said it was easier to just give her the money than to argue with her! He said that in front of the whole school.

When asked about racial biases in grants and funding, the principal and the superintendent, both of whom have been active in procuring grants and funding, stated that the issues they address are socio-economic, not racial, and similar to those affecting most rural school systems. In particular, the principal stated:

> RESA [the Regional Educational Services Agency] has regional meetings…I really don't see a lot of difference in the small districts. We all have similar issues and similar problems. Most communities have more than one school in the county. A consistent issue in small school districts is staffing. We're limited to the number of electives we can offer because of the limited [state]

> funding for teachers. The absence of local businesses causes the school system to have an insufficient tax-base to fund additional teaching positions… I think the socio-economic status of the county may be more of a factor than the ethnic population. Most of the grants have a certain standard of income level…

There is no doubt, however, that the feeling persists that there is a relationship between the racial identity of the community and the socio-economic status of the county's citizens, and several informants cited effective leadership and greater public interest at the local level would be needed to overcome the economic troubles in the community. As one concerned citizen explained:

> Personally, I do think there is a correlation between our being a black belt county and the lack of economic development that's here. I think part of that is the leadership — at least in the past, local leaders didn't want change. They didn't want growth. There's a lot of passiveness among many of the citizens. I think it's changing.

The County Commission Chairman and two other commissioners clearly have their hands full as they try to balance citizens' concerns and the resources available with which to govern the county. They are well aware that the interstate highway is bringing "progress" to the county's doorstep, and they are making a valiant effort to be prepared for that inevitability. They may seem to be moving slowly, but they understand that each of their decisions will affect the county for decades to come. At a County Commissioner's meeting, there were discussions about the revitalization of

downtown, the preservation of the historic buildings, construction of new facilities, zoning regulations, promoting tourism, and the prospects of bringing new industries to the area. Just a few citizens were at the meeting — only one, actually, who was not some sort of county official — but it is unclear whether the absence of other residents was the result of apathy, a result of the weekday morning meeting time, or a confidence in their commissioners' ability to make wise choices without citizen input.

Job opportunities are scarce in the community. Occasionally, offices in the courthouse need part-time help, and Ms. Brown described the jobs as generally involving basic computer skills, such as those taught in the business education courses at the school, and math skills which, she believes, are not:

> I tell you, it's very seldom that anyone is hired in the courthouse. The budget, really, is the main thing. I have two part-time people, and it's gotten where all of the offices now have part-time help. The probate judge, I think, has full-time help. And the tax commissioner has full-time help now. There's a lot of paperwork …basic bookkeeping. It's mostly dealing with forms. Sometimes you'll have a spreadsheet, but the forms are mostly already on the computer… and you just have to fill in the blanks — so you'd have to have computer skills. I collect fines, so they would have to be able to — when you collect fines, you have to disburse them to different entities, so they would have to know that this amount goes here, and this amount goes here. So they would be working with numbers all the time, and, you know, they would have to know how to disburse them. Now, everything is so computerized that the students don't really know how to do math or whatever in their heads or how to figure

> it out on paper. Like, if somebody came in and gave you a ten dollar bill and they only owed you $3.75. Would they know how to make change without going to the computer or the adding machine to figure it out? The basic stuff that we learned when we were in school, I think they've kind of gotten away from that.

Employment numbers provided by the U.S. Census Bureau indicate that a large part of the labor force is working in low-paying jobs, and although many of the ills of the community are blamed on the availability of welfare and other public assistance programs, 68% of the households do have at least one wage-earner (U.S. Census Bureau, 2000a). What is difficult to determine from the numbers provided by the Census Bureau and other data reporting services is what proportion of the households with school children have a wage-earner. Several informants expressed their view that the twenty-plus years of consolidation took a toll on the job skills of the residents in the 20 to 40 year age bracket, the generation that includes the parents of most of the school's students. These adults would include the 65% of parents that the superintendent believes never made it to high school.

Some of these young adults may have never been employed, and some of their children may not be familiar with what is required to get and keep a job. There are only a handful of non-farm private businesses in the county, and inquiries revealed that they have little turn-over and most of their employees live outside the county. Conversations with informants revealed that there is a widely held opinion that welfare has created a multitude of problems, but whether government entitlement programs have actually created the problems or not, the problems persist. Ms.

Edwards, the manager of one of the county's largest employers, revealed the depth to which these problems have permeated the county's labor force:

> You know, it's just factory skills; it's not...you know, the inspectors that are here now, their skills are a little more honed, and some of them, you know, it helps them if they can do multiple things. We just had a lay-off yesterday, but up until then we had about 45 [employees], and today, we probably have about 30. Until that project ended yesterday — we have another one coming up that those seasonal people will be working on — they're laid off for however long it takes us to get that project together. With the economic situation here, they manage their finances as well when they're on unemployment or welfare or whatever. They don't look for another job, and they just wait until this comes back up. Transportation is limited. I'd say of the ones we laid off yesterday, [all but one] live in Mayfair County. And, you know, it doesn't take a lot for them to live, and they just work when there's work, and they don't work when there's not any work.
>
> Our full-time people are primarily from Leeson County. Our plant manager is from Leeson County. The manager hires the people who work for him, and he's had that core group — they've worked together for years. He doesn't hire slackers, you know, somebody who doesn't get the job done. They may be hired for a short time. They may be hired for a project, but they won't come back….It's because of welfare. There are so many third and fourth generation welfare recipients in this area. It's just their life. Even if

> someone were to [start their own business] — you see these little housecleaning services, car cleaning, lawn care. They may start a little company, and they may work real hard, but are they paying taxes? Are they withholding? How long will it be before they get in trouble and then they'll be shut down? I don't know that the education or the skills are there to be able to manage, to do it legally.

Ms. Edwards elaborated on the problem during a discussion about the local labor force and a job skill training program sponsored by Family Connections:

> One time we did a little project with [Family Connections]. They called and asked us to work with them under some grant to employ these people to try to teach them job skills. It was a very short time, not even a month. Very basic job skills, and we didn't mind doing it. [The director] is trying to motivate them. The state is trying to train them. It's just not there. I don't think they have role models in their lives.

The manager did not know whether or not those participants had ever been students of the Mayfair County School, but her estimate of their ages would suggest that they might have spent their post-elementary school years in the consolidated school. She clearly felt that the challenges they would face in finding and keeping jobs, especially the kinds of jobs available in the county, had little to do with their educational background and everything to do with work ethic. She was not alone in citing the absence of role models in the community as a problem, but she also cited a success story:

> We did have one part-time employee – I can't think of her name, but I know she had graduated from Mayfair County School, and she was a student at Georgia College. She worked here during the summer, or Christmas, or maybe both. Very bright. She is one that made it. She just had this little part-time job. Very refreshing.

Mr. Roberts agreed that much of the employment in the area does not require formal education, and he described the requirements at his place of employment, which is located in another county:

> Where I work, we have some new managers, and a lot of the jobs, like the maintenance work that I do, they're not going to hire anybody now unless they've got a 2-year tech degree. For years, ever since I've been there, they wouldn't hire anybody without a high school education because when they first opened up, kids would quit school because they could come out here and make good money, and I think that's when the counselors and Chamber of Commerce and everybody got the plants to agree to require a high school education. Some of the plants didn't agree — they'd take anybody they could get….The people up north...all of their skilled labor have been to some kind of tech school – electricians, plumbers, masons. They've been to some kind of school. But ordinary stuff like running the furnace or driving the forklift, that's done without that. Just a high school diploma or a GED...I asked them once if somebody came in with four years' experience, would that work? And they said, no, they had to have that tech school experience. But, you know,

> you can learn a whole lot more with your hands than you do by reading in a classroom out of a book. If you've got your hands on it, to me, I mean a book's fine, but hands-on is better. That's my philosophy.

The Mayfair County School

Even before the new school was open, administrators, faculty, and staff knew there was a lot of work to be done — their students were behind, academically, and for some of them, there would be no way to complete graduation requirements before they would be too old to attend public school. Dr. Walton described the experience:

> [Leeson County] had some program for kids they thought would not be successful — without testing or anything — and I think it extended beyond our kids. The kids informed me that they made them feel like outsiders. When the students first came from Leeson, they did not have a lot of self confidence; their self-concept was that they could not finish school, that they could not pass a core class. They were not given the opportunity to take core classes — they had some kind of curriculum where they just gave them all electives.

The school initiated block scheduling and an after-school program of classes to enable students to get caught up on their credits. There were tenth and eleventh grade students who had just one or two academic credits, and it would be impossible for them to graduate without the school's providing additional opportunities for them to earn those missing credits. Having to take academic courses and complete the core curriculum were novel ideas for many of these students, and many of them had never

heard of the Georgia High School Graduation Test. The new Mayfair County School made every effort to accommodate the needs of those students, and Mr. Roberts remembers the frustrations of having students whose high school careers would be for naught:

> Our kids that went up there, when they got into high school in Leeson County, nobody explained to them that they had to have so much English, so much of this, and this, to graduate. So when we got them back, we had some that there was no way they would have enough time to finish it up.

The school is currently struggling with the ramifications of NCLB, having failed to meet their AYP goals in any of the past years. Mr. Roberts finds this somewhat mysterious because all of the literature with which he is familiar seems to indicate that when individual attention is the norm, students should be able to reach greater levels of achievement:

> I keep harping to the superintendent and the principal that our test scores ought to be great because we have so few kids. You should be able to know each one of them, know their parents, know what their weakness is, know what you need to work on. I guess I'm not seeing the whole picture or something. I think what hurts us, too, is that when we have just three in a class, each one counts so much on those tests.

In addition to small classes in which each student's test score carries the potential of sabotaging the AYP goals, in a pre-K through 12 school, if one section,

say third grade, misses its goal, the entire school, including middle and secondary, fails, regardless of how well the other grade levels do on the AYP tests, which in Georgia include the CRCT for elementary and middle grades students and the Georgia High School Graduation Test (GHSGT) for secondary students. Clearly, student achievement on these examinations can have far-reaching consequences for the entire school. Additionally, the Algebra and Geometry EOCT, while not a part of the AYP formula, create test anxiety for students and teachers alike.

According to the superintendent, the drop-out rate has been reduced to 33%; 11% if those students who could not graduate before their twentieth birthday are excluded. Scores have improved, the SACS committee has given the school accolades, naming Mayfair County School as a 2005-2006 Super System for Quality Schools; but, still, AYP and NCLB hover over the building like a shroud.

The 2006 tests would determine whether or not the school will have to be "restructured," and everyone was concerned about the outcome of those tests. Ms. Masters, the curriculum director, was especially concerned about three children who were enrolled within two weeks of the administration of the CRCT because those three students, who had not been there for the Mayfair School's program of instruction, would represent a significant portion of the student population at their grade level. She also mentioned the transient nature of some of the students' families; and she pointed out that in many cases, those students do not attend school at all when they are outside the county and often return to the school with no hope of catching up with their former classmates before the year end tests are given.

The school, ever cognizant of its students' academic and social needs, tries to establish enrichment programs that extend beyond traditional academic fare, and among the opportunities that the school has provided for its students was participation in the Upward Bound program (UPB)[5] through Morris Brown College in Atlanta. Unfortunately, that program was one of the casualties when Morris Brown lost its accreditation. The superintendent reported that there were not very many students involved in the UPB program and that it had been necessary for several nearby counties to coordinate their efforts to provide transportation for those students who did want to participate. Dr. Walton, who had previously been an Upward Bound instructor, was much more enthusiastic about Upward Bound, and he was hopeful they would be able to work something out with another college:

> I'm very knowledgeable about the Upward Bound program because I taught chemistry in the Upward Bound program — I taught in that program for two years. When I came to Mayfair County, I discovered that our high school students had the opportunity to attend the Upward Bound program at Morris Brown College… The Upward Bound program is excellent for all kids, but especially rural kids because it not only gives them the tutorial assistance, but also provides enhancement in the areas of math and science. The curriculum is not only geared to what the students are doing at their home schools but moves them to a higher level — especially in the summer program, when kids live on campus and experience college life. That is very significant, especially for a rural child because it puts them in a mind-set of going to college, teaches

[5] For information about Upward Bound, see the U.S. Department of Education web site at http://www.ed.gov/programs/trioupbound/index.html

them what college is all about, and at the same time...gives them a jump start in terms of what they will experience in their classes when they return to their home schools in the fall.

We tracked the students' grades to see the impact of that summer program, and a lot of students came back, and they were doing quite well, they said, because of that enrichment. The program provides Saturday classes that are ongoing throughout the year, from 8:00 to 1:00, they go to various classes — they also learn social skills and participate in different activities that will enhance their educational experience. The primary focus was on language, science, and mathematics — those core areas. It was very significant, and I did see progress in those content areas. I have had some communication from Augusta State — they sent a letter when they were in the process of writing that grant. But that was last year, and I have not heard anything about their progress. I think the Augusta location might be a positive consideration. Our parents are familiar with Augusta; they go to Augusta on a regular basis...they might be more likely to send their children to that area.

In addition to enrichment courses like Upward Bound, the school is trying to offer quality vocational courses, in accordance with the principles outlined in their Charter Assurances. Dr. Walton described one of the programs offered in the vocational department that enabled students to earn credentials that could lead to immediate employment after graduation:

We look for programs that benefit our kids when they get out of high school. Many of our students come from households below the poverty level. We try very diligently to encourage our students to attend post-secondary schools, colleges, and universities. We realize that teaching them technical skills will enable them to find meaningful jobs immediately after graduating from high school ....they could be self sufficient by working their way through college. We chose the drafting course for a dual reason — one, to complement the math program because, as you know, they work with a lot of angles, geometry in that program, and also to get them to work with their hands. We are constantly looking for programs of that nature, to provide skills students can use immediately when they get out of high school. A case in point – look at the Cisco program. We have been involved in that program for four years. Ultimately, if the kids are certified in that program, they can get good jobs, paying good money. It's mostly wiring, network maintenance, and programming — there are some hands-on skills involved in the program, but primarily, it's computer-based...there's a regional test, and if they take the course and pass the test, they can become certified. We have small numbers of kids involved – anywhere from 4 to 6 involved...of course, sometimes in a core area, we only have 4 to 6 students!

Many of the policy makers in the school are reading specialists, and the improvement in reading scores is testament to their knowledge and expertise.

Originally, the school used the Direct Instruction curriculum[6] for reading and mathematics. Ms. Wise described how that curriculum was chosen and why it has changed, and in explaining what is involved in choosing a particular program, she gives us a glimpse into the difficulties that a small school faces whenever changes occur in the curriculum.

> I can tell you about the Direct Instruction because I found that. They had a grant, and I was always interested in the grants, to improve the reading in the school systems. And they had models, reform models, it was a comprehensive school reform model grant or something like that, but I remember it was for comprehensive school reform. It was a huge grant. But, the meeting that the state department had was, you went to different people who were selling these different programs. We were small, and I was the only one there. They would have hour-long meetings, but I would pop in one for five minutes and then go to the next one to see what they were talking about. If it was similar to what we were already doing, I didn't see any benefit in that. But there was one that just absolutely impressed me, and that was Direct Instruction. It had to be a faculty buy-in, and I had them come to talk to the faculty. You had to have everybody on board to go into the program. The whole thing, which we

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[6] Direct Instruction is a commercially produced program available from Macmillan/McGraw-Hill. For information, contact Direct Instruction Project, University of Oregon, College of Education, 170 Education, Eugene, Oregon 98195, or Association for Direct Instruction, P.O. Box 10252, Eugene, Oregon 98195. Phone: 800/995-2464. E-mail: ADIhome@aol.com Internet: http://darkwing.uoregon.edu/~adiep/. Or http://people.uncw.edu/kozloffm/aftdi.html

constantly say, teachers are working harder and harder, but are they working better? And this was a method that absolutely worked. Our kindergarten students finished the year reading. Every now and then we have a special ed student who just can't, it just doesn't happen. That's not reading fabulously, but it's reading. They know their alphabet, their letters, they know their numbers, the phonics — they are aware. I have a master's degree in reading, so I am familiar with some of that.

The interesting thing about that is that they tell you not to use those methods, but for our students, there is no structure at home, so the school is the only structure they have. I told the pre-K people who came with the federal program — because the big thing was to let the children play at different play stations during the day — and I said, "we're not going to give up Direction Instruction in pre-K." And they said, "well, you're not really supposed to do that with our program," and I said, "We have to because those four-year-olds come to school. They don't know to sit to eat. They've never done that. Some of our kids don't know about forks. They don't know their numbers; they don't know their letters…"

In an attempt to expand the potential pool of qualified vocational instructors, a provision was included in the Charter Assurances that allowed Mayfair County School to employ people in the community who might not be certified teachers but who had skills and experience that could benefit the vocational program. The school had not hired any non-certified personnel, but Ms. Wise conceded that some of the vocational classes are taught by people who are not highly qualified under NCLB:

> We have some classes where the instructors are certified but they may be teaching a class for which they are not certified. All of our instructors are certified. It used to be that if you taught the majority of the day in field in which you were certified — it's not the case anymore with NCLB, we have teachers who are no longer considered qualified. We do have our … drafting teacher teaching a construction class — he built his own home — and our ag teacher teaches a home ec class. She's taught it in the past but she's not certified in that.

The school supports teachers' professional development and provides release time and funding for teachers to attend workshops and conferences. Additionally, many of the faculty members are pursuing advanced degrees, and Ms. Wise explained some of the financial considerations of supporting their efforts:

> … I can tell you that up until the recent cuts by Governor Purdue, we have supported continuing education and have provided staff development funds for them to pursue advanced degrees in field, for the coursework. So we have paid part of that. [Those funds were] divided equally among the teachers. The Eisenhower grants, originally for math and science, have been every year….they changed the name recently, but it's Title II funding, and it's not used just for math and science now. It's changed its purpose and become a part of NCLB and all of those requirements.

The school has adequate staff to provide a variety of courses in each department, but scheduling difficulties arise, especially in the mathematics

department, and most fingers point to the block schedule, which came under fire from several informants, as the problem. Mr. Owens felt that if the school would utilize the traditional seven-period day, then each teacher could teach six mathematics classes, and most students' needs could be accommodated:

> But, you know, in a small complex like that it would be to their advantage to teach six classes... So, anyway, I feel they can't offer as much. I guess they are limited in the variety of academics they can offer. If they could do the seven periods a day, it would help. But as a retired educator, I like for people to be highly specialized, you know, and I think that if a school is so small, you just can't. But I see the school district as being able to do something about that. They could offer seven periods. If you have seven periods, then you could have your teachers highly specialized — doing math six periods a day…

Ms. Wise also favored a traditional seven-period bell schedule, but she explained the complexities of the situation:

> It is a modified block schedule. We have an exploratory program for middle school, and some of the high school teachers teach those exploratory classes…They do a little home ec, they do a little ag; they do a technology program with modules. I'd like to get rid of the block and go back to the regular schedule. We did the block because we could offer more courses in less time, and when we brought them back they were so far behind academically, and we needed to give them as many academic classes as we could. They'd say, "I don't want to take this," and we'd say, "Do you want to

graduate?" They had never been told they had to take these academic courses. It was quite an awakening, and some of them were a little angry about coming back here, but by the end of the year, they were glad to be here.

