ABSTRACT
                This action research project developed and implemented a
program to improve student knowledge of social sciences and application in
the real world. The targeted population consisted of fourth grade students in
a K-5 accelerated elementary school in a midwestern state. The problem was
documented through the results of standardized tests which were administered
annually at this grade level. Analysis of probable cause data revealed that
students were not retaining information given or transferring that knowledge
to real-life situations. In addition, students lacked the necessary skills to
succeed in the real world. Review of curricula content and other resource
materials in the social studies area suggested material with advanced reading
levels beyond student comprehension. The perspective that was brought to bear
on this issue is based on individual student strengths through the use of
Howard Gardner's brain research. Through review of solution strategies,
research indicated that there were many good reasons for applying the
multiple intelligences theory in the classroom: to help students better
understand their own capabilities; to show students how to use their
strengths to learn and develop their weaknesses; to develop risk taking; and
to better assess the mastery of higher-level content. Includes 15 figures, 2
tables, and 36 references. Appended are student questionnaires, permission
materials, and other information. (BT)

SO

ENHANCING STUDENT ACHIEVEMENT IN SOCIAL STUDIES
THROUGH THE USE OF MULTIPLE INTELLIGENCES

Nancy Gohlinghorst
Becky Wessels

An Action Research Project Submitted to the Graduate Faculty of the

School of Education in Partial Fulfillment of the

Requirements for the Degree of Masters of Arts in Teaching and Leadership

Saint Xavier University & SkyLight Professional Development

Field-Based Masters Program

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May, 2001

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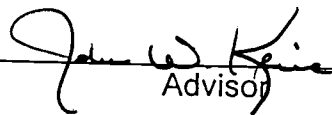
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ABSTRACT

This report described a program which was implemented to improve student knowledge of social sciences and application in the real world. The targeted population was fourth grade students at the elementary level in a mid-western state. The problem was documented through standardized tests results which were administered annually at this grade level.

Analysis of probable cause data revealed students were not retaining information given or transferring that knowledge to real life situations. In addition, students lacked the skills necessary to succeed in the real world. Review of curricula content and other resource materials in the social studies area suggested material with advanced reading levels beyond student comprehension.

The perspective that was brought to bear on this issue was based on individual student strengths through the use of Gardner's brain research. Through review of solution strategies, research indicated that there were many good reasons for applying the multiple intelligences theory in the classroom: to help students better understand their own capabilities, to show students how to use their strengths to learn and develop their weaknesses, to develop risk taking, and to better assess the mastery of higher level content.

ACKNOWLEDGEMENTS

On behalf of this Action Research Project, we would like to recognize Jan Quintiliani. From our first meeting with her on the steps of the Regional Superintendent's Office, to the final days of completing the required course work, she has been an inspiration to both of us. Without her continued words of encouragement, her positive approach to each day, and her enlightening thoughts, we may not have had the courage to see this project through to its end. For that we are humbly grateful and wish to thank her from the bottom of our hearts. She enabled us to take chances, to try innovative approaches to our work and to life, and to continue to be the best we can be as educators of the young.

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CHAPTER 1

PROBLEM STATEMENT AND CONTEXT

General Statement of the Problem

Over the years teachers have seen many negative changes in the classroom. A lack of interest in learning has created non-motivated students. Teachers continually ask themselves, "What are we doing wrong? What could I be doing differently? How can I reach my students?"

The learnings that occur in classrooms are difficult to predict. Children are
different not only in their interests and backgrounds, but also in terms of
their literacies. While most teachers may begin the year with a sense of
what they want to cover, generally they do not consider their plans to be
cast in stone (Tierney, 1998, p. 376).

The students of the targeted fourth grade classes exhibit a lack of interest in social studies due to the magnitude of information required at this level. Current teaching methods have failed to address multiple intelligences in enhancing student achievement. "Classrooms of the 90's need to be structured to support cooperative/collaborative and individual learning processes with extensive use of technological tools" (Five Year District Improvement Plan, 1995, p.7). Classrooms can become equally balanced by incorporating the multiple intelligences through individualized and cooperative group lessons that will afford students a variety of ways to learn and meet with success.