The block schedule may work well in some cases, but at Mayfair, a tenth grader, for example, who needs to take Geometry, will have just one possible way to fit the course into the schedule, and there are bound to be conflicts. A faculty member stated her belief that the block schedule allows a lot of time to be wasted, and she doubted that students could learn much more in ninety minutes than they could in sixty. Even the music director was having problems with the schedule:

> Well, this semester has been a down semester because block scheduling just busted up the band! That's something I've fought since I've been here but I can't get them to change it….to me, block scheduling does not work. …When they hired me, I told the superintendent, I said, I'm going to tell you right now if you stay on this block schedule, there will come a semester when you have no band because of the way the kids have to take other things. And it also interferes with kids' taking two electives a year or in a semester, and they should have that option — they shouldn't have to just stay in band or shop their whole school career. They should have choices. And do it without penalizing them or having conflict with other programs. The kids should not have to give up band to get all the core requirements, but that's what happens with block scheduling. About 35% of the students were in the band program. But with block scheduling, all of a sudden the kids have to take this and this

> and this — it divides everybody up so now I don't have them. It's real discouraging. I have fussed, and fussed. Right now, we don't have a band for graduation because block scheduling took my kids! And then, you've got some kids who get out because they want to take something else — not because they want to quit band, but because they can't take something else on block scheduling. You have one choice…. So it's hard. But the fact that I've got kids that have stuck with it for four years, even if they have to get out because of scheduling, that's a positive because you've gotten them to stick with it for four years…

The Mathematics

There are three mathematics teachers who cover mathematics instruction for grades 5 through 12. Part of NCLB requires that teachers be "highly qualified," a term which implies a great deal more than it actually means, which is that the teacher is teaching a subject area in which he or she is certified, and all of Mayfair's mathematics teachers are "highly qualified," under that definition. Each of the mathematics teachers has more than ten years experience in the mathematics classroom. Additionally, two of the mathematics teachers are certified in more than one subject area. Mr. Drew is certified in mathematics, having received his degree in Mathematics Education from the University of Georgia, and he earned a Master's in Educational Leadership and is currently in an L-6 Educational Leadership program. He is also certified to teach English, and during the semester of this study, he was teaching three mathematics classes and a journalism class. Mr. Glover attended

college on an athletic scholarship, majoring in elementary education, and is certified in mathematics, language arts, and social studies for elementary and middle grades. Mr. Restor majored in Mathematics, with an emphasis in Computer Science, and is certified to teach secondary mathematics.

Mathematics teachers' qualifications, mathematical knowledge, mathematical knowledge for teaching (MKT), and their beliefs clearly influence instructional practices. It was not within the scope of this study to ascertain the mathematical knowledge of the teachers at Mayfair County School, but classroom observations, coupled with the interviews described previously, enabled me to detect some of the ways in which the teachers' beliefs affected their instruction and how their mathematical knowledge for teaching enabled them to connect their mathematics to the mathematics of their students.

I believe that MKT manifests itself in at least three ways: the ability to utilize multiple representations of mathematical concepts, the ability to ask questions that provoke thought rather than answers, and the ability to understand the students' mathematics. During my classroom observations, each of the mathematics teachers displayed considerable understanding of their students' mathematical thinking and were able to formulate questions that engaged and challenged their students. I actually saw only one of the teachers using multiple representations during instruction, but all of them referred to the necessity of finding alternative representations of mathematical concepts and emphasized the importance of relating mathematical ideas to concrete examples with which their students were familiar.

Classes are small — most of the classes during the semester of this study had fewer than a dozen students, and some classes had fewer than six students. In such a situation, the instructional method used most often by these teachers could, perhaps, best be described as conversational. Although each of them might spend a few minutes giving a lecture or providing an explanation about the topic at hand, most of the class periods were spent questioning students, prompting them to explain their thinking about concepts, answering questions from students, giving brief demonstrations, circulating about the room, and having students present their work, verbally or at the board.

Providing a rich academic experience for all students in all subjects at all grade levels is a challenge for every school district, regardless of size or the socio-economic demographics of the community. For small school districts, funding a full-time curriculum director is difficult, and hiring someone as a mathematics coordinator or coach is probably a financial impossibility. Mayfair's curriculum director wears many hats, including full-time teacher, and she handles the responsibility of choosing instructional programs with considerable skill. A self-described "reading person," Ms. Masters works with the mathematics teachers to ferret out mathematics curricula for the different grade levels.

Test scores for the mathematics CRCT, the Algebra I EOCT, the Geometry EOCT, and the mathematics portion of the GHSGT are given in the table below. Note that the fifth grade has always been under the instructional control of the Mayfair County school system, and the results for that grade level are included here to give a more complete picture of the work of the three mathematics teachers who participated

in this study. Additionally, prior to the 2003-2004 school year, the EOCT in Algebra I and Geometry were not administered. In 2003-2004, Mayfair did not have enough Algebra I students to report the scores; therefore, it is not possible to determine if there was any improvement between the first and second administrations of that test. There was an insufficient number of Geometry students in both school years for reporting. The 2005-2006 CRCT scores are preliminary scores, subject to change, provided by the Georgia Department of Education[7] and include the first CRCT administration following the implementation for the GPS at the sixth grade level. The 2006 EOCT scores were not available at the time of this report.

Mayfair County School Test Results for Mathematics

	2005-2006	2004-2005	2003-2004	2002-2003	2001-2002	Overall % Change
5th CRCT	62	38	73		37	68
6th CRCT	8	60	60	59	26	(70)
7th CRCT	62	81	62		48	30
8th CRCT	68	41	60	53	35	17.1
Algebra	No data	37				
Geometry	No data	No data				
GHSGT	100	89	62	65	67	50

[7] See http://public.doe.k12.ga.us/pea_communications.aspx?ViewMode=1&obj=1187

Although scores have improved, with the notable exception of the most recent sixth grade CRCT, the depth and breadth of the mathematics curriculum for the high school is severely limited. Mr. Owens recalled supervising a student teacher at a high school in Atlanta, a school in which the mathematics courses offered were similarly limited:

> …and, like I said, the most advanced class they had was that one Geometry class, and … this is kind of sad, just to think the average child there — I don't see how he could do well enough on the SAT to get into any decent school. Just couldn't do enough of the math with just that Geometry, a few algebraic skills… small schools — I think they can't offer the variety of things that a larger complex can. …over in Mayfair, I doubt seriously if they have any advanced placement classes there. It's a real disadvantage. If you had a really gifted son or daughter, you'd feel as though you would have to go out and seek the additional things to challenge your child, to keep your child wanting to get further along. So that's the disadvantage, and I feel as though Georgia created that by the way it was set up. We've got too many counties…It's a disadvantage even though I like that type of setting, but you'd have reservations, really, about wanting to rear your family there. But, still, the end product, in a lot of cases, is really great.

Not surprisingly, the mathematics teachers report that their students generally lack motivation and self discipline more often than they lack ability — that seems to

be a common complaint among mathematics teachers everywhere. However, during my observations, the mathematics students at Mayfair were almost always on task and fully engaged in the activity of the moment, suggesting that motivation and self discipline become problematic when they are on their own and not under the influence of their teachers.

Each of the mathematics teachers has his own theory about what works to build the students' motivation and confidence in their ability to succeed:

> Mr. Drew: You do win them over with love. Ultimately you do. I can be hard-nosed with them, but I can get more from them the other way...This is more like a mission.... There's a lot of compassion...if you're a good teacher, you hit some kind of balance. If you don't expect them to do it, if you don't believe they can do it, you should find another job. Sometimes you do run out of steam, but you have to believe in them.

> Mr. Glover: …when you are up to bat, it's only you, the individual, and you want to work to make yourself better so that you can perform at your highest level... build self esteem. You feel confident about yourself when you're up there batting, or up there pitching, and you want that confidence when you come to class, when you give your answer. I know I've got this one. I know I got this one right because I did everything I was supposed to do. And I talk to my kids about that all the time — about having confidence in their answers. I'll say, "Are you sure you got this right?" And they're, like, "I know I got it right because I did it step by step." And I'll say, "Ain't no doubt in your

mind?" and they'll say, "Ain't no doubt in my mind. I know I got that one right." And they'll do that. Sometimes they'll be confident in their answer but they still made some mistake, and they're like, "oh, man, my bad, my bad." And I tell them there's nothing wrong with making mistakes. We all make mistakes. You fall off a horse, you just have to get back on. Dust yourself off and get back on. It ain't your fault if you fall, but it'll be your fault if you don't get up. I tell them that all the time...

Mr. Restor: …The issue for us really is just for them to put forth effort. That's the hardest — for us, that's the issue. How can I get them to give 100%? It's like, you know, that's all I go out there with — hoping they'll give me 100%. They don't give me 100%...That's something teachers have different views about. Well, like, I give a lot of homework. And then there are some teachers who don't give a lot of homework. But, you know, I just believe in making them work, work, work. Because if they don't do it, like, if you give them homework and they do half of it, at least they did something, and you get some who do more. Some do all of it.

Kindness, pep talks, and challenge — each of these teachers has a personal style that reflects his philosophy about what to do in the classroom to inspire his students, and those statements are amazingly accurate self-reflections in that classroom observations gave ample evidence of those behaviors. Just as they have different ideas about the best way to motivate their students, they differ in their opinions about exactly what should be taught in the mathematics classroom, how it

should be taught, and when it should be taught. These teaching philosophies are influenced by, among other things, accountability concerns and the teachers' beliefs about their role in shaping not only the mathematical foundations for more advanced study but also the lives of their students.

The mathematics program has not seen the dramatic improvement in student achievement that the reading program has enjoyed, and the school is still searching for a mathematics curriculum that will work for its students. Ms. Masters, the curriculum director, explained that the curriculum for mathematics is different for different age groups. The kindergarten uses Direct Instruction, but that program did not work for the older children because, as she put it, the language of instruction was not the same as the language on the CRCT, and the students were faced with problems on the tests which they often could not relate to what they had been doing in class. The superintendent provided more details about the school's elementary and middle grades mathematics curricula:

> We tried the Direct Instruction in math, but we didn't feel it was as effective [as it was in reading] because it didn't comply with the state-required testing; it wasn't set up in the same format and the students were not testing well, so we had to change math programs. Saxon math was, I think, there before. We're not using that now. Well, we are using it as a supplement. Saxon math is just flat out drills. The "I CAN Learn®," math lab[8] is a grant. It's basically, almost totally, a computer application. It's – each child is working,

[8] For information about I CAN Learn® contact JRL Enterprises, Inc., 912 Constantinople St., New Orleans, LA 70115 or see http://www.ed.gov/offices/OERI/ORAD/KAD/expert_panel/new_mathprogs.html

supposedly, at his own speed. It is like Learning Logic at a lower level, I think.

"I CAN Learn®" is an acronym for "Interactive Computer Aided Natural Learning." This is a computer-based instructional package developed by JRL Enterprises for delivering standards-based Algebra and Pre-Algebra, and the system delivers instruction on a one-on-one basis to every student, providing feedback to the student and the teacher through assessments. The school received a large grant for this technology, which Mr. Glover describes as "very much like Learning Logic," and is primarily used at Mayfair School for supplementary instruction.

Although teachers are using technology in their mathematics classrooms, they do not seem to be using it for any purpose other than as a source for supplemental algorithmic practice. When asked about discovery methods of instructions, Mr. Restor responded that "I don't do a lot of that. I think they try to expose them to that in the eighth grade." However, except for an enrichment class offered during intersession, the eighth grade classes seem to be taught in a traditional manner; and instruction based on discovery methods does not seem to be a part of the normal scenario in any of the mathematics classrooms. None of the classes I observed included any exploratory activities for the students — most instruction focused on algorithms — but the students were encouraged to talk about different strategies they might use for solving problems. For example, in one of the lessons on linear equations, students used a variety of charts, tables, and graphs to establish the relationships between variables, and they discussed the advantages and disadvantages of each representation.

The week after Spring Break is intersession, and during this time, students who need remediation are required to come to school from 9 to 12 each day. The remainder of the students in eighth grade were invited to come in for enrichment. I sat in on the enrichment class in which eighth grade pre-algebra students were exploring linear functions on graphing calculators. This was their first experience with both the linear functions and the calculators. Mr. Glover and Mr. Restor were working with this group of nine students, and once again I observed the conversational style I had observed in the regular classes, with each student receiving individual attention and additional instruction when necessary. After about an hour, the students went to another room to play "board games." I envisioned some sort of mathematized version of Monopoly®, but what they played was a mathematized version of Jeopardy, on the white board, with each student taking a turn presenting a nonstandard problem for the others to work out. The students seemed to enjoy both the instruction and the games, and when asked if all of the students were in the same class during the regular session, Mr. Glover replied:

> All of them, except two. There are two who are in Special Ed so they don't come to me for math. I give their work to the Special Ed teacher, and she breaks it down and works at a slower pace with them. We try to make sure they're learning the same things as the regular class.

Mr. Drew

Mr. Drew's classes were small, just three to ten students in each, and each student received not only individual attention but instruction that was geared to that

student's learning style. Among the classes I observed were an Algebra I class and a remedial class that seemed to be nearly identical to the Algebra I course. Mr. Drew explained that in the remedial class, in which "basically, you're teaching them enough to pass the graduation test...," those students who covered the Algebra I material, as specified in the QCCs, and passed the EOCT would get credit for Algebra I. Not all of the students in the class were expected to be able to do that, and those who could not work at that pace but successfully covered the pre-algebra material would also get a mathematics credit.

It seemed that the students in the remedial class were on par with those in the regular class, but in the placement of the students, there were considerations about prior mathematics achievement, eighth grade CRCT scores, special education modifications, and other issues that would not be readily apparent to an observer. When asked how students were assigned to different classes, Mr. Drew said;

> You'd need to talk to the assistant principal about that. We have serious limitations about getting things in the right order. We get such a hodge-podge of students…we had a lot of scheduling problems this semester. I just handle the ninth graders. Mr. Restor takes them from there …, but my understanding is they have Algebra I, an applied Algebra — whatever the tech prep thing is for the state. I think we do an Informal Geometry. I've never taught those here. I've just taught the regular Algebra and the remedial.

In each class, the lesson was about linear equations, and the instructional style was somewhat traditional in structure; i.e., lecture, questioning, seat work, discussion,

and students going to the board. With such small classes, and because most of the students were engaged, on task, and participating, the lecture and questioning part of the class took on more of a conversational tone than what might usually be considered traditional. Mr. Drew said that whenever possible, he would try to relate the mathematics to events or things with which the students might be familiar, and in this lesson, he used several different scenarios to generate "data" — recording contracts, sporting event ticket sales, and the cost of running a small store. Students were comfortable with the interaction — willing to engage in mathematical discourse by asking and answering questions and explaining their work. As is always the case, some were more actively engaged than others, but all of them were willing to discuss their thinking, suggest solutions, and talk about connections from one concept or representation to another. Although Mr. Drew's students did not seem to be enthusiastic about the mathematics in their classroom discourse, they talked about their ideas and observations. Mr. Drew was unerring in his ability to find some kernel of validity in anything they said and value in any questions they asked, and his positive feedback helped the students maintain their interest.

The classes seemed to advance at a snail's pace — one day Mr. Drew spent at least 15 minutes discussing with the students the difference between vertical and horizontal — and the students seemed to require an inordinate amount of support and individualized instruction. It was a "warm and fuzzy" classroom environment that reflected his belief that love and compassion were important motivators for his students. I later asked if he ever had the students solve — individually, in pairs, or in groups — complex or nonstandard problems for which they had not been taught any

strategies or algorithms and then share their solutions with the class, and Mr. Drew responded:

> A lot of times, especially like in second block, I may not have them work in groups. [note: there are only three students in the second block!] In the other classes, we often break up into small groups. Because of *the nature of these kids* [italics added], I try not to spend too much time being too formal with them. We do groups. I try to incorporate — we don't do a lot of [nonstandard problems]. We do things where I let them earn — there are four people in here who will always volunteer — I let them earn "study buddy" points where if they work together and help somebody, they earn a couple of points. It's totally on effort. I've never had one yet that didn't improve in some way, but there's not always a way to measure that. It might just be an Ah-hah! We don't do much with the discovery method, but they do group work, and I always encourage them to help each other. I think, here, the pressure is.... toward the non-traditional, the tide is going there. It's subtle pressure…But I've always done a lot of non-traditional stuff...

By "the nature of these kids," Mr. Drew explained, he was referring to their level of ability, their academic backgrounds, their difficult home lives, and their previous records of failure. Although these were technically ninth and tenth gradestudents, a few were 17 or older and at least one could not possibly graduate

from high school before his 20th birthday.[9] At least one was a special education student.

Mr. Drew's students do not take the graduation test or the CRCT during the year; and, therefore, Mr. Drew is not directly affected by the requirements of NCLB. However, the EOCT, while not an official part of AYP and the accountability system, is an item of interest for the administration, and the aggregate results are readily available to the public and would seem to give a picture of the overall effectiveness of the Algebra I program at the school. When asked about the ways in which that may have affected his teaching practice, Mr. Drew expressed his view:

> I'm not happy with it. We are year-round and go through June, so the EOCT tests come very early for us. We haven't covered factoring like we should have, but.... I definitely teach to the test more than I used to.

Mr. Glover

Mr. Glover teaches courses that are directly affected by NCLB as all of his students have to take the CRCT. The test results through eighth grade are included in the AYP calculations, and the CRCT given in 3rd, 5th, and 8th grade determine promotion to the next grade level. The school does not offer Algebra I to the eighth graders.

The new Georgia Performance Standards (GPS) were implemented in sixth grade during the year of this study and, according to the Georgia Department of

[9] In Georgia, students are eligible to maintain enrollment in the regular secondary program unless they attain the age of 20 on or before September 1. Special Education students are eligible to maintain enrollment until they reach their 22nd birthday.

Education web site, will extend to seventh grade at the beginning of the next school year and to eighth grade in 2007-2008. Because he teaches all of those levels, Mr. Glover was the first of Mayfair's teachers to attend a GPS workshop in anticipation of the change from the Quality Core Curriculum (QCC) to the GPS for mathematics.

Thomas Banchoff of Brown University held a Geometry workshop in Athens, Georgia, during the time this study was underway, and although Mr. Glover was not able to attend, teachers from several districts in the state were able to participate. One topic of discussion was the ways in which they were trying to coordinate their efforts to draft lesson plans, unit plans, and timelines for instruction under the new program. There was a considerable, and nearly unanimous, feeling that the state could have done more to facilitate the implementation of the GPS curriculum and that there was an inexcusable duplication of effort as schools and districts each struggled to generate their plans. These complaints were made by middle grades teachers who had colleagues with which to collaborate and confer. At Mayfair, Mr. Glover is on his own — responsible for the changing curriculum at four grade levels — and he does not intend to generate written lesson and unit plans for the new standards at these grade levels.

> … With the amount of money they spend on paper to print all this stuff and give it to everybody, they could have hired a staff to do this… The way the GPS is set up, I know I have to do this objective, this objective. But I gotta' go write all of this stuff out? I don't have time to do all of that. I've got to be teaching the kids. You want me to teach them this, then I've got to have time to work on it. In order to teach them this, I already know that some of them

are going to come in here and not understand what I'm talking about. So I have to say, okay, how do I give them this? I can sit there and figure out what I have to do to get my point across, but I don't have time to sit down and write all of that out. While I was writing that, I could have been working with that youngun' and so, you know, it's just a lot of paper work. A lot of busy work…

We have the I CAN Learn® lab…it's all computerized… I supplement with the computer. So what I did was I went to the GPS website and looked at those standards. For me, being a teacher means that you have to pull from somewhere else all the time because somebody isn't going to get what you're trying to teach to them. And so before I would place them on the computer, I would find everything I could possibly find. I would teach it to them, and I wouldn't let them take any kind of test until I was sure that they understood what was going on. So if it took me a week, then I feel I had to do it. The first thing they do is take a pre-test. If they made a 100 on that, fine, they mastered that objective, but if they miss one problem, it would stop and teach the lesson to them. The same thing I had taught them. It just reinforced everything that I had already said, so they had a chance to go through the lesson twice. If they fail the final test at the end, they go back through it again…

Another issue addressed at the Banchoff workshop was the discomfort that many middle grades mathematics teachers feel about the mathematical concepts that have migrated into the middle grades curriculum under the GPS. Mr. Glover echoed their sentiments as he described his experience at a workshop he did attend:

> I went to a workshop in Augusta, and what we were doing, I was like, what's going on? The way they presented it made it so complicated...and there were teachers who wanted to take over the meeting. They wanted to talk about everything under the sun besides what we were supposed to be going over — trying to show everybody how smart they are. And you're just sitting there — you already didn't know what was going on — and they're talking about something that doesn't have anything to do with what we're supposed to be doing, and you're just sitting there for fifteen or twenty minutes before somebody finally says, let's get back to this right here... . A lot of that stuff was new to me…here in Mayfair, we don't have schools where you have maybe six middle school math teachers. See what I'm saying? There's only one person. So if I'm at a school with six math teachers and one of us doesn't catch onto something, somebody else might have caught onto it. So I don't have that pleasure, and I'm trying to learn all of this stuff at one time. And they're saying, tomorrow or the next time we meet, bring a sample of this and a sample of that, and I'm like, hold on, hold on because I'm there by myself. It became overwhelming.

Mr. Glover believes that his students need regular reinforcement and review of the concepts, and all of his classes utilize a program called Mountain Math[10] for that purpose. Most classes use the program as a warm-up at the beginning of class or as a final activity at the end of class. It includes a bulletin board display and a multitude of problems that involve a wide range of mathematical topics, and there is a

[10] For information about Mountain Math, go to http://www.mtmath.com/forum/mtmath.php.

different bulletin board set for each grade level. The Mountain Math web site describes its program as one that should be used throughout the year to help students review previously acquired skills. Mr. Glover has the largest mathematics classes: 18 fifth graders, 11 sixth graders, 14 seventh graders, and 24 eighth graders. The eighth graders are in a Pre-Algebra class. Mr. Glover often uses Mountain Math to facilitate dividing these groups, especially the eighth grade class, for instruction:

> …So they come in there, and you figure out that they do or don't know these things, and that is how you divide the class to start out. Now, you don't leave them in those groups because you always try to allow some room for them to change groups. That gives them some added motivation. I have to go back and forth [between the two groups]. I've got one group now that when they first come in — we do the Mountain Math — so when they first come in I might say, okay, group A, you work on Mountain Math, and group B, y'all get out your homework. I had an extra board put up on the back wall so I wouldn't have to talk across group A to talk to group B. So I can work with that group, and so while Group A is working on their Mountain Math, while they're working on that, I can introduce a new lesson to Group B. And then I can go work with Group A and have Group B start working on their Mountain Math.

An interesting thing about Mountain Math is the format in which it is presented. For each grade level, there is a bulletin board poster with 24 sets of numbers. Sometimes, the numbers are in equations, but often there is just an array of numbers, say, 1, 2, 3. Each worksheet asks different questions about the numbers, and

Mr. Glover used both the Mountain Math worksheets and worksheets that he has generated. Suppose "1, 2, 3" is the entry for #6 — one worksheet might say, "#6 - add the numbers." Another might say, "#6 - multiply the numbers." Later the task might be, "#6, using all of the numbers, can the numbers be combined in any way to generate a value of 5?" An eighth grade class was determining which 3-number arrays (from all three bulletin boards) could represent the sides of a triangle. Although the manufacturer claims only that the program should be used throughout the year to help students review previously acquired skills, Mr. Glover is able to use it to help his students acquire new skills and to stimulate mathematical thinking.

Mr. Glover uses an interesting classroom management technique during much of his instruction. His classroom does not have individual student desks, and the students are seated at two tables that extend the length of the room. The classrooms at Mayfair School are smaller than what is normally required — because of the small numbers of students expected at each grade level, one of the provisions of the charter enabled the school to have lower construction costs by allowing smaller classrooms — and because this room has to have seating to accommodate this one class of 24 students, it is somewhat cramped, and walking around the room can be difficult. Each student had a small white board (white on one side, graphing grid on the reverse) and displayed his or her work by holding the white board up for Mr. Glover to see. Without having to make his way to each student's seat, Mr. Glover could quickly ascertain who was "getting it," who was struggling, and who just needed a little more time. He could see who had a different or interesting approach to the problem at hand and was able to engage those students in a discussion about their work. Similarly,

students could share their work with each other, without actually going to the board and spending several minutes copying their work to the board. This seemed like a very efficient system — the students enjoyed working on the white boards, and Mr. Glover could confidently move ahead without having to worry that someone was being inadvertently left behind.

Mr. Glover's students were not only attentive but enthusiastic about whatever they were doing. It is difficult to say whether the source of their enjoyment was the mathematics, the white boards and colorful markers, or their energetic teacher, or some combination of those factors. A common teacher lament is that their students are not willing to struggle with new material, but Mr. Glover felt that his students were usually willing to put forth quite a bit of effort:

> Yeah, I think they really try. One of the biggest things I see down here is their ability to recall the information. That's one of the biggest problems I see for the 5th, 6th, 7th, and 8th graders. Now the 5th graders I had last year, I told you I rode them a long time. They came to class and I told them, okay, we're going to do geometry because they scored low on the geometry section the year before. And you know, I didn't have a kid who could do the geometry section. You don't know how many times I had to type that practice test! And I told them, if we don't get 70% passing, we're going to start back over this again...and we worked on that geometry section for four or five weeks. But when they took the CRCT, nobody failed that part. Nobody. But it was a lot of work. I had to find a lot of ways to present the questions to them…

In one of the classes I observed, Mr. Glover was reviewing vocabulary words with the eighth graders. Rather than reading a definition and having the students write the “correct” term on their white boards or calling out a term and having the students write a standard definition, he would describe a concept by using objects that were familiar to the students, or he would name a familiar object, and the students’ task was to write down a mathematical term, an example, or a description of the object, using mathematical concepts and terminology that might be associated with the object. For example, at one point, Mr. Glover asked, "What kind of lines are in front of the courthouse?" and the students wrote on their boards, and one of them volunteered verbally, "Oblique parallel lines! I know that one, I know that one!" On most of the white boards, the students had not only written “oblique parallel lines” but had also drawn sketches of the parking spaces as they extended from the curb.

When I asked Mr. Glover about this later, he explained that if they had seen something and could relate the mathematics to it, they could often remember the concepts and then they could learn to visualize geometric figures, which helped them understand the properties of the figures. He said that in the lessons on polygons, he had used street signs, advertisements, corporate logos – anything with which his students might be familiar.

Mr. Glover spoke often about making connections between mathematics and the lives and experiences of his students and stressing opportunities that might be available to those who excel in mathematics.

> I talk to them about acting right, about what they're going to do with the rest of their lives. One kid told me, "Haul logs," and I told him my daddy used to

haul logs. I asked him what he liked to do, and he said he liked running the saw, and I said, "so you like getting out there and getting all dirty." He said, "Yeah, yeah." And I said, "Have you ever thought about learning to do the math and having somebody else work that saw? You be the boss, you sit behind a desk, and make sure the money is all right, and then if you want to, you can go out there a couple of times a week and work the saw, do it." He said, “I never thought about that.” And I said, “yeah, man, maybe it’s something you ought to check into.” I talked to him about taking some business courses like management and accounting; going to school. I was trying to ease that in there so he might think, well, maybe I ought to stay in school even if it’s only Athens Tech.

And there was this other kid — he was big on cattle. He was talking about cows, and so we were doing conversions — quarts, gallons, and stuff like that — to figure out how many quarts were in a gallon. I asked him how many quarts he could get out of a gallon of milk since he was talking about cows. I told him, “You do that for me, and I’ll have something for you tomorrow.” I had a bag of potato chips. They like doing things like that...sometimes I’ll get the sales flyers out of the paper and we “go shopping.” Two of these, three of those. That was my way of teaching them to really think about adding and subtracting, multiplying fractions, and, you know. Here, the class sizes are small enough that you can talk about things they know about. We can do those things while they're here.

Mr. Glover welcomed parents to his classroom but said he had few takers — many people would find it surprising that *any* parents, including Mr. Glover's father, actually came to the school to sit in on their child's mathematics class:

> …well, we do have a couple of parents that might come by. There's one little girl that was sitting over there, her dad, when she first got to sixth grade, he always came to check on her. And I told him, you know, "Come sit in," and he'd sit in a couple of days...I had one other parent. She came in and sat in because her son, he just couldn't get organized. You'd try to help him get organized, but the next day his notebook and his book bag were just like they were before you started working with him!

When asked about homework and assessments, Mr. Glover said:

> After a while, you know who knows what. I save a lot of time when it comes to assessments. With my fifth grade, what I've done this year is I've split the class – they talk about that, differentiating instruction, but I did it because that's what I needed to do. Here, the class sizes are small enough that you can talk about things they know about....We might spend a whole hour – work on it, work on it. But there's always somebody that won't know what's going on. So, when I give them a homework assignment, I don't have to give them 50 or 60 problems to figure out that they don't know what they're doing, and I don't have to give them 50 or 60 problems to figure out that they do know what they're doing. So, here's your 10 problems. Try it. And when they come back, we go over every problem. And it's easier to do it like that – not put a number

or letter grade on their homework. By the time they get home, they've always forgotten something, so just for them to try it, to show their work...

On the ongoing effort to raise the CRCT scores in all four of his classes, Mr. Glover had this to say:

> ... last year, I did the after school program,[11] and what I did was I requested to keep the fifth grade. And I worked with them. And they got "bad," and they didn't want to — they were like "I'm not comin' to the after school program." And I was like, "It doesn't matter, when you come back in my class the next day, we're going to do it again!" So, they didn't want to come, but I had to be that way because if I don't, then they're not going to remember any of it. It was, like, well, "Can we go outside today?" And I was like, "When you learn what we're doing right here, then we can go outside. Until then, you're going to stay right here, and we're going to do it until we get it right." And, you know, somebody's always, like, "You're mean to me; you're mean!" I'd say, "I ain't mean; I just mean what I say." At times, I hate to be that way because, here, you don't know what they have to go through when they get home, but many times, I like being that way with them! I can get more out of them that way, you know, so the big change is that when I got those seventh graders that did well on the test last year, I got them when they were sixth graders. And I had gone down to the fifth grade [before I was the fifth grade mathematics teacher] and worked with them some then. So they saw me, they already knew

[11] Mayfair County School has an afternoon program that includes tutorial sessions.

me before they got to the sixth grade, and it was easier for them to understand me, and I knew some of their parents. That helped.

Let me elaborate on that. This is my fourth year here, and to take you back a little bit — when I first got here, they showed me the test scores, and I saw 29%, and I was like, okay, 29% of the kids are failing the test. This will be easy. But then I saw the kids that came to me, when I first started working here, and I was like, I don't know, that might not be right. So I went back to the office and I talked to Ms. Wise, and I asked her, "Is this the number of kids that passed or the number of kids that failed?" and she said, "That's the percent that passed." I was like, Whoa! So that first year, I got the test scores up 30 percentage points, so we got to 59%. But once we got to 59%, it seems like things just kind of leveled out. So we got into a rut there, and I tried to find out what they were doing at the lower levels. I think [the seventh graders are] going to be all right. The thing we're looking at now is that when they get to the eighth grade, you know, they think they're about grown. And that becomes a problem. A major problem. They don't want to listen; you can't tell them anything. If you say, "Do I need to call your momma, or call your daddy?" a lot of them will say, "She ain't gonna' do nothin' no way." or "My dad don't even stay with us." I get that. Last year's eighth graders — we had a couple of really bright kids in that class, but you have a couple of kids that were lazy. They were just lazy. Now, they could do the work, but they chose not to. So, they pulled the scores down. As a whole — it makes the whole thing look kind of bad, you know, because of only a few kids because we're

so small. That hurts a lot. And they're going through some changes now — the social part of it. Everybody wants to be, you know, at that time in their life, they want to be a part of the high school, and it ain't cool to be walking around doing your work. That's the way they see it. But, you know, the way I see it, it's just a couple of kids that would fail the test and make the scores go down.

Mr. Glover continued, focusing on additional challenges in his mathematics classroom:

Some will be in Mr. Drew's class, and some will be with Mr. Restor. I'm not sure how they go about placing them. It might just be scheduling. I try to go in depth, some times it takes a little longer than expected. I try to make sure I have the QCCs covered. Like with the integers — they've already seen integers before when they came through sixth and seventh grade. So it doesn't take as long, but you still have to hit those things just in case. But the way the school system is down here, where we go year round and you get five weeks out, if you were taught something, you shouldn't forget all of it in just five weeks. If you forgot all of it in five weeks, then there's something wrong — with that particular individual or somebody didn't do what they were supposed to do. So I look at those things. The first thing I try to take into consideration is okay, I go back [to the teachers at the lower levels], "Did you all cover this and this and this?" Not to lay blame, but just to make sure, and when the kids come to me and I start going over that and they say, "man, I

don't know how to do that," I say, "yeah, you went over it. You've been taught this so come on now, let's get together." 'Cause sometimes they do that just to kill some time, 'cause they don't want to do it.

Well, when we got to the fractions, I had kids who were having trouble. Before I could actually get into fractions, the operations on fractions, I wanted to make sure they knew what a prime number was, what a composite number was. I wanted to make sure they knew how to do prime factorization. I wanted to make sure they knew how to convert a mixed number to an improper fraction and an improper fraction to a mixed number. I wanted to make sure they knew how to rename a fraction. So all of that stuff had to be taken care of. I wanted to make sure they knew the divisibility rules. Just knowing the rules — I was going to show them how to apply the rules when we started actually doing the operations. So I wanted to make sure they knew all of that. Now, when they get to the fifth grade, the divisibility rules are like 2, 3, 5, and 10, and they do prime factorization and know about prime and composite numbers. See, they should have already been exposed to that before they got to me, so I shouldn't have had to spend a whole lot of time on that, but you know how teachers are – every time they get a new group of kids, they say they have to start all over, and some times they do have to do that. … And the kids at those lower levels, my personal opinion about it is that they need repetition. They have to learn how to do these things. Like the kids you saw today. Now if we had just split the lesson up and said, okay, we're going to do integers today — we're going to add integers. Fine. They do repetition.

They get the hang of it, and then we do subtraction. They do the repetition. They get the hang of it. But when you throw them all together, then it becomes a whole different ballgame. By the time the kids get to middle school with me, and I'm showing them how to do the order of operations — they have add, subtract, multiply, and division and then you've got exponents, and you've got parentheses and your brackets, and they're, like, Ohhhh! It's a whole new world to them.

We have a situation where some of the teachers like to teach, at the lower level, they like to teach what they're comfortable with — so they have a tendency to teach certain things and not venture into the things they're not comfortable with. So they teach what they're comfortable with, and they don't teach what they should be teaching at that level. My thing is that you follow the state QCCs, only teach what's set aside for your grade level. You don't have to venture into anything else — just teach exactly what you're supposed to teach at that grade level….When they get into fifth grade, and they come to me for math, they're supposed to already know how to add and subtract fractions with like denominators, but since you didn't venture into adding and subtracting fractions with like denominators, then when they get to fifth grade with me, my objectives say they have to add, subtract, multiply, and divide fractions with like denominators and add and subtract fractions with unlike denominators. But you haven't shown them how to add and subtract like denominators; therefore, I have to go back and teach them how to do the like

denominators before I can teach them how to do unlike denominators, which might take five or six weeks, taking away from what I'm supposed to do.

Mr. Glover felt that his primary job involved strict adherence to the state-mandated concepts and standards for each grade level, and Ms. Masters, the curriculum director, echoed Mr. Glover's sentiments that for testing purposes, the teachers need to teach just what is specified for their grade levels, but she noted that there needs to be an emphasis on problem solving because there is "much more problem solving than computational work on the CRCT."

Mr. Glover, more than the other mathematics teachers, was under the gun in terms of accountability, even in regards to the graduation test that the students take in their junior year:

> They put a lot of emphasis on getting the middle school up to par, but it seems like they're beating up on the middle school and not looking at anything else...like the graduation test. It's eighth grade math. Think about it. Some high school teacher says, "These kids don't know fractions, and that's why they messed up on the graduation test, and they didn't learn fractions in middle school, and the middle school teacher didn't teach them fractions." Think about it. When a kid leaves eighth grade, it's going to be three years before he takes that graduation test. We go into depth on fractions in the eighth grade, but they haven't seen fractions in depth in three years, and one of those years, they probably didn't take any math at all. So they ought to take that into consideration. I've had kids come in and tell me that everything I

> taught them was on the graduation test. And I say, "I tried to tell you," but at that age, kids don't see that as important. They don't even think about it at all, but then three years later, there it is, surfacing again, and they're like, whoa!

Mr. Glover occasionally uses nonstandard problems, defined as those for which the students have not previously developed algorithmic methods to find solutions or those for which there may be more than one reasonable solution, "as extra credit, or maybe for motivation, maybe give a little prize whether they get it right or wrong — just for attempting to do the problem," but he believes in traditional instruction that includes a lot of repetition and algorithmic competence and in which teachers concentrate solely on the skills and concepts required of the students at each grade level. He compares the process of successfully learning elementary mathematics to that of learning to play a position in baseball and points out the need for constant drill and practice in order to develop the skills necessary for success on the playing field.

> …you're designated to be my shortstop for the whole season, you're going to be there the whole season, and you ain't gonna' play any other position, so get used to it. So he's taking the reps, the grounders, throws to first, 125, 125, every day 125 grounders…, get it, put it in the bucket. Feel it. Step, throw, look at him, step, throw. Every time. You train him to be a well-oiled machine. You cannot wake up in the spring and say, "I think I'll go play baseball." No, this is a growth thing. It happens over a period of time. You have to work at it.