Immediate Problem Context

The targeted school is a K-5 accelerated elementary school located on the western edge of

a small Mid-western community. Situated on the corner of two heavily traveled city streets, the

school is approximately four acres in size. It is surrounded by low to middle income residential

neighborhoods. Located within a two mile radius are large manufacturing businesses, a car

dealership, and a cemetery. This research will be conducted in two fourth grade classrooms

at the same school designated Classroom A and Classroom B.

The school was approved to become a charter member of the State Network of

Accelerated Schools in 1989. Accelerated Schools believe in shared decision-making, unity of

purpose, and building on strengths to accelerate students to grade level. The vision statement

for the school affirms:

> a place where students, staff, parents, and community work together
>
> as a nurturing and supportive family, a school in which teaching and
>
> learning are valued as the most important part of our mission, a place
>
> where the whole school family is encouraged to become responsible
>
> and develop strong moral character, and a school which provides
>
> physical facilities large enough to support the growing needs of our
>
> community (School Improvement Plan, 2000).

The targeted school's mission statement reads: a community of students, staff, and

families, exists for the purpose of preparing children for the future. With high academic

expectations, we accelerate learning. In an atmosphere of positive support and respect, we build

on each child's strengths. It is the mission of the school to foster an educational environment

where honesty, peace, and politeness are valued. The mission and vision statements are

representative of the input which was received from students, staff, parents, and community.

Accelerated Schools operate through cadres who identify challenge areas and report to a steering committee (School Improvement Plan, 2000).

Over the past 13 years, the targeted school's student enrollment has remained remarkably consistent, with a high of 426 students in 1987 to a low of 366 students in 1997. The present enrollment is approximately 375 students. The school has experienced consistently high mobility, 31.7% of students from year to year. Student attendance is 94.5% with chronic truancy at 2.5%. There has been a gradual increase of low-income families 55.9% to the present. Evidence of this is reflected through more than half of the students qualifying for free or reduced lunches. The ethnic diversity of the student population has remained consistent over the past 13 years, with about one-quarter of the students coming from minority populations. As reported in the school report card, the percentages are as follows: White 75.2%, Black 19.3%, Mexican-American 5.3%, and Asian/Pacific Islander 0.3%. The school's community views this diversity, economic and ethnic, as both a strength and a challenge (School Improvement Plan, 2000, School Report Card, 1999).

The staff consists of three classroom teachers per grade level for K-5, 4 Title I teachers, 1 Outreach worker, 8 fine arts teachers, 12 teacher aides, 6 cafeteria workers, 2 custodians, 2 secretaries, 1 speech therapist, 1 part-time psychologist, 1 part-time social worker, and 1 building administrator. The ethnicity of the staff is 94% White and 6% Black. The gender composition is 89% female and 11% male. The faculty at the school consist of 74% with bachelors degrees and 26% with masters degrees. The average class size is approximately 22.6 students per classroom teacher.

A variety of programs are offered at this school. This is a school-wide, federally-funded Title I site. Title teachers provide a variety of services, including both pull out and inclusion programs for identified students. Students also benefit from a daily forty-five minute

rotating fine arts program, consisting of music, library, art, and physical education. Students at the K-5 level also attend weekly computer lab classes. Numerous programs are offered to the entire student body. These include: Membership in the Accelerated Schools Network, District Summer School, Special Education, Title I, Outreach, ROE Truancy Prevention, Public Aid Truancy Initiative (chronic truancy families receive limited public aid), DARE, Rising Stars Tutoring (college volunteers assist fourth and fifth grade students after school), Care Pairs (pairing of at-risk students with community leadership "pals"), Boys' and Girls' Performing Choirs, YMCA, PALS Latchkey (an after school child care program for working parents), PTO, Boy Scouts, Girl Scouts, County Area Project Programs, Learn Not To Burn Curriculum (provided by local fire department for K-3), Adopt-a-School businesses (pairs schools with local businesses for community support), K-3 Instructional Aides, New Student Orientation (incoming students are provided with school expectations during a lunch period), Polite Is Right, Peace Is Right, Honesty Is Right (created at this school to assist with challenged areas), School Breakfast Program, Attendance Recognition (room pizza parties), community restaurant incentives, Family Nights (evenings of family-oriented educational activities), Reading Is Fundamental (free book distribution provided by a service organization), Computer Training/Lab, Jaycees, Kiwanis, Carver Center, GPD Christmas Programs (clothing and toys provided for students in need), Boy's and Girl's Fifth Grade Basketball Teams, and a high school child development student assistants (School Report Card, 1999; School Improvement Plan, 2000).