And Mr. Glover works at the craft of teaching. He talked about finding activities on the Internet, finding mathematical objects and ideas within the experiences of his students, and adjusting his lesson plans whenever necessary to fit the needs of his students. He was well-prepared for each class — class started as soon as the students were in the room, and there was very little time lost between activities; but as brisk as the pace was, there was never a feeling that anyone was being rushed. When students had questions or were hesitant in whipping those white boards up into the air, Mr. Glover took as much time as was necessary to identify the source of confusion and help the students resolve the difficulty. He clearly loves teaching, and he enjoys watching his students connect to the concepts and ideas that he introduces to them, but he worries that some opportunities are lost:

> … when you're teaching 5th, 6th, 7th, and 8th, that's a lot. That's more than a lot. If I just had to deal with that one grade level, I could grab 'em, but when each class comes in, and you're having to change, to do something else, and then the next class, you have to change to something else again — although it's good because you get to see those same kids over the years. But to have enough energy to do what you need to do with all of those different ability levels, by the time your day is over, you're just...like, you know. And you don't have time to really — you just think, okay, we did this today, and now we've got to do this, but sometimes things change, no matter what you have planned, and you gotta' go with the flow and make adjustments. Right there on the spot….

Mr. Glover shared with me the fact that he was being recruited by a nearby school district, and that he was seriously tempted to make a change — not only because of the teaching load but also because of his frustration with the school's athletic program. The youngest child of nine, the son of a pulpwood cutter, his family's socio-economic status was similar to that of most of his students, and he knew that he might never have gotten to go to college had it not been for his baseball scholarship. He believed strongly that the school should make every effort to provide every sports program that a small school could support. The same dedication that he displayed in the classroom was evident in the efforts he had made to that end:

> …and over there I'd be teaching just 8th grade math. For over a year, I've tried pushing the idea of a baseball program here. I even went down to the old softball fields — you go through town, it's out a ways. I went out there and measured the field...we could get 315 feet — that's pretty decent. We'd just need to get a high fence. A couple of the guys that I play with have their own fencing company, and they said they were willing to come down here and work on the field. Do what they can do. And the commissioner of the league said his brother is the store manager of Play It Again sports in Athens and he said he could donate some equipment and stuff like that to help get us started... So I've been networking. Some of the guys who played at Georgia said they were willing to come in and help work with the kids. But I don't know...

Mr. Restor

Although Mr. Restor, the department chairman, was gracious enough to be interviewed at length, and he was candid and honest about his experiences at Mayfair County School, he was not comfortable with having his classes observed for this research; and it was difficult to catch him in the act of teaching. It seemed that his classes were often taking a quiz or a test or doing some other individual or small group work that did not require their teacher's active participation. The students seemed comfortable with the idea that much of their class time was spent working on such things, dispelling to some degree my suspicion that my presence was altering his instructional style. When asked about the volume of assessments, Mr.Restor reported, "If you add [quizzes and tests] together, I do a lot of assessment. That's the only way for me to know if they know the material." Such an emphasis on formal assessments would be in line with his belief in "work, work, work."

When I was able to observe instruction, his classes were conducted in that same conversational format that I had observed in the other teachers' classrooms, and Mr. Restor's students were comfortable discussing their work, their errors, and their uncertainties about new material — although none of the mathematical discussion strayed far from clarification of algorithmic procedures. Mr. Restor stated that he does not use nonstandard problems or exploratory lessons or activities, and his students did not seem particularly interested in investigating mathematical concepts — most of their questions were "how" as opposed to "why" questions — but he said, "I do everything, whatever it takes — pairs, cooperative pairs, groups, all of that" to

encourage his students to be actively engaged in learning mathematics together, and there was an indisputable feeling of group support in his classroom.

Mr. Restor's students were very purposeful in their questions, and very focused on the material at hand. I never heard any of them ask a question that would have catapulted the class into an off-topic discussion, but they answered each other's questions, discussed the concepts, and turned to Mr. Restor primarily for affirmation about what they were saying. It seemed that many of his students might have enjoyed exploring some deeper mathematics if Mr. Restor had nudged them in that direction, but, at the same time, it seemed that if the classroom discourse had started to veer off into the unknown, Mr. Restor would be ready to go with it. Perhaps they would have been off into the unknown had I not been there making Mr. Restor nervous!

I was able to see another side of his instructional style when he was working with the enrichment class, which he team taught with Mr. Glover. For that week of intersession, there were no tight time schedules, no set curriculum, and students and teachers alike had a much more adventurous approach to the mathematics. In the lessons with the graphing calculators and linear functions, Mr. Restor constantly challenged the students — "figure it out," "what do you see?" and "what does that mean?" — and the students were encouraged to develop their own understandings, a process which often involved a few side trips into mathematical territory that was interesting but not essential to the task at hand.

Mr. Restor found it somewhat frustrating that most students came into his Algebra I classes without a better understanding of basic algebraic concepts. He did not, however, indicate that his Algebra I students were lacking in the understanding

of any fundamental mathematical concepts. He stated that he rarely made any attempt to connect school mathematics to the mathematics that his students might use outside of school because he did not feel that they had much experience with real world mathematical tasks. With no part-time or summer jobs available to them, and no shopping malls nearby, they did not have many opportunities to learn about commercial financial matters, including concepts related to traveling, revenue, loss, profit, and breakeven points — concepts that are routinely used to explain rates of change and systems of equations. Few of them had cell phones and most were unfamiliar with the idea of base charges and variable cost for minutes. In fact, he said, the demise of food stamps (replaced by the EBT electronic benefit card) had essentially eliminated the only mathematical activity that many poor children have:

> You'd get to go to the grocery store and count out the food stamps. It was a big deal to be in charge of that. When you got a little older, you could walk to the store by yourself, and you'd have to figure out which items you could buy with the food stamps that you had. That's how I learned about mathematics…"

All of Mr. Restor's classes were small, with five in Informal Geometry, six in Algebra I, and ten in Algebra II. Having observed all of the mathematics teachers, I realized that there were no students taking any mathematics classes that were not traditionally considered to be college prep track courses. The Charter documents stated that college and vocational tracks would be available for students, but Mr.

Restor explained that the mathematics curriculum is evolving into one track, except in rare circumstances:

> If they pass Algebra I, we'll try to keep them college track. Well, we're not giving them that choice. We just tell them what they're going to take. If they pass it, they're going on to Geometry… If they fail Algebra I, then we'll deal with it. Like I had some to fail it, and they were put back in that college track class again. If they continue to fail it, then we'll give them the applied classes. But, my understanding is that the double track is going to get weeded out anyway. Once we get into the GPS and all that, it's going to be just one curriculum. That's 2008. Math, it's going to be a challenge to do that — that's going to be a challenge, for them to get that one track thing and get a quality education for all kids taking that same class..., but I went to a seminar where the speaker said that … they made their kids all take algebra, in eighth grade and ninth grade, and their scores went up. And so I bought into that, and I thought if we did the same, even if they fail or barely pass, they'd get some knowledge of what is required to pass the Georgia high school exam...I think we're going to see it, the fruits of our labor, with this year's GHSGT [note: 100% of the juniors passed the 2006 test].
>
> So all the ninth graders here are taking college prep Algebra. All of our ninth graders. I convinced them that all of the ninth graders should take the college prep algebra, or at least attempt to take it. You have some that are border line special ed, or even special ed – I don't know if they took it or not. I haven't seen them, and I don't know if Mr. Drew has seen them [note: Mr.

> Drew does have at least one special ed student in one of his classes] ….Well, the tenth graders are kind of split. There are some tenth graders taking Algebra, but most of them are taking Geometry. That's what the hopes are, that most of them will be taking Geometry. Well even with them, I incorporate the Informal Geometry. They don't have to deal with the proofs, but they struggle with it. They struggle, especially when they have to start applying it.

In the discussion with Mr. Restor about students who might have been unable to successfully complete the college track mathematics courses, he said:

> They're probably trying to catch up. They're probably taking Applied Math I or Applied Math II – you know, applied problem solving. Mr. Drew — he has been teaching it... Some of them...I don't know if they've taken the Applied I or II….If I had my way — well, [For the kids who were not successful taking the traditional Algebra I course], I think Applied I should be the first half of Algebra I and slow it down for them, and Applied II should be the second half…. Slow it down, and then …the third math would be the Informal Geometry, and then that would give you all you need.

During the semester of this study, the highest level mathematics class offered at Mayfair School was Algebra II, and Mr. Restor felt that for those students in Algebra II, "going to college is in all of their minds...I think they'll be able to go to some college."

In previous semesters, there had been Precalculus classes, and one student had taken a Calculus course. In response to a question about the lack of upper level courses being offered, Mr. Restor explained:

> Last year we did. The only reason that Algebra II is the highest course this year is the seniors this year, one year they doubled up — they took Algebra I and Geometry all in one year, and then they took Algebra II in tenth grade. And so last year they took Advanced Algebra/Trig. So they had their four math credits. I thought we were going to have a Precalculus this year, but it didn't work out. I had one student that I taught before, I had her for Calculus. I think that worked out well.

One graduating senior, however, stated that he would have taken Calculus, if it had been offered; and there could be others who might have been interested in taking more advanced mathematics courses, even beyond the four that were required for a college prep diploma.

Technology for Mathematics

All of the mathematics teachers, and others, expressed some dissatisfaction with the scheduling difficulties encountered by a small school with just a handful of mathematics teachers and a block schedule. As stated in the Charter School guiding principles, the school was to "establish a technology based curriculum, designed to facilitate the intellectual, emotional, physical, and employability needs of our

students," and one solution to the scheduling problems might be to provide distance learning courses in mathematics and/or other core areas.

The school is very progressive, technologically, but there are no plans to have I-TV in the near future. In discussions about the technology at the school, faculty and staff are clearly pleased with the capabilities that do exist and have not ruled out the possibility of an interactive distance learning program. Ms. Wise discussed some other distance learning courses that had been offered in the past:

> At one time, Georgia was involved with virtual classrooms with, I believe it was out of Massachusetts, a company, and they were pursuing it, and then they just let it drop. To be involved in that, you had to have a teacher who could teach a virtual course, and then your students would be eligible for a course. This was in 1999 or 2000. But we did have a teacher who was qualified, and we got into it; but then Georgia let it drop completely. So then there were a couple of years with nothing, but now, the state has gone back to having virtual classrooms and offering some online courses. We did have an SAT course we taught online. Let me back up and say, because of our limited size, we have one high school science teacher, and last year, and I believe the year before, that teacher was knowledgeable about physical science and biology, but not chemistry and physics. We used a Georgia Public Television course in the classroom, so in a way it was a virtual classroom, but it was not a 2-way interactive course.

The School Improvement Plan for Mayfair's charter stated that "Virtual High School will be essential to our program…" The virtual school to which Ms. Wise referred was part of the Concord Consortium[12], an organization in Massachusetts that promotes the use of online instructional technology. The Georgia Virtual School is an online program developed by the Georgia Department of Education to provide opportunities for Georgia students to engage in Advanced Placement, College Preparatory, Career, Technical, and elective courses to enhance their learning experiences. Students must have the school's approval for registration, and they can take classes during the regular school day at no cost to them —but enrollment in those courses is limited for each school. Enrollment for a supplemental, tuition-based program ($300 per ½ unit course or $600 per 1 unit course.) is not limited per school[13].

Dr. Walton provided more detailed information about the physics course and the steps the media specialist had taken to investigate online distance learning courses for the school.

> In some of the core areas, especially in science and math, there is a need [for distance learning classes]. We looked closely at the Virtual School for the state of Georgia...Our media specialist attended several classes about that, and actually put together a program. We eventually decided to put that on hold. We did go with a physics program from PBS because we had, at the time, a teacher who was not certified in physics. We were very successful with this program. The teacher would facilitate the process. On a daily basis, the

[12] For information about the Concord Consortium, see http://www.concord.org
[13] For information about the Georgia Virtual School, see http://www.gavirtualschool.org/

> [online] instructor had classes, just like a regular teacher, and the facilitator-teacher had worksheets and tests to go along with the daily instruction. It worked out very well – it was pretty thorough.

The media specialist, Mr. Whitehead, expressed some reservations about distance learning courses, especially in terms of the costs and benefits to the school.

> I've heard two different prices. I've heard $600.00, for the Georgia Virtual High School, and then I've heard $3500 or maybe $3200, which sounded like a lot of money to me. Our school would not be able to afford that. That's per student. *Per student*. That's what kind of threw me off of that. One experience I had was with Virtual High School, which at that time was in Massachusetts. That's been six or eight years ago; however, that's currently operating. They use that some in [an adjoining county], where I also taught. And what you do there, there are chat rooms, and it's basically a web-designed delivery. In other words, there would be a series of web pages that the instructor designs, and there are assignment pages and links to research resources, but the teacher and the students do not come face to face…. I was hoping we could get a membership in the Virtual High School here when they first started bringing the students back five years ago, but the cost was prohibitive. The Virtual High School from Concord, I know that was $3500 at that time, and it may have changed since then We had probably two students who could qualify. It's very rigorous. You hear a lot of different things from different people, but I know from my own experience that the students are usually first rate – it's

almost like an advanced placement opportunity. Well, if you're going to spend $3500, then you have to make sure you're getting some return for those dollars. They usually enroll only the top flight students, and it's very demanding. The course work is very demanding — very stringent. It requires a certain amount of self discipline that not every student has because you have to do a lot of it on your own. Our school has wireless, broadband, and, I think, everything except whatever video hardware is needed for that interactive video system.

According to one of the focus group participants, some schools in the area do have interactive video capabilities, and James, one of the Mayfair seniors, felt he was ready for Calculus and would have been willing to take it as a distance learning course:

I'm going to major in business. Marketing. At this school I took Algebra II and Trigonometry. I transferred in tenth grade. I took Geometry in ninth grade, and they gave me credit for the Algebra I course I took in eighth grade. I took an honors class in eighth grade, so they gave me high school credit for that. Yeah, I would have [taken more math], but they didn't have any more advanced classes. Like, they didn't have Calculus like they were supposed to. More than likely, I would have [signed up for a distance learning course]…I did something like that at [my previous school]. It was from overseas somewhere. Ah. I can't remember where it — it was, like, a week. I think they were trying to get it started. It was just an experiment. I think it would be

> pretty easy to do. I would like to [take a Calculus course that way]. When we did it before, it was a lot of fun. That was some kind of social studies class. We were learning about the animals, I think it was in Australia, and the professor had the animals right there. I'm good in math…. I've already applied to Clark Atlanta and Morehouse. I'm waiting on the letters to come back…I had pretty good [SAT scores].

Mr. Owens, who substitutes and volunteers in several schools in the area, and has taught at public and private schools, talked about the technology he has seen:

> At Southside, we had some stuff like that [interactive TV distance learning], but it was for faculty, for in-service. I can't remember exactly, but they'd make every teacher have a certain amount of hours of in-service training, and that's how they did a lot of it. But I can't recall any high school students taking classes like that around here. I've noticed quite a few computers over there in Mayfair, and at Ashley, if you did a tour of that school, they've got computer labs all over that place…they've got Learning Logic for Algebra. I don't know what I think about [Learning Logic].

Overall, there is an impressive amount of technology available to the teachers and students at Mayfair County School, and they do not have to go down the hall to a computer lab to access the equipment. On Mr. Whitehead's wish list is a digital projector mounted in the ceiling of every classroom. The school does not have that equipment; but each classroom is fully equipped with computers for all of the students, and the entire building has wireless capabilities. Each teacher has a laptop,

and Mr. Restor described the response to his request for an up-dated model, "…when they realized I needed another laptop, it was only about a week's time, and it was here."

Mr. Glover was also impressed with the technology available for his students:

> … as far as technology is concerned, I think this school has as much technology as any school that I've seen or visited… When I started teaching, I taught in [another county] for eight years, and we didn't have, like, in the classroom — here my math classroom has thirty student centers and one teacher center. In [my former school], I only had one computer. The kids here, they can come in, they log on…

It does not seem, however, that students log onto any mathematics sites that engage them in anything other than traditional computer-based practice and review. Mayfair has Learning Logic on its computers, and at one time, that was the Algebra I course. Currently it is used as a supplement for students who are in need of additional practice and review. As Dr. Walton explained:

> We chose the Learning Logic program because our math teacher had students working in two or three subject areas in the same class. By using Learning Logic, he could put some students on the computer and better facilitate the two core subjects within the same class. It worked out well, but recently — last year we decided that we were not getting the results we expected and based upon that and discussions with the teacher and the leadership team, it was decided that instead of using it as a program, we would use Learning

> Logic as a supplemental teaching strategy to accelerate students performing at high levels and provide remedial instruction for students who comprehend better from computer technology. In a small school like ours, with only one teacher per core area, you need that supplement.

Mathematics in the Vocational Program

Some of the most interesting mathematics was not being addressed in the mathematics classrooms but in the tech-prep classrooms. Although the resources for vocational education are limited, there were still business education classes in which students were learning about spreadsheets and a health occupations class in which students were working with quantities of medications and conversions from standard to metric systems of measurement.

Ms. Nightingale, the school nurse, who is also certified to teach the health occupations courses, often emphasized the mathematics of nursing: how dosages for different medications are sometimes given using different terminology or measurement systems, necessitating conversions between metric and non-metric measurements. She stressed a nurse's responsibility for not only giving the right dosage but also catching errors made by doctors and pharmacy staff. Precision and accuracy, double checking, having other people confirm calculations — all are mathematical ideas within the context of nursing care.

The health occupations students completed a worksheet tracking the fluids going in and out of an imaginary patient for a 24-hour period to determine whether or not fluids were in balance. Ms. Nightingale noted that this was the first group at this

school to do these calculations without asking for calculators. The class I observed was the first of three semester-long courses, and upon completion of the coursework and passing a state-mandated test, students can receive CNA (Certified Nursing Assistant) certification from the state. During the courses, students are introduced to many health occupations (there are in excess of 200 possible careers!), and are able to see some attractive post-secondary educational paths that may have been hidden from their view.

The music director, Ms. Cass, despite her avowed mathematical limitations, used quite a bit of mathematics in her music theory classes, even if she did not admit to doing so:

> They learn to read rhythms, how to count rhythms, they learn the signs and symbols, the staff, what goes where, the pitches, the various types of notes, and the rests….I'm terrible at fractions! I'm terrible at math. The only thing I say about fractions, is that I say this is four-four time. It is not a fraction; it is a time signature. In math, it will look like a fraction, but in music it's a time signature. Just like a whole note looks like a circle in Geometry, but in music, it's a whole note. I break the time signature down, and I tell them the definition of the top number, that means there are four beats per bar, and the bottom number represents the quarter note and each quarter note gets one beat. And then I tell them that once they figure that out, then they know the value system on the staff. Sometimes they'll ask if the top number ever changes, and I'll say yes – 2/4, 3/4, 6/4 and so on. Does the bottom number ever change? Yes, but we're not going to talk about that, but, yes, it does

change, when it changes, it changes the whole value system, and we'll wait until we get to that point. Of course, it depends on the group – I've had groups that really got into theory. They were all these gifted kids who were into math and science and they liked figuring it all out…when we're working on rhythms, we work a lot on counting. Getting them to count, which is hard to do — getting them to count, clap, and tap their foot at the same time. They can't tap their foot and play at the same time. The coordination, I guess. But that's probably as much as I get into math, but I really stress the counting. Teaching them the rules. It's not continuous counting, of course, because you have to start over when you start a new measure.