The school was built in 1967 with an area of 40,607 square feet. The building is arranged with three pods containing six classrooms, each branching off from a centrally located office and learning center. Numerous small storage rooms have been converted into workable student centers. The gym serves a duel purpose as a cafeteria and physical education facility. In 1995 this facility established a full computer lab thus enhancing student learning through modern

technology. This school is continuously challenged with meeting the spatial needs of a diverse learning community (District Facility Study, 1999).

Classroom A has an area of a little less than 600 square feet, making it one of the two smaller classrooms of the six rooms in Pod C. It is a fourth grade classroom accommodating a maximum of 25 students who sit in individual desks grouped collaboratively varying from three to four students per group. Three large tables located in the outer perimeter of the room are used for various activities, learning games, and projects during the course of the year. One round table is used for silent reading in small settings and one computer with a printer for individualized work assignments, reports, assessments, and free time activity games is situated on the south end of the room by a medium-sized science sink and one of the two classroom windows. Various teaching walls add to the learning environment and also serve to reinforce content areas taught at this particular grade level. An availability of resources and reference materials such as dictionaries, encyclopedias, thesauruses, and novel-related materials are located on two different movable book carts. Several bookcases and a file cabinet containing teacher materials and supplies are found to the left of a large blackboard on the east end of the room by one large teacher desk. Ceiling wires provide added space to display student work or factual materials. Manipulatives, learning games, and class novels are located above coat and hat "cubbies" which also serve to house individual storage tubs. Individual student tubs are used to store coats and gym shoes. Classroom A is fully carpeted to suppress noise. There are no doors in the pod due to the fact that it was built, and once used, as a middle school. It affords the observer adequate lighting and ventilation and an enriched learning environment for young minds.

Classroom B is a fourth grade classroom located at the southwest corner of Pod C. The room is carpeted to reduce the volume of sound entering the hallway. The classroom has two elongated windows with small sections that open for ventilation. This room also has no door.

The students sit in individual desks arranged in groups of three and four students to facilitate cooperative learning. The room consists of two storage cabinets, a bookcase filled with a large genre of books, a table for reading and projects, one computer, a sink, one GeoSafari, one MathSafari to enhance and reinforce learning, and a movable cart with learning games and puzzles. The east wall displays numerous posters, banners, and interactive displays. The north wall consists of a storage area for tubs, school supplies, and teaching materials. The students' work is displayed from the ceiling and on bulletin boards in the hallway.

District

The district's mission statement reads:

> As a partnership of students, staff, and community, we will focus
> our resources on creating a caring environment which empowers all
> students to develop their fullest potential and become productive,
> socially responsible, life-long learners. With the combined efforts
> of district administrators, teachers, and educational consultants, an
> intense inquiry resulted in targeting the district's instructional beliefs
> concentrating on the constructivist theory of learning. The newly
> developed instructional beliefs and constructivist theory continue to
> drive instruction in the district. The academic expectations align
> curriculum with the state standards (Five Year District Improvement Plan,
> 1996-97).

The district is made up of twelve educational facilities. These include one high school, two middle schools, seven elementary buildings, one off-campus alternative education program, and one preschool building which also houses a newly developed K-3 choice program. The high school has a total enrollment of 1,483 students with a graduation rate of 73.2%.

The pupil/teacher ratio for the high school is 18.3:1, and the elementary pupil/teacher ratios 15.6:1. Instructional expenditures per pupil is $3,453.00. The average teacher's experience in the classroom is 16.0 years, with 66.3% holding a bachelor's degree and 33.7% holding a master's degree or above. An average teacher's salary is $38,008.00, and the average administrator's salary is $61,700.00. All of the above teacher information includes specialized teachers in the field of physical education, art, music, and library, plus the regular classroom teachers (Report Card, 1999).

In the 1996-97 school year, the district took major steps to develop a five-year improvement plan. This plan is based on the instructional beliefs and constructivist theory mentioned earlier in this report. The instructional beliefs encompass the following:

- instruction must be relevant and based on high expectations
- climate must foster and encourage risk-taking
- students have the right to a classroom environment conducive to learning
- instruction must address the diversity of our student and community populations and must meet our students at their educational level and provide successes that will advance them
- the school needs to provide frequent and consistent positive messages regarding each students worth and ability to learn and use of technological skills is essential
- all students should learn and practice the skills needed to work cooperatively and also respect the physical, emotional, and intellectual well being of others
- education of the whole child is necessary
- students learn in a variety of ways - good instruction should incorporate a variety of teaching methods to accommodate these styles (School Improvement Plan, 2000).

The school district conveys information to the community through a variety of avenues which include; a quarterly district newsletter, a school report card, local newspapers, radio, and student and staff publications. Parent-teacher conferences are held twice yearly to allow parents and teachers to communicate student progress (School Improvement Plan, 2000).

Community

Centrally located in the Midwest, this community is imbued with agriculture, commerce, and transportation. It offers many cultural opportunities not often associated with a town of this size which consists of a total population of 33,500. The population is made up of 87.9% White, 8.7% Black, and 3.4% other. It boasts a major shopping mall and a historical downtown district. It is enriched with stately Victorian homes, a renovated public theater, and numerous historical sites dating back to the 1800's. There exists a four-year liberal arts college, a regional community college, and a public library. Cultural activities include a children's museum, a symphony orchestra, a civic art center, numerous choirs, and drama opportunities (School Improvement Plan, 2000; Area Chamber of Commerce, 1999).

Recreational and social opportunities include 952 acres of public parks and playgrounds. Swimming pools, a water park, golf courses, tennis and racquetball courts, as well as an indoor hockey rink, bowling alley, softball and baseball diamonds, a public lake and campground facility provide many recreational activities for the youth of the community. Churches of several denominations are dispersed throughout the community (Area Chamber of Commerce, 1999).

Single-family homes make up a large portion of this community. Recent housing developments have included three apartment complexes, an age-restricted retirement community made up of four components, and condominiums. In addition, new custom homes steadily increase in the community. Middle and low-income housing are also available to those who

qualify (Area Chamber of Commerce, 1999).

The unemployment rate is concurrent with the national trend which is in the 3-5% range. New "welfare-to-work" programs are in place to train and develop the work force. This was accomplished through team effort by area educational institutions and businesses. The per capita income for the county in 1996 was $19,868.00 (Area Chamber of Commerce, 1999).

Major manufacturers and distributors exist in this community. Some include the manufacturing of appliances, rubber, metal buildings, clothing, cast iron, beverages, and art supplies. New industrial parks provide opportunities for both old and new businesses to expand. Non-manufacturing businesses employ a large proportion of the community's work force. These include a mental health facility, educational institutions, hospitals, a major railroad, and a correctional facility.

<div align="center">National Context of the Problem</div>

According to Harris (1992), the framework of education has changed:

> Industrial America introduced the factory model of education, applying
>
> advanced production methods to schools. Classrooms became stops on
>
> the assembly line of knowledge. Work was segmented, much as assembly
>
> line work in factories segments the production process. Teachers neatly
>
> compartmentalized learning. That is the model which is still with us
>
> today. But in the meantime, America has changed. We are entering a post-
>
> industrial era, one of information and service, rather than production. The
>
> old ways, the tried and true, no longer work, or at least no longer work
>
> as well. Talk of a national curriculum, given the current fractured nature of
>
> schooling in America, does not offer a clear way out. Such a curriculum
>
> would likely become just something more to add onto what's there,

rather than replacing it. The effort to restructure our nation's schools

will meet with only minimal success until or unless we deal with problems

and issues associated with school as an institution. Restructuring efforts

will be ineffective if they do not deal with the issues that involve the way

teachers and students interact inside the classroom. It is not the length of the

school year, or who makes the decisions on curriculum points, or

whether learning is subject-or-project-oriented that really counts.