It's high level thinking, but getting some people to understand that — just like, we're big on reading here. I mean, it's eat and breathe reading. And I told the administration that my kids read every day. And they said, "No, they're playing." And I said," No, they're reading. They read every day." And they're probably more disciplined about it than the kids who are not in music because they are constantly working on that skill, and they're having to do ten other things at the same time. They're multi-tasking: reading, playing, listening, counting, watching me, hopefully, sitting up — all of those things just to play one note. It's high level thinking.

Of course, the time signature not only looks a little like a fraction, when music students learn what a time signature means, what they are doing is very much like finding equivalent fractions. As the music director said, in 4/4 time, there are four beats in each measure and a quarter note gets one beat — four quarter notes would fill

up one measure, or maybe we could say that four quarter notes equals one measure. But so would many other combinations of notes: one whole, two halves, one half plus two quarters, and so on. In 3/4 time, a quarter note gets 1 beat, a half note 2 beats and the dot after a half note adds half of the value to the count, so a dotted half note gets 2+1 or 3 beats. It takes 2 eighth notes to make a beat. It is mathematics.

There were impressive displays of mathematical problem solving found in the vocational classes. In the shop class, the students were charged with building a gazebo for the senior prom. The gazebo was to be octagonal, about ten feet across and eight feet tall, and it had to be moved into the gym, through a set of double doors of standard height. The students built a model, determining the angles, the saw cuts required, and how the gazebo could be constructed in such a way that it could be moved into the gym and assembled there. They constructed both the model and the prom gazebo, and both were flawless.

The shop teacher, Mr. Hammer, was the instructor for the drafting class, too. Drafting requires utmost precision, and each of the students was equipped with a mechanical pencil, a compass, two drafting triangles, and a triangular scale ruler. One of the drafting triangles was a 30-60-90 triangle, and the other was a right isosceles triangle. Using just these two triangles, the compass, and the scale ruler, students were expected to draw all sorts of things, from telephone dials to engine parts, with precise angles, proportions, and distances. It was somewhat interesting to note that the students knew what a telephone dial was.

In another class with Mr. Hammer, students were introduced to technology presented as a smorgasbord of real-world applications. There were several modules

for the students to explore: alternative energy production, digital video production, digital sound technology, forensic science, computer-aided publishing, construction technology, electronics technology and communication, and biomedical technology. Mayfair also participates in the Cisco Network Academy,[14] and Mr. Whitehead is also the on-site facilitator for those courses.

[14] Cisco Network Academy is a four course certification program offered through the vocational department in collaboration with Cisco Systems, Inc. For more information, see http://www.cisco.com/web/learning/netacad/index.html

Chapter 5 – Summary, Interpretations, and Implications

The Research Question

This study focused on issues that might be summed up by posing the following question: How do the social, political, and economic factors of the rural circumstance influence the teaching and learning of mathematics? My objective was to identify and describe those factors that influence the mathematics program in a rural Georgia school; to describe that program, including but not limited to the curriculum, resources, teacher quality, and instructional methods; and to describe how mathematical growth is fostered in the students.

The data gathered in this study indicate that social, political, and economic factors in the community have had an enormous impact on the culture of the school, demanding that teachers and administrators give considerable attention to the social skills their students will need to be successful in post-secondary study and careers. These are critical skills, and without them, students will be denied access to many opportunities. The school has been remarkably successful in this regard.

Students are becoming aware that there is a world beyond the county line, and that regardless of their individual abilities and interests, there are opportunities to be explored. Two of the three mathematics teachers spend considerable time discussing with their students the ways in which mathematics connects to the "real world," using the students' experiences to make those connections, and all of the mathematics

teachers stress that excelling in mathematics can open doors to future opportunities. None of the participants, except Mr. Owens, the retired mathematics teacher, seemed concerned that the depth and breadth of the mathematics program at the school were limited. For most, the primary concern was that students would successfully complete high school and continue into college or technical school, and the teachers and other school staff were intent on developing in their students the basic social and academic skills that might be required for success in the kinds of educational or career pursuits that the teachers and administrators envision as most likely to occur.

I had expected to find a mathematics program than would include courses somewhat custom-tailored to the needs of the community — courses that would include elementary arithmetic, measurement, operations on fractions, proportions, ratios, percents, basic geometry, and data analysis. These are mathematical skills that all people should have, but they are commonly used by workers in agriculture, forestry, and construction. Each of these industries requires workers that have solid, but not necessarily advanced, mathematical skills.

I found those mathematical skills being taught — not in the mathematics department but in the vocational department, embedded in the drafting and construction courses. That is an excellent venue in which students can explore some fairly advanced mathematical concepts; unfortunately, there were no girls in any of those classes. The girls seemed to gravitate more to the business education courses, and although they worked with spreadsheets and basic accounting techniques, they really did not have the mathematical opportunities the boys enjoyed.

The mathematics program had essentially evolved into a college track program, and the traditional Algebra I, Geometry, Algebra II, Pre-Calculus sequence was the only option for the secondary students, with "vocational" students not required to take Pre-Calculus. There was an ongoing debate about what to do for the students who were unable to succeed in those courses, despite repeated attempts, but at the time of this study, there had been no decision made about that. There seemed to be some confusion about the new Georgia Performance Standards and a belief that the new state program was a one-track curriculum. Additionally, implementation of the GPS in the sixth grade had been more problematic than expected, resulting in disastrous test scores and continued problems with AYP.

The faculty and administrators at Mayfair County School were concerned about state and federal accountability, the implementation of the new Georgia Performance Standards, the renewal of the charter, and the selection of a new superintendent. None of the participants believed that any of these politically driven "realities" would enhance the educational opportunities for the students of Mayfair County; however, there was universal agreement that these political activities affect all of the members of the school community — but it was the future of the school itself, not the academic performance of the children, that was most often cited as a concern. In fact, participants rarely discussed the academic performance of the students except in relation to the system of accountability. The incessant search for curricula that align with the state tests, as opposed to the kinds of culturally-sensitive curricula that might be more effective in meeting the needs of this student population and which are more in keeping with the original intent of the school's founders, is an

example of the ways in which priorities have been rearranged in response to political pressures.

Methodology

This research stems from a framework of social constructivism, a perspective that embraces the idea that all knowledge is socially constructed. The research premise was that social norms within classrooms are a part of the larger community construct and that the social forces emanating from within and beyond the walls of the school are vitally important in the construction of the academic environment. This was a qualitative, descriptive study, using ethnographic and case study research methods — there are few facts or figures to examine, and those facts and figures that are included in the report are presented primarily to help the reader get a sense of those community attributes that can be reduced to a numerical representation.

Ethnographic research, in general, focuses on the identification of common cultural understandings, and because rural schools are often believed to be at a disadvantage, or oppressed in some way, the study took a critical ethnographic approach in that there was an effort to identify the ways in which these disadvantages might evolve and be perpetuated through some kind of systemic dysfunction. As case study research, the study emphasizes the contextual analysis of a limited number of people, events, and situations; and data for that analysis were gathered through observations, conversations with informants, and the analysis of historical documents.

Theoretical Framework Revisited

I began this research proclaiming that my epistemological perspective is one of social constructivism. Social Constructivism is an epistemological framework that supports the theory that individuals construct knowledge through interactions with their environment. In this section, I will elaborate on that perspective, particularly in relation to the data gathered in this study.

A fundamental tenet of social constructivism is that collaborative social interaction, rather than purely individual investigations, leads to cognitive growth. It may seem that when a student is working alone, in the classroom or at home, he or she is engaged in a purely individual investigation, but I do not believe that to be the case. The student may be temporarily alone, he may be sorting things out and trying to make sense of whatever it is he is doing, but the social norms and interactions of the classroom dictate how much effort will be expended on these tasks and what needs to be learned. I believe this is true regardless of the teacher's instructional style.

Teachers' personal theories of learning are generally thought to have considerable influence on their decisions about instruction, and a teacher's expectations for what outcomes are to be valued are directly impacted by the teacher's beliefs about student learning (Moallem, 2000). Ideally, the teacher in a mathematics classroom encourages more than the acquisition of rules and algorithms, and instruction should be designed to provide students with opportunities to search for meaning. If the teacher's expectations are limited to the mastery of rules and algorithms, and if classroom discourse is limited to "correct answers," then more

often or not, that is all that will be "learned;" however, it is still a constructivist classroom in that students are constructing their own knowledge and understanding of the concepts. I do not believe that students in such classrooms search only for those meanings that their teacher has "permitted" them to investigate, but rather that they formulate their own understandings about the educational process, the social interaction in the classroom, their roles in the social and educational production orchestrated by their school, and the purpose of learning mathematics — how and why it is or is not necessary or relevant to their lives and what purpose it might play in their futures.

Certainly, the mathematics teachers at Mayfair County School believed that their mission was more than just the teaching of mathematics, and they expected more from their students than can be measured on any mathematics test. They were creating a new culture for their students — a culture based on social and academic classroom norms, mathematical thinking, and elementary mathematical discourse. This culture is apparently quite different from the one in which the students lived when they were away from school, and in all of these mathematics classrooms, the goal in building this culture was to generate openness, exploration, and a shared commitment to learning, all of which are goals of constructivist teachers, and all of which I saw in virtually every classroom observation.

These were children who started school not knowing about forks, as the superintendent described their social awareness; and within a few years, they were eagerly sharing, discussing, and debating their mathematical knowledge with their peers, and they were open to the prospect of learning more. They were learning to be

students, and none of them could have achieved that without collaborative social interaction. With time, some of them might even become students of mathematics, but whether they do or not, their developing cognitive and social awareness is, for me, testimony to the viability of social constructivist theory.

Also at the beginning of this report, I asserted that this would be descriptive, critical ethnographic research and used a quote from Kinchloe and McLaren (1994) as it appeared on page 4 of *Critical Ethnography in Educational Research* (Carspecken, 1996) to describe that framework. In light of the data gathered in this study, it seems appropriate to discuss the assertions made by Kinchloe and McLaren and conclude with the development of a critical theory of education.

1) *... all thought is fundamentally mediated by power relations which are socially and historically constituted…*

In virtually every conversation, informants expressed their opinions about the power relations in and over the schools and how those relations had developed over time. They did not necessarily agree with the position taken by various policymakers; they did not have unanimous opinions about the social and historical significance of any event — they had constructed individual understandings of these things. But all of them were reacting to power relations that were socially and historically constituted. Such power relations could include the relationships formed by local, state, and federal policymakers; parents; faculty members; administrative staff; local employers; students; and people from the news media. Such relations represent control over the school, its policies, and its culture; in fact, the very survival of the school rests upon the exercise of this control, and as a result, the thoughts and deeds

of the “occupants” of the school; i.e., students, faculty, and staff, are mediated or influenced in some way by those power relations

In the preceding chapter, there may have been quotations that seemed unfettered by such influence. An example might be Mr. Drew’s discussion of his motivational methods:

> You do win them over with love. Ultimately you do. I can be hard-nosed with them, but I can get more from them the other way...This is more like a mission.... There's a lot of compassion...if you're a good teacher, you hit some kind of balance. If you don't expect them to do it, if you don't believe they can do it, you should find another job. Sometimes you do run out of steam, but you have to believe in them.

The reader may wonder how such a heart-felt description of a teacher’s dedication could have been influenced by any of the aforementioned groups or how his statements could be anything other than an expression of his personal belief. However, in this conversation, Mr. Drew was also discussing the situation with which he and his students are coping — a situation that has been created by the advent of the accountability system. Mr. Drew, who had previously taught in an inner-city alternative school for eight years, was considered to be very effective with “difficult” students. Among his students were the lowest level students, academically, and the least well adjusted, socially. He believed that, given time, all of his Algebra I students were capable of mastering the mathematical concepts required for success on the Georgia EOCT, but he was running out of state-mandated time. This interview was

conducted in March, the EOCT was less than six weeks away, and he had seen little evidence that many of them could possibly be ready. His assertion that, "You do win them over with love. *Ultimately* you do." [italics added] reveals his belief that with such students, time is a necessity, not a luxury; and developing the kind of rapport that encourages these children to take the risks involved in trying to learn is a necessary first step. The new accountability standards make time a rare and valuable commodity, especially for teachers of students who are challenged in some way, for whom taking the time to provide supportive instruction is of utmost importance.

2) *…that facts can never be isolated from the domain of values or removed from some form of ideological inscription…*

Much of the data collected in this study would take on different meanings in different social, political, or economic settings; therefore, it seems reasonable to say that "facts" cannot be removed from the context in which they are found. Informants provided information about the closing of the black school, the ensuing white flight, and the eventual consolidation with Leeson County, but much of this information could not be documented and, depending on the perspective of the speaker, took on various meanings. Mr. Owens said they had no real problems during integration, but Ms. Gerald related tales of protests by, arrests of, and violence against black citizens. The court records confirmed that there had been some arrests, but there was no record of black protesters' being arrested, and the assaults that were part of the court record were most often against news reporters and photographers from Atlanta, not fellow citizens. The Appeals Court transcript confirmed that a black citizen had been

manhandled and threatened with violence, but there was no record of the level of violence that was experienced in other locales.

The superintendent discussed the problem of "white flight," but the exodus of twenty or thirty white students to out-of-county schools would hardly qualify as white flight in most counties; and as Ms. Gerald pointed out, the self-selected demographics on government forms blurred the lines between black and white, making it difficult to determine who, exactly, had decided to have their children attend school elsewhere.

In 1978 the county was unable, financially, to meet state requirements to keep its school open, and middle and secondary students were sent to a consolidated school in another county. Twenty years later, with similar fiscal limitations, they were able to meet state-mandated requirements because the state of Georgia had enacted legislation in 1993 that made a charter school a viable alternative.

When we consider the context of time and place and the interpretations given by witnesses, each of whom evaluates what he or she has seen or heard, making sense of the "fact" as it exists within some personal framework of values and beliefs, it seems reasonable to say not only that "facts can never be isolated from the domain of values or removed from some form of ideological inscription" but that they derive much of their meaning from the social, political, and economic condition at the time and place of their occurrence.

> 3) *…the relationship between concept and object and signifier and signified is never stable or fixed and is often mediated by the social relations of capitalist production and consumption…*

This reference to Marxist ideology, which asserts that educational institutions contribute to the reproduction of the social relations of capitalist production through the correspondence between school and class structure, refers not only to interpersonal relations but also the common social characteristics of groups of people and how people are associated, socially and economically, with production. By making their students aware of the choices that can be made in their education and careers, by encouraging their students' autonomy, the teachers and administrators at Mayfair County School are making a conscious effort to disrupt that correspondence. In the process, some traditional relationships between concept and object have been intentionally altered — mediated, we might say, by the social relations of Mayfair County.

The concepts of *academic excellence* and *college* serve as examples of such transformations. Although the academic standards and performance of Mayfair's students reflect substantial improvement over the five years of the school's history, some informants were quite candid about what *academic excellence* means in Mayfair. In many high schools, tenth grade students who are described as having achieved academic excellence would be thinking about exclusive colleges, admission essays, scholarships, and the like. The Algebra II students in Mr. Restor's class were the top students in the tenth grade at Mayfair County School, and according to Mr. Restor, all of them were planning to go to college: " … all of them, those in Algebra II, going to college is in all of their minds...I think they'll be able to go to *some* college" [italics added]. Another faculty member felt that "… if you took our top students and put them over [in another county's high school], they wouldn't be top

students...” Mr. Restor, who often expressed concern about the limitations of a small community, compared the development of top students with that of top athletes:

> At this school, because it's so small, you're not going to have that ultimate athlete. You might have one, but — no you really won't have it. You have to think about what makes an ultimate athlete — their surroundings, there have to be other kids who are at least comparable to their talent for them to compete against. You're not going to get much better than what else is there.

Still, these tenth graders have achieved a level of academic performance that has been rare for Mayfair County students over the past two decades, and by local standards, they are excellent students. They and the current year’s junior and seniors look forward to attending college. But the concept of college, at least in Mayfair County, has been expanded. When the principal said that half of the seniors had been accepted to college, he was including not only 4-year institutions of higher learning but also community colleges and vocational schools that have no admission requirements. As the superintendent noted, few of the students or their parents have any concept of college, and the status of one institution or type of institution over another is largely irrelevant to most of the students and their families. By encouraging students to study at any post-secondary school in which their students might be successful, teachers and administrators are promoting a new concept of education itself and they are not inclined to differentiate among the many alternatives as they continue efforts to broaden the horizons for these children, for whom terms like

education, *work*, and *future* take on new meanings and provide access to different positions in "the social relations of capitalist production."

Where *education* once meant minimal literacy skills, it has come to mean developing an understanding of, and an appreciation for, literature, history, and mathematics. *Education* no longer culminates in an eighth grade graduation ceremony but suggests something bigger, something "out there," something that can provide confidence and security in the future. *Work* is no longer restricted to hot, sweaty, dirty, and dangerous jobs that involve sore muscles and diesel fuel but has been redefined to include what one does at a desk. *Future* has been expanded from later this afternoon, to several years from now; from dim to bright. By providing access to even a small portion of what used to be so far out of reach that it was virtually unknown, Mayfair County School is mediating the relationships between concepts and objects, signifier and signified.

4) …*that language is central to the formation of subjectivity (conscious and unconscious awareness)…*

Language takes many forms, and social meanings might alter our perceptions. In this report, I have attempted to give a faithful account of the social, political, and economic factors that have impacted Mayfair County, and this account has been based on the ways informants interpreted and related to me their stories, the history of the county, and their hopes for the future. I was unable to capture in words, for the reader, the body language, facial expressions, and gestures that often said as much as the informants' words. When Mr. Restor was describing the Mayfair students' lack of social skills at athletic events ("Meet and Greet!"), he provided an almost perfect

impersonation of a child sitting in the bleachers, discouraging any social interaction — eyes wide, knees and feet pressed together, arms folded, fists and jaw clinched. He hardly needed to say more to convey the image of a child who was terrified at the thought of meeting and greeting anyone from beyond an extant circle of friends and family. Although we might not always think of such physical representations as "language," they are, indeed, powerful conveyances of information and undoubtedly contribute to our conscious awareness of situations and relationships — our subjectivities are, I believe, formed in large part as a result of such awareness.

If language, whether verbal or of some other description, contributes to our conscious awareness; i.e., we form opinions and judgments in response to things we are told, what can be said about what we are not told? Specifically, what can be said about what we are not told when we do not realize we have not been told? Although "unconscious awareness" seems an oxymoron, I believe judgments we make in the absence of any information at all — judgments we are not aware that we are forming — constitute what Kinchloe and McLaren refer to as unconscious awareness.