Rather, it is in the one-to-one relationship between every student

and his teacher. And that too often is overlooked in talk of restructuring

learning (p.3).

Risinger and Garcia (1995) reported that criticism of the social studies gains momentum

from the results of national tests that magnify students' failure to achieve at expected levels.

They go on to say that national test results, along with the negative commentary by students,

have caused social studies teachers to reconsider their teaching of social studies.

Educators continue to research new methods of instruction to meet the needs of a

changing society. Current teaching methods have failed to address multiple intelligences in

enhancing student achievement in social studies. According to the National Assessment of

Education Progress 1994 Geography Assessment the proficient achievement level was reached

by only twenty-two percent of fourth graders (National Assessment of Education Progress;

Geography Report Card, 1996). Roughly seventy percent of students were at or above

the Basic level. The School Report Card reports that twenty-eight percent of the school's

students do not meet state goals in social studies (School Report Card, 1999).

An article by White, Blythe, Gardner (cited in If Minds Matter, Vol. 2, 1992) stated that Gardner's Theory of Multiple Intelligences maintains that we all possess several different and independent capacities for solving problems and creating products and that, inevitably, many students are neglected by the standardized approach to education.

Hope (1996) submitted that in order to transform social studies teaching, teachers need to implement experiential learning into the classrooms. Thus, students will become more active learners. Lounsbury (cited in The Social Studies, July/August, 1996) commented, "The reason for the students' lack of respect for social studies was the teacher's failure to articulate meaningful and relevant objectives." For decades social studies has been rated as one of the least liked subjects in the curriculum (Shaughnessy and Haladyna, as cited in The Social Studies, 1996).

According to Chapman (1993), "It is our responsibility as educators to find each students particular way of learning. Putting the theory of multiple intelligences into practice can help this philosophy become a reality. We must learn how to develop all of our intelligences and embrace the philosophy that all students are 'learner-abled.' "

Chapter 2

PROBLEM DOCUMENTATION

Problem Evidence

Previous State Goals Assessment Program test scores, that date back as far as 1993, reveal that students testing at the fourth grade level in social studies scored between 7% and 28% at the "Does Not Meet" level (DNM) state standards. Table 1 summarizes the results of the school's assessment statistics:

Table 1

IGAP Social Studies "Does Not Meet" Level State Standards for Fourth Grade at Site A

Years Tested	% of Fourth Graders "Does Not Meet"
93/94	13%
94/95	10%
95/96	15%
96/97	7%
97/98	8%
98/99	28%

State test scores could not be compared for the year 1999-2000 due to the change in the IGAP to the State Standard Achievement Tests (ISAT). Test scores at the targeted school clearly indicate that a significant number of fourth graders do not meet the standards required by the state.