In this report, I have had to reveal the racial identity of only two of 23 informants, Mr. Owens and Mr. Charles. I believe that active readers develop images of the people and places they are reading about, based on a stream of explicit and implicit information that is transmitted by the text, and judgments about the validity and utility of this information are developed in conjunction with the development of those images. The reader not only uses personal and individual subjectivities to build those images and interpret the information, especially that which is implicit, but also

to alter existing subjectivities and build new ones. What is not said can be as powerful as what is said.

I believe that our subjectivities are dependent on language and context; and, furthermore, that life experiences contribute to the formation of these subjectivities as we tend to interpret new experiences and information through associations with past experiences and previously acquired knowledge. The reader might consider his or her constructed images of the informants in this study and reflect on the messages received. Would the meanings be altered in any way if the speaker had been from a racial group other than the one the reader assumed? Did the reader make assumptions, based on assumptions about racial identity, about the informants' perspectives? If so, then language alone was not central to the development of those ideas — context and the reader's life experience had to have taken an equally central position in that development.

> 5) *…that certain groups in any society are privileged over others and, although the reasons for this privileging may vary widely, the oppression which characterizes contemporary societies is most forcefully reproduced when subordinates accept their social status as natural, necessary or inevitable…*

The history of Mayfair County School, including the closing of the original public schools, the consolidation with an adjoining county, and the creation of the charter school, is a story of such privileging, and within that story are subplots built around changes in privilege. I began the history of Mayfair with the civil rights era, including the Civil Rights Act of 1964, which represented an effort by the federal

government to require equal treatment for all U.S. citizens in matters of voting, places of "accommodation" (hotels, motels, restaurants), education, and employment. Although the legislation was clear as to its intent, the achievement of such legal equality was not assured and continues to be in question. The government cannot legislate attitudes.

Privilege refers to any advantage that one group has over another, whether that advantage is derived from social, political, or economic considerations, and that advantage is increased when those with less influence are unable or unwilling to object. When the Civil Rights Act was passed, federal government officials exercised their political privilege in dictating not only new rules for governmental activities and properties, specifically voting booths and publicly-funded schools, but also for private enterprise. This did not sit well with the "subordinates," private citizens and local and state officials, many of whom did not find their new status as enablers of federal government policy to be "natural, necessary, or inevitable."

Citizens found loopholes in the language of the statute that enabled them to exercise considerable freedom under the new law — freedom to maintain the status quo and whatever privilege they had previously enjoyed. Local and state officials redrew voting district lines and established assorted requirements for voters — literacy tests, proof of residency, and identification requirements have often been revamped to maintain white privilege. Hotels and motels continued to have no vacancies when black citizens tried to book a room; restaurants often became private clubs, or closed completely, rather than be included under the label of public accommodation. And private schools were established at such a rate that an

uninformed observer might have thought there had been a renewed emphasis on academic achievement.

In Mayfair County, white privilege manifested itself when, as Mr. Owens stated, "All of the white students in Mayfair were successful in withdrawing from the school," and, presumably, the black students were unable to do so. The exodus left the public school system in a precarious financial position as none of the white officials or landowners had any incentive to support the school with tax dollars. The black parents did not have the political experience or the financial ability — the privilege — to combat this withdrawal of support, whether or not they accepted it as natural or inevitable.

The consolidation plan, however, turned white privilege on its head as Mayfair County agreed to what turned out to be an outrageously one-sided financial plan, the school closed, and the local economy began to stagnate. From any social, political, or economic perspective, all privilege seemed to have been lost in Mayfair County. Fast forward twenty years, and privilege once again became the impetus for change. This time, however, that privilege belonged to a very small and diverse group who gained their advantage not so much by their political or social status as by their vision and dedication: the group included black and white teachers, attorneys, mechanics, bankers, truck drivers, parents, property owners, and welfare recipients. Their mission was to restore social integrity to the community, eliminate an unproductive financial drain on the taxpayers, and to confer upon the traditionally subordinate segment of the county's population the privilege that comes with education.

They used their privilege, much of it an amalgamation of educational, political, and social contacts available to support their vision and dedication, to create privilege in another group. Ironically, the group's privilege was strengthened by their target group's acceptance that it was normal, natural, and inevitable that someone would "take care of them." Little did they realize that with privilege comes responsibility, and, initially, there was some resistance when that became evident, as chronicled by those who had to explain graduation requirements to students who had been at the consolidated school and who did not see anything normal or natural about taking difficult academic subjects.

The jury is still out, but the data gathered in this study suggests that many of the students at Mayfair County School already enjoy one of the most important benefits of privilege — the freedom to choose the paths they will take in the future.

6) *…that oppression has many faces and that focusing on only one at the expense of others (e.g. class oppression versus racism) often elides the interconnections among them…*

Many people, seeing a predominately black rural community, automatically assume that any and all challenges faced by the residents are the result of racial demographics. In this study, informants acknowledge that the racial make-up of the county has been a factor in the social, political, and economic evolution of the community and the school, but they are keenly aware that the issues with which they contend extend far beyond racial concerns.

One informant, who initially thought this research was about black rural schools, was amazed that someone was doing research that did not focus on the racial

demographics of the school. Amazed and thrilled, she said, because there were so many other things to think about. In discussing the issues that face the school, the principal said, "…in the small districts. We all have similar issues and similar problems… staffing… the number of electives we can offer …an insufficient tax-base … I think the socio-economic status of the county may be more of a factor than the ethnic population."

And the superintendent painted a vivid picture of difference when she compared the privilege her grandson enjoys with the harsher reality experienced by many of the school's students:

> ….They don't know to sit to eat. They've never done that. Some of our kids don't know about forks. They don't know their numbers; they don't know their letters. I look at the difference between the children who come to school here, the majority of them, and my grandchild. He knows his numbers, his letters. He knows shapes — he can tell you what an octagon is. I didn't know what an octagon was until about fourth grade ... [the parents] work with this child. They read to him constantly. He is constantly doted on and taught and taken places to see animals and so on. These children don't have those opportunities…

7) *...and finally, that mainstream research practices are generally, although most often unwittingly, implicated in the reproduction of systems of class, race, and gender oppression.*

Since 1994, when this definition of critical ethnographic research was written, the concept of mainstream research practices in education has been expanded to include critical theory research methods. Perhaps, however, it was not the research that was the problem for Kinchloe and McLaren so much as it was the way in which research was (or was not) used. There seems to be a paucity of educators who use research to support and enhance teaching practice, and those who do "look at research" often look at only one study, and they do not always read the entire research report or consider the limitations of the study or studies on which they base decisions about instruction, curriculum, and assessment. At Mayfair County School, the mathematics curricula were generally chosen because there was a grant available to implement the program or because the creators of some curricular package had produced an effective presentation, often including anecdotal evidence of effectiveness or scant descriptions of research studies. If anyone at Mayfair had looked at original, independent research, they did not mention it.

A Critical Theory of Education

In developing a critical theory of education, I assume that most, if not all, societies experience some degree of economic disparity; cultural, religious, social, racial, or ethnic diversity; and that some segments of the population are privileged over others. I also assume that the *educational establishment*, which would include elementary, middle, and secondary schools; colleges and universities, including community colleges and vocational schools; teachers; administrators; teacher educators; educational researchers; developers of curriculum and instructional

materials; textbook publishers; educational foundations; and government policymakers at local, state, and national levels, has the power to alleviate or aggravate these conditions. If these assumptions were faulty, there would be no need for a critical theory of education.

To address the needs of such socially, politically, economically, and culturally diverse members of society, there has been in teacher education programs a growing emphasis on multicultural awareness, addressing the content as well as the process of education in terms of curriculum, classroom management, and teacher expectations. The Brazilian philosopher Ubiratan D'Ambrosio introduced the term *ethnomathematics* in the 1970s to describe the influence of socio-cultural factors on the teaching and learning of mathematics (D'Ambrosio, 1997), and the prefix "ethno" encompasses not only identifiable groups but also such groups' jargon, symbols, and ways of reasoning. Multicultural mathematics education requires the inclusion in the curriculum of the ethnomathematics of all ethnic and racial groups as well as the various socio-economic strata in society, including the practices and problems of the students' own communities (Zaslavsky, 1998).

In recent years, the Robert Moses Algebra Project[15] has received quite a bit of attention, and although much of Moses' impetus was his experience as a black educator in an elite private school during the civil rights era of the 1960s (Moses, 2001) his message applies to all disadvantaged children. According to the Project web site:

[15] see The Algebra Project web site at http://www.algebra.org/

> The Algebra Project seeks to impact the struggle for citizenship and equality by assisting students in inner city and rural areas to achieve mathematics literacy. Higher order thinking and problem solving skills are necessary for entry into the economic mainstream. Without these skills, children will be tracked into an economic underclass.

Like most critical theorists, I am concerned with the systemic failures in the educational system that cause such children to be "tracked into an economic underclass," and I believe that the educational establishment perpetuates an unconscionable correspondence between opportunity and social strata, discounts the value of cultural diversity, and fails to prepare and encourage students, especially those students who are not members of the dominant culture, to take their rightful places in society. By rightful place, I mean that place in which the student can experience the greatest possible success, by any definition, in our society and in our economic system.

Unlike many critical theorists, however, I think capitalism is a splendid economic system in all its gory competitive reality; and, furthermore, with an expanding global economy that privileges nations and cultures which heretofore have not been major players in capitalist enterprise, it is more important that ever to maintain the social and technical relations that are required for production but to do so without discounting cultural imperatives. A vibrant capitalistic system depends on production, of course, but it also depends on creativity, risk-taking, and a wide variety of skills, talents, and perspectives that are often embedded in diverse cultural

identities. And unique to a capitalistic system is the competitive desire to be "the best."

In an effort to become competitive with other industrialized nations in international competitions of academic performance, U.S. policymakers have decided to "raise the bar" — to elevate the standards by which all student learning might be evaluated. The bar should be raised, but not so that we can compete in international competitions of school children. The bar should be raised so that all students develop self discipline; a solid work ethic; pride in their achievements; intellectual curiosity; the ability to think, solve problems, and plan ahead; effective means of communication; an awareness of social, political, and economic realities; integrity; and an understanding of, and appreciation for, other cultures. None of these is directly related to any particular academic outcome, but all of these are supported by high academic standards, and all of these are necessary attributes for personal success, especially in a capitalistic economic system.

My issue with the current model of education is that "high academic standards" has too narrow a definition to accommodate the wide range of talents and abilities that children have and that such standards give credence and value only to the dominant culture's definition of achievement. When every child is held to these narrow standards of performance, presumably in academic subjects that have been deemed valuable by the dominant culture and primarily reflect white middle-class values, many children, who could or do excel in other areas or whose cultures have different value systems and who might have the potential to make unique and important contributions, are labeled as failures.

Certainly, all students will need to be able to negotiate within the dominant culture in order to achieve social, political, and/or economic success, and such negotiations require an understanding of the dominant culture's definition of what is valued; but I believe that schools have a moral responsibility to recognize and encourage excellence in all its many manifestations. The result of not doing so is that many students come to believe that they are somehow less valuable to society than others might be.

Educational research tells us that students who fail are most likely to come from backgrounds that are not part of the dominant culture; and when they fail, those students often become alienated from the entire academic system, a system that, for many of these students, already seemed irrelevant to their life experience. Students of privilege occasionally fail, too, but they rarely suffer the same consequences. In this way, schools perpetuate those oft maligned "social relations of capitalist production and consumption." But worse, they perpetuate a class system that robs people of the pride and satisfaction they should enjoy when they excel at those things they can do.

By the time they leave school, almost all students, not just the subordinate ones, "accept their social status as natural, necessary or inevitable" because they have been acculturated into a social, political, and economic system that arbitrarily rewards some abilities and discounts others. Those who started with privilege usually maintain that status, regardless of performance; those who were not privileged, but who were exceptionally successful in meeting the "right" performance standards, gain privilege; and the remainder are relegated to the same subordinate position from which they started.

Schools need to celebrate all abilities, encouraging each child to reach for his or her highest possible goals, not the same goals as everyone else. I do not argue that students should not be required to meet minimal levels of academic performance in the traditional core subjects, but each child has unique abilities, and the highest possible goal for one child may well be just the first objective for another. Within the current system of accountability, schools are required to provide evidence of their students' academic achievement and improvement in core content areas, and there is no explicit provision for differing student talents and abilities.

Because it would be abusive to expect the child who has limited abilities to perform at the same level, within the same timeframe, as the young genius, the performance standards by which schools, and school children, are evaluated often remain too low to have any meaning. Nevertheless, school policymakers often feel they have only three choices: (1) require that all students meet the same "high" standards and accept as inevitable that many students will fail, (2) weaken the curriculum to such a point as to guarantee universal success, in which case students are deprived of worthwhile learning opportunities, or (3) combine the first two options by customizing the curriculum to address only those learning objectives covered by state-mandated tests.

The current "Algebra for all" movement and its accountability is a case in point. If mathematics is a gateway, Algebra I has long been considered the first of many keys to the gate, and acquiring the key is supposed to mean something — a gate has no meaning if it is left open for all passers-by — but what it means is not universally defined. For some educators, successful completion Algebra I simply

means that students have acquired skills they will need for the study of higher mathematics, presumably college level mathematics, and only those students who might attend college need to bother with Algebra I. Other educators might stress the development of abstract thought or problem-solving skills as the primary objectives of taking Algebra I. Robert Moses refers to algebra as "the new civil right" because algebra means access to productive careers and serves as an engine of equity (Steen, 1999). Whatever it really means, and whatever gate it may or may not open for school children, Algebra I has become the center of attention in many middle and secondary schools.

Although all children should be given the opportunity to get the key, and all children should be encouraged to try, when all children are required to successfully complete Algebra I, “or its equivalent,” as is the case in Georgia, and if students and teachers are not adequately prepared for the challenge, then Algebra I becomes, in many ways, more problematic than it was before. The literature provides many examples of instructional strategies that teachers can use to encourage low and moderately achieving students to succeed in Algebra I, but in a study in North Carolina, Malloy and Malloy (1998) found that requiring Algebra I as a graduation requirement for all students and modifying instructional practices to accommodate all students in mathematics classrooms are reasonable actions only if students have confidence in their ability to do mathematics, persistence in doing the mathematics, and a sense of personal responsibility for learning the mathematics (Malloy & Malloy, 1998).

The Malloy study points out the necessity for schools to have developed a culture in which students believe they can be successful; and when they do not, Algebra I often suffers massive failures, as has occurred in many schools; or it becomes a watered-down version of its former self to ensure low failure rates, which has also occurred in many schools; or schools create "equivalent" courses that are not generally equivalent to Algebra I, with its focus on abstract thought and symbolic notation, but which will enable students to pass the Algebra EOCT and enable the schools to post better numbers on their state accountability report cards.

Even in a school like Mayfair, where every effort has been made to develop a culture of promise and success, the "college track" may not deliver the goods. What price have we extracted from those students who have failed the traditional course, who have completed the weakened version of that course, or who have taken an "equivalent" course and think they are in possession of the key? How do we explain to them that, like April at Mayfair, a student can successfully complete these courses and score less than 400 on the math portion of the SAT? What gate was opened for April?

At the NCTM conference in April of 2006, Bert Waits stated:

> In the past in school algebra we emphasized the "symbol manipulation" aspect of algebra. We can not [sic] make that the focus when we teach "algebra for all." We need to stop boring students with, by paper and pencil, mindless symbol manipulations, "drill and kill exercises." We need to recognize there is a better way (the world has changed), and move on to exciting students about the power, utility, and beauty of "algebra."

Dr. Waits is correct in asserting that we need to recognize a better way to share with students the power of algebra. Unfortunately, what he proposes to take the place of "symbol manipulation" is *computer symbolic algebra* (CAS), which seems to be symbol manipulation a la technology. Many students do not have access to the technology that he touts, and many teachers do not have training in those techniques. An approach that requires such resources and specialized training could very well widen the very gaps in mathematics education that we are trying to eradicate, and it is entirely probable that the problem with "Algebra for All" is not that algebra requires "mindless symbolic manipulations."

In the Algebra Project, Moses proposes a five-step process which begins with a common shared experience, often as the result of a field trip or other activity. Students develop a graphic or pictorial representation of the experience, and then they develop a written expression of the experience. Students discover and develop the mathematical language embedded in the experience, and then, finally, they create mathematical symbolic representations of the experience. By all accounts, the Algebra Project has been successful, and there is nothing "mindless" about the symbolic manipulations that these students are asked to do.

Certainly, getting every student through Algebra I, or its equivalent, will continue to provide challenges for Georgia schools. In Steen's essay (1998), which is actually about requiring eighth graders to take Algebra I, she asks:

> But behind these concerns lies a crucial policy question: What's the rush? The goal of mathematics education is not speed but understanding. Nothing in high school requires mastery of algebra so early. Worse, much valuable

> mathematics will necessarily be neglected in a thoughtless stampede to early algebra, notably data analysis, elementary statistics, geometry (in two and three dimensions), discrete (computer) mathematics, risk analysis, and financial mathematics. All these topics are more valuable than algebra for citizenship and employment (Forman and Steen, 1997), most are also more concrete (thus easier to learn at an early age), and all would help students build a firm foundation for later study of algebra.

I have to ask what's the rush for ninth graders? Or tenth graders? Are we so limited that we, as mathematics educators, are unable to devise mathematics courses that provide rich, relevant, and accessible mathematics for our students before they take Algebra I? Can we not use those mathematics courses to build in our students a desire for deeper mathematical understanding, confidence that they can learn more advanced mathematics, and the understanding that they have to be responsible for their learning? I think we could do that, but not under the current system of accountability, which requires that we (teachers and students) all do the same thing in the same courses at the same time.

Additionally, when state-mandated benchmarks encourage the creation of a lock-step learning process that demands uniform academic experiences and discounts individual differences, accountability systems sometimes work at cross purposes. In Georgia, the expectation that students graduate high school within four years, as indicated by graduation rates, is problematic for those students who might need five, or even six, years to complete the minimal requirements. Those students, who are usually in the "did not meet proficient level" category might be better served if they

were encouraged to take more time. But no one ever seems to encourage anyone to take more time. We should ask why four is still the number of years for high school when the amount of information has expanded so much in the past fifty years, since the time when high schools began to have four years instead of three. Some estimates are that the amount of information doubles every seven years. It seems that many students would need more than four years to meet even the most basic educational objectives for secondary school; and they should not be penalized for doing so.

One assumption that many critical ethnographic theorists make is that the dominant elitist class has no interest in a highly educated underclass but prefers instead that the lower class would define success and failure in terms involving vocational ambitions and acceptance of "place" (Robertson, 2005). My view on this is that success and failure for almost all students, regardless of social class, involve vocational ambitions, and future plans are almost certainly influenced by the student's perception of the "place" in the social strata that is associated with any given choice. We might question how a multi-layered workforce can be maintained, especially if all students have autonomous discretion in their vocational plans, and I personally believe this can be achieved through a process of natural selection, in which students discover and develop their individual talents and interests. Of course, that does not happen, and critical theorists posit that such a multi-layered workforce is guaranteed because the educational system provides different "hidden curricula" to children of different social classes (Carspecken, 1996). I agree that such hidden curricula exist, but the correspondence between opportunity and social class in schools is clearly

visible; the hidden curricula are just the subtle ways in which that such a correspondence is assured.

Social class is not a strictly socio-economic concept, the criteria for membership in social class strata vary from community to community, and there are no universally accepted definitions for the social classes; but even if there were, teachers rarely have the time or energy to research their students' genealogies. Often it is the *apparent* social class of the child that determines how the hidden curricula will affect him or her.

Children who are privileged in school generally have good personal hygiene, good manners, a solid work ethic, a cooperative attitude, good communication skills, average or better ability, and friends. These are desirable qualities, and it is not surprising that teachers would react positively to children with those attributes and assume that they are from good homes and have parents who are well educated, successful, and interested in their children's education. In many cases, nothing could be further from the truth, but the student who is perceived to be from a privileged social class will be given, or encouraged to take, opportunities not routinely offered to those students who seem to be from lower class families. The parents in lower social classes often contribute to the perpetuation of the social class correspondence when they do not see the value in those opportunities and do not encourage their children to participate in things like Math Club, Debate Team, literary competitions, and other academic-based activities. Middle and upper class children rarely need reminders that such extracurricular activities look good on college admissions forms; children from lower social classes are not usually familiar with college admission requirements.

It seems we educators have a compulsion to encourage every student to go to college. We must acknowledge that the probable future job market is one that will employ some workers in demanding jobs that require mathematical and/or critical thinking skills, which might be developed in an academic setting; but many more workers will need to fill jobs that could be described as those that maintain the country's infrastructure: service, manufacturing, construction, agriculture, and the like. Many of these positions do not require extensive academic skills, few of them provide the employee with any degree of social status, and it seems that educators often reproduce in their students a disdain for such work even when such work is absolutely necessary and requires considerable skill. Such judgments often have the effect of discouraging lower level students from doing what they could do well and setting students up for failure when they try to reach what they have been taught are more socially accepted goals.

Current debates about out-sourcing of lower level jobs to foreign countries and immigrants "taking jobs away from Americans," are evidence of the degree to which we have altered "vocational ambitions and acceptance of place." Regardless of the validity of theories about these and other economic trends, the fact remains that we have an abundance of citizens who are underemployed, unemployed, or unemployable. Nothing we are doing in education seems likely to change that fact, and it seems that much of what we do continues to guarantee a large group of students who will be members of that economic underclass.

The academic vs. vocational track tension in many schools is testament to this outcome. Routinely, it seems, vocational students are considered to be less intelligent,

less capable of academic success, and generally less important in educational circles than academic track students. Although many high schools encourage their students to pursue a "dual seal" on their diplomas with a requisite number of vocational, usually technology-based, courses, I have not noticed any NCLB requirements that are linked to subjects taught in vocational departments. Specifically, I have not seen any state-mandated tests that determine the progress students are making with the basic technology (spreadsheets, data bases, word processing) that all students need to master.

Vocational education is not just for the "dumb kids." Many highly intelligent students, from all social classes, are just not interested in academics; however, for too many of these students, enrollment in vocational courses is simply not a socially acceptable option. Everyone will assume they bailed out of the academic track because they lack ability, motivation, or self discipline. If they are from middle or upper class families, they might find themselves transferred to schools that cater to "learning differences" so that they can find success in the academic classroom. In any case, their teachers will invariably insist they are "too smart" to waste their talents in the vocational wing of the school, their career options will be severely limited if they have just a vocational seal; they will never be able to go to college. They will be doomed, and such a course of action can lead, at best, to a life of mediocrity.

It should not be that way. Students in the vocational wing can be, and should be, given the opportunity to learn important academic skills that are embedded in tech-prep courses. These do not have to be dead-head courses; they should require language, mathematical, and critical thinking skills. There should be advanced

courses for those who are able to master higher level work. The vocational seal should not be interpreted as some educational code for inferior ability. Unfortunately, vocational students, who tend to be from lower class families and whose parents have lower expectations for their children's educational opportunities and are often unaware of where their children are on the educational totem pole, are at the center of the reproduction of social class and opportunity correspondence.

The reconstruction of our educational system would require a democratic process in which school becomes a place where *learning to learn* is the objective, not because it fits into the dominant culture's definition of an educational goal, not because it guarantees access to some social, political, or economic privilege, but because it is a necessary life skill. Developing in students the desire and confidence to learn prepares them for the inevitable onslaught of information they will encounter as adults, enables them to make sense of a remarkable and ever-changing world, and provides them with an almost endless array of ways in which they can become productive members of society. It is the least we can do.

Summary of the Results

In this case study of the Mayfair County School, a small, rural, predominately black school in Georgia, I have described historical events and shared the participants' views about social, political, and economic factors that may explain how the school has come to its current configuration. Analyzing key historical events and accounts, which were centered primarily on issues of race, and informants' current perspectives, which are centered primarily on socio-economic issues, enable us to see

how the educational environment in this small, rural school may be affected by state and federal mandates, which are primarily the result of political factors; local policies and attitudes, which are the result of social, political, and economic factors; and informants' attitudes and actions, which represent their social, political, and economic perspectives.

Although I believe that most of the challenges faced by the citizens of Mayfair County in educating their children arise from their rural circumstance and not their racial demographics, Mayfair County School is predominately black, and it seems appropriate to review the historical backdrop of the civil rights movement when assessing the current situation. By all accounts, the integration of the schools in Mayfair spelled the end of an era of academic achievement for the black citizens of the county; and for the ensuing twenty years, they were essentially deprived of the opportunity to control, improve, change, or influence the educational opportunities for their children.

Mayfair's black school, reportedly an effective provider of academic opportunity, was shut down; excellent teachers lost their jobs; the community was splintered; and black children became pawns in what turned out to be an expensive and unsuccessful academic misadventure. The minority underclass of Mayfair County, previously enjoying, at the least, some degree of self-determination and community identity in their school and, at best, excellent educational opportunities, remained the minority underclass; and it took more than two decades for them to regain even a fragment of what they had lost when they agreed to join with a neighboring county in a middle and secondary school consolidation plan.

At the turn of the century, Mayfair was making plans to bring the students back to a new school, a charter school; in 2001, the school was opened, and the halls were filled with just under 300 students from pre-K to twelfth grade. Some of these students were so far behind academically that they had no hope of graduating, and many more had to adjust to a rigorous schedule of core courses in order to accumulate the requisite number of academic credits. Even so, drop-out rates were reduced, and in mathematics, test scores began to improve, despite an almost constant state of change in curricula.

The school superintendent managed to recruit some outstanding teachers, including the mathematics faculty, who set out to improve not only the educational opportunities of the students but also their awareness of the "outside world," and to help their young charges develop the social skills necessary to succeed there. The mathematics teachers at Mayfair County School are fully qualified, veteran teachers.

The school is technology rich, with broadband and wireless capabilities, and computer stations in every classroom can accommodate computer-based instruction on-site and online. In the mathematics classrooms, computer-based instruction is of a supplemental nature for algorithmic drill and practice, and there is little, if any, use of the available technology to enhance instruction with the use of exploration or discovery lessons.

By most measures, the school has been successful in its endeavors, but the accountability system, vested in AYP goals and developed under the auspices of NCLB, has, according to one school official, labeled the school as one that "needs improvement." Many of the AYP difficulties lie in the elementary and middle grades

mathematics program. This study did not address the elementary mathematics program below fifth grade, but the data gathered for middle and secondary grades suggest that although some of the difficulties arise due to social, political, and economic factors that are beyond the school's control, there are other weaknesses in the mathematics program that can be corrected.

Interpretation of the Results

Because critical ethnographic theory supposes that both the "oppressed" and the "oppressors" have a hand in the construction of social events, it is important to consider both players in the analysis of any historical or current context. Particularly, if it is valid to view state and federal mandates as instruments for imposing the will of the oppressors on rural educational institutions without regard to cultural circumstances, the oppressed; i.e., the rural school community, cannot be viewed as a blameless victim of some elitist conspiracy to maintain an underclass. There is abundant research showing that oppressed people often create situations that ensure their continued oppression (Carspecken, 1996). The data gathered in this study suggests that Mayfair County School, while struggling to meet governmental requirements and contend with various social, political, and factors, still has considerable control over its educational priorities, and some opportunities have been lost as a result of local policies and practices.

I believe that the saga of the Mayfair County School began with the passage of the Civil Rights Act of 1964, and several factors played out in the desegregation drama that eventually resulted in the creation of the consolidated Mayfair- Leeson

County School. The efforts of black civil rights activists led to the passage of the Civil Rights Act, and the Act seems to promote a neutral position in the evaluation of public schools:

> The Commissioner shall conduct a survey and make a report to the President and the Congress, within two years of the enactment of this title, concerning the lack of availability of equal educational opportunities for individuals by reason of race, color, religion, or national origin in public educational institutions at all levels in the United States, its territories and possessions, and the District of Columbia. (Title IV, Section 402, Civil Rights Act of 1964)

It was, however, a white middle-class concept of education that was applied to academic affairs. In effect, when it was said that the black schools were "not equal," it seems that the taken-as-shared meaning for state and federal policymakers was that those black schools were inferior to the white schools. Mayfair County had no legal alternative to closing the original black school, but the residents may have had alternatives to sending their children to the consolidated school in Leeson County. The social, economic, and political effects of that decision continue to exacerbate the challenges they face as a small rural county.

Dr. Walton described the town as looking "… like a ghost town except for a post office and bank." The priest who spent part of the summer of 1965 in Mayfair stated that anyone engaging in civil rights protests would have "…all his credit called in immediately," presumably in reference to threatened action by local shopkeepers. The many vacant buildings in the downtown area are testament to a history that once

included thriving businesses. Jobs were lost when the public school was closed, and as is often true in rural communities, the school system was one of the area's largest employers (Grogan, 2004; Tompkins, 2003).

Several informants suggested that the loss of those jobs resulted in a stagnant local economy as those teachers and administrators sought employment elsewhere, often spending much of their income on gas, automobile repair, groceries, dry-cleaning, and other needs at establishments near their workplaces, and local businesses were forced to close. Because the schools in rural communities tend to be at the center of community life (Grogan, 2004), the absence of local school functions combined with the decline of the downtown business district to create a situation in which the community lost much of its social cohesion. Only the churches remained to fill that need, and while churches are critically important to small town life, they can only do so much — especially when church members are unable to provide financial support for church functions, operations, and improvement.

Eventually, the decision was made to create a charter school, and considerable effort was put into the development of the Charter Petition Assurances. These are requirements contained in the Charter Schools Act of 1998 (O.C.G.A 20-2-2060 through 20-2-2071), and include a plan for collaboration, guiding principles, governance of the school, an improvement plan, an accountability plan, and a financial plan. The Assurances are contained in a 26-page document with general provisions and plans for such things as parental and community involvement, the school calendar, and school safety. Additionally, there are specific provisions that

address curriculum, technology, and accountability. The next section of this paper will address these issues.

The school has been able to fulfill most of its obligations under the terms of its charter, but some provisions became problematic with the passage of NCLB and its accountability requirements. For example, under the provisions of the charter, Mayfair agreed to use the Iowa Test of Basic Skills (ITBS) for accountability and selected mathematics curricula they felt would align with that assessment instrument at different grade levels. The Mayfair Charter was signed in 1999, Georgia developed the CRCT in 2000, Mayfair County School opened in the fall of 2001, and when NCLB was enacted in January 2002, the state designated the CRCT for AYP accountability requirements. Officials at Mayfair County School recognized that their mathematics curricula, chosen to align with the ITBS, did not prepare their students for the CRCT and began, almost immediately, to search for better programs. Within five years they tried several different commercially produced mathematics curricular programs: Direct Instruction, Saxon Math, Mountain Math, Learning Logic, and I CAN Learn® as well as textbooks from Houghton-Mifflin.

As the curricula evolved, the mathematics teachers created classroom cultures that reflected not only the abilities of their students but also the teachers' systems of values and beliefs about both mathematics and the purpose of education in this setting. At the beginning of my observations, my impression was that Mr. Drew did not expect much from his students, was overly kind, and that by "reform" standards, his instruction was often rule-based, perfunctory, and dull. I came to realize, however, that he was working with children who had limited abilities and who, for various

reasons, had never been successful in mathematics and had long ago lost the confidence it takes to try.

Mr. Drew was helping these students develop not only basic mathematical foundations but also the willingness to learn, the ability to deal with frustration and failure, and the belief that, eventually, they would triumph over those "evil variables," as one student described them. His patience was remarkable, and although his students were not engaging in what most mathematics educators would consider deep mathematical thought — understanding that there was any relationship between a linear equation, a table of values, and a graph was a major accomplishment — the fact that they were engaging in mathematical thought at all was a source of pride for teacher and students alike.

For Mr. Drew, his students' limited abilities were just an inconvenience, not an excuse for failure, and keeping them in school, having them pass the GHSGT, and helping them develop an appreciation for, and the confidence to pursue, educational opportunities were just as much a part of his job as teaching mathematics. He believed that given time, all of them could be successful and self-sufficient:

> I think these kids do understand that education is the ticket out [of their current situations]. Technical school is an option...[there is a tech school] just 20 miles away. Because of the nurse, we have several who are interested in health occupations. I think they all have options.

While Mr. Drew's classroom culture was tentatively optimistic, cautious, and methodical, Mr. Glover's classroom was *alive*. It really did have all of the attributes

of a baseball game — everyone was on the team, and although some were designated as starters, nobody was allowed to just sit on the bench. There was ample time to practice basic skills, and there were opportunities to discuss different strategies, review the outcome of the previous "game," and talk about being in the major league of the real world. Mr. Drew's students respected him and appreciated his efforts; Mr. Restor's students respected him and appreciated his mathematical knowledge; Mr. Glover's students adored him.

Of the three mathematics teachers observed in this study, Mr. Glover has the least formal training in mathematics; an elementary education degree is not usually associated with strong mathematical coursework. Nevertheless, he consistently connected mathematics to his students' lives, he understood his students' mathematics, he was adept at diagnosing student misconceptions, and he provided enough variety in each day's activities to keep virtually everyone engaged. He had not found a magic formula to help his students retain the information, and he struggled with the social and economic factors that impacted his students' academic careers. Like Mr. Drew, but not necessarily for the same reasons, Mr. Glover felt that "the system" was often a hindrance in his effort to help his students develop their academic skills, and he was clearly overwhelmed by the demands that the school placed on him.

I found it interesting that Mr. Glover was the only one of the three mathematics teachers who wanted to talk about mathematics during the interviews. He discussed his students' mathematics and how he tried to connect mathematics to their experiences; he talked about specific curriculum requirements, when students

were expected to master which concepts and how the concepts were interrelated; and he talked about different mathematical activities that he had used successfully in the classroom.

Mr. Drew and Mr. Restor did not talk about mathematics — they were more concerned with course descriptions and sequences, curriculum, students' plans for college and careers, scheduling difficulties, social issues, and policy concerns. But this does not necessarily mean they were less concerned with their students' mathematical development. Mr. Glover teaches all of the 5th, 6th, 7th, and 8th graders, except for special education students, and is not concerned with scheduling. The sequence of courses is not up for discussion because it is based on grade level. His students are looking forward to high school, not college; and their concept of career is largely limited to what their adult kinfolk do. Mr. Glover has the luxury, we might assume, of concentrating on the mathematics, but the reality is that "the system" weighs most heavily on Mr. Glover.

Mr. Drew and Mr. Restor can agree or disagree with federal, state, and local policy and continue to do, basically, whatever they have always done in their classrooms. As Mr. Drew pointed out, "…as long as you use the buzz words, there's very little pressure…" Their levels of influence over the mathematics program range from virtually none for Mr. Drew to considerable for Mr. Restor, but neither of them is held directly accountable for any NCLB requirements, and any connection between AYP goals and their instructional methods, beliefs, or mathematical knowledge is tenuous at best. Except for the time constraints cited by Mr. Drew for the EOCT, both of the secondary level teachers have the freedom to operate autonomously in their

classrooms, and the policy decisions in which Mr. Restor participates generally affect only him and his students.

On the other hand, Mr. Glover, who had been given the sole responsibility for implementing the new GPS in the middle grades, and all of whose students are tested for AYP objectives, felt considerable pressure. He never indicated, except in reference to the graduation test, that anyone held him responsible for student test scores, but *he* felt he was responsible, and the devastating sixth grade CRCT results were more than he could bear. He decided not to renew his contract with Mayfair County School but to accept the offer to teach just 8th grade mathematics in a nearby county. I consider this a huge loss for Mayfair County School, regardless of CRCT scores.

Although it is unclear to the people at Mayfair whether or not all or any of the charter provisions take precedence over NCLB provisions, their AYP status is apparently determined under the same rules and regulations as any other public school and reported on the Governor's Office of Student Achievement web site. There seems to be considerable confusion about the school's status under NCLB. One school official told me that the school was labeled "Needs Improvement," and another official confirmed that by saying that if they did not meet AYP goals for 2005-2006, they may have to be "restructured." Neither official was certain about the criteria for meeting AYP requirements; but according to the Georgia Department of Education web site, schools that do not meet AYP in the same subject for two or more consecutive years are labeled as "Needs Improvement." In the following year, if AYP goals are not met, school choice provisions are to be implemented; the next year

of AYP shortfalls results in the school having to provide supplemental instruction. If none of those programs have the desired effect, meeting AYP goals, then the school is subject to corrective action by the state, and in the year after *that*, it might be restructured. Mayfair failed to meet AYP for the mathematics CRCT during the 2003-2004 and 2004-2005 school years. The Governor's Office for Student Achievement web site, however, had the school listed as "Adequate – Did Not Meet AYP" following the 2005 tests.

Another conflict between the terms of the charter and NCLB requirements is that the state had agreed to let Mayfair hire local community members who "while not formally educated, possess vital knowledge in both life and job skills… to employ such skilled but uncertified people to work with students to pass on this knowledge." The "fully qualified" provisions of NCLB essentially prohibit the school from taking advantage of local uncertified talent, and the loss of that resource has been especially troublesome for the vocational department. Plans to offer a variety of construction courses were scrapped. Several nearby counties do have a demand for highly skilled tradesmen, and the school had hoped to provide training as well as apprenticeship programs for those students who were interested in the construction trades.

Vocational programs are at risk of losing federal financial support — President Bush's 2007 federal budget request includes no funding for vocational programs, proposing instead that schools use funding as they see fit.[16] Several informants believed that students who are not in college prep courses have difficulty passing the GHSGT and that Mayfair seems to be moving toward a single track

[16] See the Fiscal Year 2007 Budget Summary, Programs Proposed for Elimination at http://www.ed.gov/about/overview/budget/budget07/summary/edlite-section3.html#vocst

mathematics program, in which everyone takes college preparatory classes. Although we would like to think the objective of taking more rigorous mathematics courses is not just having everyone pass the GHSGT, it looks suspiciously as if that might be the case.

Informants in this study were more than eager to discuss the folly of this plan to have everyone take college prep mathematics courses, and several expressed their fear that a large portion of their student population would not only fail to be successful in college but that a significant number of students could be overwhelmed by the effort required to be ready for college and drop out of school. Additionally, informants indicated that students may be sacrificing the opportunity to learn skills, including academic skills that could enable them to be contributing, self-sufficient, successful members of the community, thereby guaranteeing the survival of a large underclass as these students drop out, or "graduate" with certificates of attendance, or otherwise fail to be educated beyond the most basic level. Instead of inadvertently leaving one child behind, many informants feel they may be simply providing that child with plenty of company. As one informant put it, "None of the ones that remain will be left behind."

Mayfair has not decided what to do with students who are unable to pass college prep Algebra I within the traditional timeframe. As a result of conversations with mathematics teachers at other schools and my involvement with student teachers at fourteen different high schools during the 2004-2005 and 2005-2006 school years, I know that at least a few counties in that area of the state have seen Algebra I failure rates skyrocket when all students were required to take the college prep course. Many

of these schools have decided to offer Algebra I as a two year (or two block semester) course for many of the "lower-level" students. Mayfair is considering such a solution to the problem, possibly utilizing Applied courses in lieu of the college prep sequence. One proposed benefit of such a plan is that by decreasing the time that elapses between the end of the Algebra I sequence and the administration of the GHSGT, these students might have a greater likelihood of passing that test, which is part of the AYP formula and is of great concern to everyone. Additionally, the EOCT, which is not currently part of AYP but is posted by the Governor's Office of Student Achievement alongside the AYP indicators, will be given at the end of the second year when, it is hoped, students will have had enough time to acquire the necessary skills to pass the test. These students may pass the EOCT; they may pass Algebra I, albeit given in two parts; but they are not what has traditionally been considered "college material." The numbers published by the state, however, will suggest that they are and bolster support for the idea that everyone can be "ready for college," as some gubernatorial candidates are promising in their 2006 campaign advertisements.

The mathematics curriculum for the school has been in an almost constant state of change as different programs, technologies, and courses have been investigated, with the result that the mathematics teachers are not in a position to give any kind of meaningful advice to their students about what courses will be available from year to year. The teachers simply do not know which courses are being offered or which teachers are teaching which subjects. There is clearly a lack of communication in regards to the mathematics program among the mathematics teachers, between the mathematics teachers and the curriculum director, and probably

between the school and parents and students. Interestingly, there seems to be little concern over this uncertainty and lack of communication — perhaps because with such small class sizes, the teachers can, and sometimes do, individualize their instruction to such an extent that each student in a class could be, essentially, taking a unique course.

Even if Mayfair County School had been able to dedicate the resources and personnel necessary to research, implement, and establish a comprehensive secondary mathematics program at Mayfair, the new Georgia Performance Standards represent a changeover to an integrated curriculum that would negate whatever program the school's faculty and administration might have constructed. The Georgia Department of Education provides training for mathematics teachers with respect to the GPS curriculum — during the 2006-2007 school year there are six workshops scheduled at each of nine different sites around the state — but no comprehensive plan seems to be in place to help schools manage the process. For teachers throughout the state, the change is expected to be difficult; and in some districts, especially large districts, individual schools are hiring mathematics specialists, or "coaches," who will, among other things, facilitate the implementation process for the new curriculum (Obara, 2006).

Mayfair County School and other small schools and districts typically are not financially able to hire mathematics specialists to facilitate this enormous change in the mathematic curriculum. According to the Georgia Department of Education, each of the performance standards has four components: a content standard, illustrative tasks, examples of student work, and a commentary for teachers. Many districts

expect their teachers to generate formal lesson plans that align with and reference the components of the new standards, but if teacher conversations at the Banchoff workshop are indicative of the situation in larger districts, each teacher is being asked to address one, or perhaps a few, of the concepts; and all of the teachers in a district, together, are encouraged to collaboratively develop a cohesive plan with which to tackle the implementation. Small and less affluent districts, especially rural districts, will struggle, and situations will evolve in which individual teachers, like Mayfair's Mr. Glover, will be expected to shoulder the entire responsibility for implementation of the new curriculum in several grade levels with little guidance or assistance.

The sixth grade CRCT results (8% passing) suggest that Mr. Glover could have used considerably more help with the implementation of the GPS than he received at the workshop he attended. Obara (2006) studied the implementation of the GPS in the sixth grade of a Georgia middle school that, like Mayfair County School, had a large minority student population with low socio-economic status. At that school, 55% of sixth grade students, about half of whom are not native English speakers, passed the mathematics CRCT. In conversations with those middle grades teachers, Obara found that they did not perceive the GPS as being different from the QCCs except for wording and the timing of instruction, and they did not foresee the scope of the changes that were to be made to the CRCT. However, at that school, a mathematics coach facilitated the implementation process, a research-based middle grades curriculum (Connected Mathematics Project[17]) was chosen because it aligned with the GPS, and teachers attended a two-week long workshop as well as ongoing

[17] For more information about the Connected Mathematics Project, go to http://www.math.msu.edu/cmp/.

professional development sessions to address the new standards. The results of the Obara study suggests that a successful implementation process requires more support than Mr. Glover received, and more than Mayfair County could possibly provide.

It seems that NCLB, which has as its foremost goal the reduction or elimination of the achievement gap between various ethnic groups (Tyler, 2003), makes no allowances for schools with something other than middle-class ideals, students, or resources and seeks to impose a middle class vision of purpose and success on the nation's educational establishment. Many of the students who might benefit most from the provisions of the Act are not necessarily members of a minority culture, but they are likely to be in some school that is not classified as a suburban school (Loveless, 2003).

Particularly troubling to me is that the educational needs of the community, the availability of resources in the community, the socio-economic factors that affect achievement, and other issues that local school boards or citizens deem important are essentially dismissed as irrelevant to the educational process. In small districts like Mayfair, there are frequently not enough students to make the AYP calculations statistically reliable (Tyler, 2003). All of the mathematics teachers expressed concern that with such small numbers of students, one student's inability to master a concept within an arbitrary timeframe could mean not only failure for that student but also failure for the entire school. That is a tremendous amount of pressure to place on teachers who are expected to teach their students considerably more than just mathematics.

Schools that do not meet the specific standards of AYP are branded "failures," regardless of the fact that they may be successful in six of the seven categories used for accountability. And there is no distinction between those schools that barely miss their AYP goals and those schools that fail in most, or even all, of the categories (Hess & Finn, 2004). Could it be the case that NCLB is structured in such a way as to guarantee the "failure" of this and other small, rural schools? And if it is structured in that way, is the architecture of the Act a result of some intentional malfeasance or simply elitism gone awry?

Educators are nothing if not resourceful in their ability to hide the sometimes ugly reality of their situations. The pressure to improve academic achievement to meet AYP goals has often meant that instructional emphasis has shifted to preparing students for testing, perhaps at the expense of educating the whole child (Tyler, 2003). Several of the teachers in this study reported that they are often "teaching to the test," especially those tests that are linked to AYP status, knowing that in the final analysis, their efficacy as teachers will be judged by those scores and little else.

When teachers and administrators at Mayfair County School talked about their focus on the QCC standards, restricting what is being taught to the concepts prescribed for each grade level, it became clear that for them, the high stakes of the accountability system meant that there was little room for discovery lessons or discourse that might stray into concepts from the "wrong" list of mathematical concepts. Their students' test scores have improved, overall, and there is little incentive for the mathematics teachers to incorporate reform methods into their mathematics instruction. There was no reason to believe that would change with the

implementation of the GPS; however, the sixth grade CRCT results may generate some reconsideration of that position as the school faces the implementation of GPS at every level over the next few years.

Regarding the dismal sixth grade 2006 CRCT test scores, it seemed that Mr. Glover did not understand the ramifications of the changing curriculum and/or the ways in which the CRCT itself was being altered to align with the new standards. At one point he said, "…it's just a lot of paper work. A lot of busy work. I don't have to take the test — the kids have to take the test." But for all practical purposes, he did have to take the test, and he did not do well.

While it may be unreasonable to expect one teacher, especially one who is not a mathematics specialist, to handle the mathematics instruction for four grade levels; and have time to develop an effective program for the implementation of a new curriculum; and alter his instructional practices, indeed, his entire philosophy of teaching mathematics, to align with the new standards and testing, it is not unreasonable to expect the school's curriculum director and *all* of the mathematics teachers to be involved in the GPS implementation at every level. The data suggest that the degree to which attention would be focused on this critically important change in state requirements, like other decisions involving the mathematics program, was largely left up to the discretion of one teacher.

NCLB requires that schools which receive Title I funds, as Mayfair County School does, use methods and instructional strategies that are based on scientifically based research (Chaval, Reys, Reys, Tarr, & Chazez, 2006). However, in discussions with administrators and mathematics faculty, there was never any mention of

research, scholarly works, or anything other than corporate presentations or promotional literature in the selection of textbooks, computer software, or any instructional materials for use in the mathematics program. Similarly, decisions about which courses to offer did not appear to be based on anything other than anecdotal evidence, hearsay, and personal opinion.

There were other situations in which personal opinion and influence seemed to dictate the curriculum. The Charter Assurances specified that both academic and vocational tracks would be offered. It was never clear to me under what authority the mathematics program was evolving into a single college track, or exactly how the new GPS should be interpreted as an exclusively college preparatory curriculum, as Mr. Restor believed, or who was pushing the school toward having an exclusive emphasis on college preparation, as Ms. Wise suggested. These ideas were not reflected in the minutes of the Board of Education, and it seems that such departures from the original intent of the school, as evidenced in their Charter petition, would warrant the Board's approval. In fact, the Charter Renewal Application, filed in November of 2005, reiterates the availability and importance of the vocational track. There seems to be a serious breakdown in communication and/or understanding of the school's policy, if one exists, about curricular matters, at least in the area of mathematics. I could not find any record of official policy about the ways in which course offerings were to be determined or who would be responsible for making such decisions. The School Board did not appoint a curriculum director until the 2004-2005 school year, and it was unclear how much authority she had over the various academic departments.

Mr. Drew is sorely underutilized by the school, according to the biographical sketch he provided and in the opinion of Mr. Owens, who has known Mr. Drew for about forty years, since the time that Mr. Drew was a high school student himself. This seems to be more a function of block scheduling than anything else. Virtually everyone responding to questions about the block vs. traditional schedule stated that they would prefer to have a traditional seven period day. Even if teachers were required to teach just five of those periods, the number of mathematics course offerings could be increased substantially.

Informants were unaware that their opinions on block scheduling were shared by many, if not most, of the others. It is difficult to understand why this change has not already occurred since the original motivation for the block schedule — enabling students to take eight courses in a year — is no longer a consideration. The superintendent, who preferred the traditional seven-bell schedule, mentioned exploratory classes for the middle grades as a justification for the block schedule, but many middle schools manage to offer exploratory classes during 50 or 55 minute class periods in a seven period day.

The media specialist has not stayed informed about the current state of distance learning technology, its cost, or its potential value to the school's students. Rural areas need inventive options such as those afforded by learning technologies that can mitigate the geographical constraints under which rural schools operate (Hess & Finn, 2004). The Virtual School (GVS), sponsored by the state of Georgia, allows students to take online courses at a very reasonable cost per student, and each student in the school is eligible for one of the regular courses, per year. The cost of the

regular courses is based on the FTE funding formulas and varies from year to year, but during the 2005-2006 school year the cost would have been a reduction of about $400 in FTE funding for each student enrolled in one of the regular online courses (e-mail correspondence with Kristie Clements, Georgia Virtual School).

The courses offered by the Georgia Virtual School do not seem to be just for the best and brightest students, although such courses are offered, and the Virtual School web site does suggest that students need certain personal attributes (motivation, self discipline, etc.) to be successful in this independent learning environment. Over 75 courses can be taken online through the GVS. The list includes academic as well as vocational studies, and the target audience for these courses would seem to be students at any school that has limited scheduling flexibility or personnel. Although the state has dedicated substantial resources to the Virtual School program, information about the program is apparently not getting into the hands of administrators, faculty, parents, or students at Mayfair County School.

Information about the state's support of interactive distance learning programs is difficult to find online, and it is not always clear from the state's web pages whether the distance learning programs being described are online or interactive. In any event, Mayfair County School has not taken the initiative to investigate the possibilities. The cost of purchasing the necessary hardware for interactive television (I-TV) distance learning is largely covered by the e-rate program grant[18], and the real challenge in setting up these courses is in finding partner schools or consortiums to join. Many rural schools are availing themselves of this technology (Setzer & Lewis,

[18] For information about the e-rate program, visit the web page of the Universal Service Administrative Company, Schools and Libraries Division, at http://www.sl.universalservice.org/data/pdf/ERate_Discounts.pdf

2005), which provides face-to-face, real-time instruction. A provision of the Mayfair charter agreement was that the University of Georgia would be solicited to offer an outreach program, and there were some initial attempts; but, according to the superintendent, those programs were to be funded by grants which did not materialize. It is time to try again — with the objective being the establishment of an I-TV distance learning cooperative of some sort.

Despite its successes, of which there are many, this small rural community and its school remain vulnerable to the whims of state and federal policy makers who may or may not have the wisdom and experience to recognize and appreciate those successes and give this community school the time it needs to establish itself as a model of academic excellence. In particular, having the entire school branded as "Needs Improvement" is demoralizing, and having to be subjected to state "restructuring" would be especially heart-breaking when by almost every measure, the school has dramatically improved the educational experience for all of its students.

Preparing students for future success involves more than academic instruction — Mayfair's students need to develop an awareness of opportunities outside their relatively cloistered environment, and the social skills and self-confidence that will enable them to successfully avail themselves of those opportunities. Teachers and administrators are justifiably proud of their progress toward achieving those goals. In addressing what they have accomplished, Dr. Walton had this to say:

> I think what we have done here is help build that self-confidence — that they can finish school, that they can take and pass core classes. That's major. If

you can't perceive it, then you're lost. So we've changed that. We've shown them that — our graduation rate has increased; our teachers are doing a fine job working with our students on a one-on-one basis, teaching the content area, and assessing students to prove that they are learning. We've had more than a 200 point increase in our scores on the SAT over the past 3 years. They see their friends graduating. When they first came back, if they didn't pass part of the GHSGT — half of them didn't even know what it was. They didn't realize they had to pass the five areas of that test to graduate. Now when the juniors don't pass the first time through, we see them crying in the hallway. That realization, that concern, that they actually care, is major. Going to college — prior to their coming back, over the last twenty years, if we had five students graduate from college, that would be a surprise to me. Now we have, in the past three years, we have about eleven in college right now. Half of the graduating class this year has already been accepted to college and are ready to go right now. That's major. We are literally changing lives here. We have increased their confidence to a point — it is our goal to not ask them, "are you going to a post-secondary institution" but, "which one are you going to?" That's what we're working on, and I think it's major. We don't get a lot of support from some of the parents because a lot of the parents don't even have high school diplomas. So we have to kind of push that and follow up with our graduates. They tend to give up if they don't get that push from the school. Students don't always get support and encouragement from home. Their parents can't always see the significance of a good education— they

say, “Okay, you need a job,” or, ”You don’t need to go to college,” or, ”You only need to learn a trade.” It’s creating that mind-set, self-confidence; I feel that is the most important thing we have accomplished.

Limitations of the Study

A case study can only claim to be a portrait of a particular situation at a particular time. Case studies are often enormously interesting, perhaps even entertaining, but, just as often, seemingly irrelevant to the reader’s circumstances. This study focused on an extremely small, Southern, rural community that is predominately black, and there are those who may feel that the challenges facing the Mayfair County School are unique to extremely small, predominately black, Southern, rural schools.

This was not only ethnographic research, but critical ethnographic research, focusing not on racial matters but on the social, political, and economic factors that exist in the community and the ways in which the educational system in this community has been constructed within a dominant culture that differs considerably from that which the members of this community know. And it is that community, with its residents and its school, which is the culture of interest. It is a rural culture. But rural culture is not a catch-all phrase for something that exists where there are cows and corn fields.

In that respect, even the “rural” in this case study may not seem familiar to a mathematics educator in some other rural area. For example, the typical rural school serves a much larger proportion of white students than do urban and suburban schools

— only 8% of rural students, nationwide, are black (Loveless, 2003) — and approximately 84% of Mayfair's students are black; and researchers or educators in other areas may feel that racial considerations outweigh other factors. Although race is certainly a part of Mayfair's cultural identity, this study focused on socio-economic circumstances and geographic isolation as the primary factors that defined the community's ethnographic identity.

A single case study may have limited value beyond the impetus it can create for developing educational theory or its implications for further research, but creating interest in educational issues and encouraging further research in rural education, particularly the mathematics education in rural schools, seems to be a worthy goal.

Implications for Further Research

Further research that compares and contrasts the social, political, and economic factors in predominately white, predominately black, and racially diverse schools would be enlightening. Along these same lines, the power structure in Mayfair County, where black and white residents are found at every level of both the county government and the school's administration, might be unique among rural counties; and there may be other issues for predominately black schools in rural locales in which most of the higher ranking officials are white. Or vice versa.

This school opened just a few months prior to President Bush's signing into law the NCLB Act of 2001. As a result, the school's policies and programs have been influenced by NCLB and Georgia AYP requirements almost from the outset. Although there is an abundance of anecdotal evidence about the effects of NCLB on

teaching and learning mathematics, further research would be needed to determine how and to what extent NCLB has affected mathematics instruction in rural schools.

The mathematics teachers at Mayfair use traditional instructional methods, albeit altered considerably due to the unusually small class sizes they have for most courses, and only one of them confessed to ever doing "nontraditional things." None of them indicated that concerns about AYP goals had influenced his instructional style. I think it would be of interest to know, for those teachers who may have embraced the NCTM standards and reform teaching, whether or not NCLB has affected their practice, and if so, how.

Block scheduling was often cited as a problem, in general, and, in particular, as a hindrance to fully utilizing the teaching staff to provide a wide range of mathematics courses. Additionally, Mayfair did not encourage students to take online courses except where necessary to meet graduation requirements. Although a focus on necessary course credits was given as the primary determinant for course offerings, the block schedule and the lack on distance learning are also contributors to the very narrowly structured mathematics curriculum. Further research would be necessary to determine whether or not students of small rural schools would take advantage of a wider range of courses, and also whether or not, for students who would like to take courses that are not offered at their schools, their needs could be met by distance learning coursework. A related area of inquiry could address the media specialist's claim that distance learning courses are only suitable for high-achieving students with unusually high levels of self discipline.

Mayfair has considerable technological infrastructure, but it seems that much of it is used to supplement, rather than enhance, mathematics instruction. Further research could explore the extent to which other rural schools have embraced technology and how that technology is used to benefit the students.

Despite an uncertain future — a new superintendent, charter renewal, AYP status, GPS, and other developments — the people at Mayfair County School can look at the past five years, see how far they have come, and face whatever comes their way with optimism and the determination to do what needs to be done. They have already done what many thought would be impossible. A visitor cannot help but feel optimistic about the future of this school and its students. The place is filled with a kind of joy — the kind that comes from doing a job well; knowing that improvements, however small, are being made; and witnessing the awakening of a community to the promise that is its children.

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