Figures 1 and 2 show the fourth grade classroom teachers, at the targeted research site, have also found that social studies seems to be the least favorite and most difficult subject to teach at this grade level. Evidence of this can be found in opinion polls, standardized and teacher-made assessments, group assignments and projects, and overall quarterly grades received on report cards. Also, student surveys given at the beginning of the school term revealed that social studies was, by far, the most difficult content area for students to meet with success. (Appendix A)
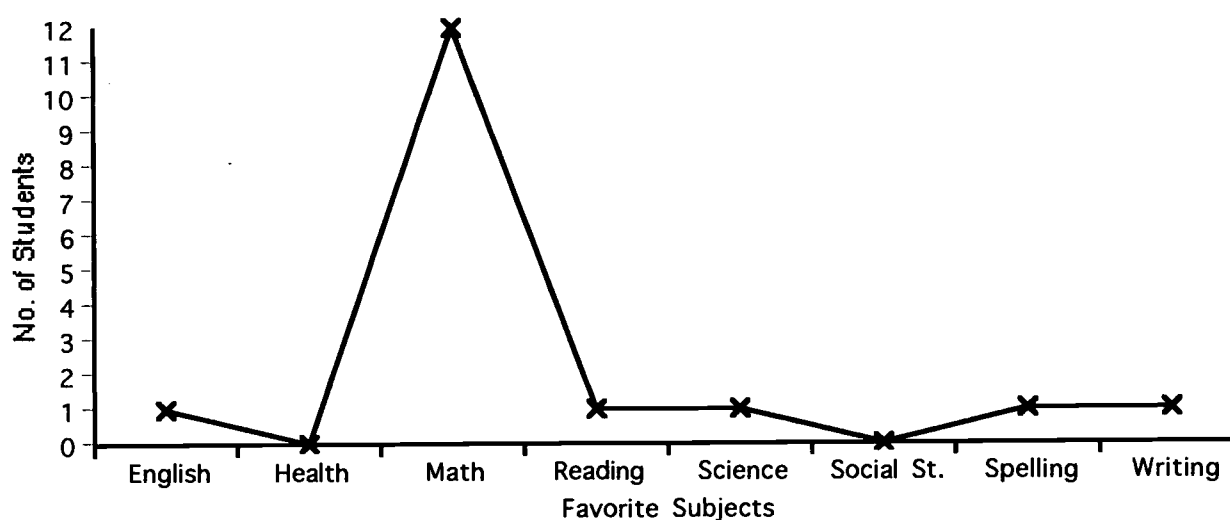

Figure 1. Student survey on favorite subjects in Classroom A.

Figure 1 shows students in Classroom A overwhelmingly chose math as their favorite subject (70.3%). It seems that working with numbers is more fun and less threatening to the students. Working with manipulatives in math on a daily basis may also have been a contributing factor as to why so many students chose this subject as their favorite. All of the other subject areas received about the same score reflecting student interest in those areas. Yet, social studies received a 0% rating when compared to other subject areas at this grade level.
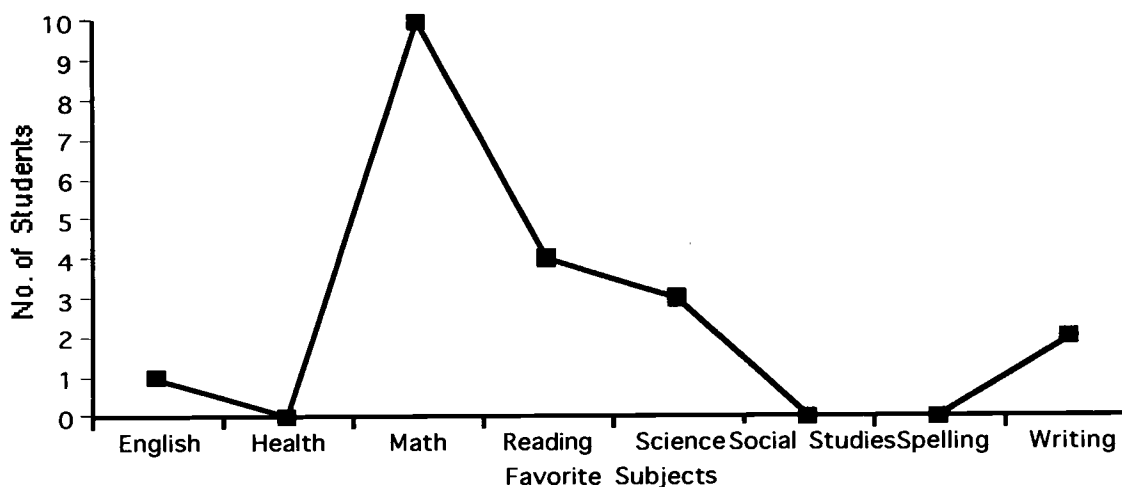
Figure 2. Student survey on favorite subjects in Classroom B.

Classroom B also shows a tremendous percentage of students choosing math as their favorite subject (50%) as shown in Figure 2. The line graph shows more students enjoying reading as their second favorite subject and science and writing as more enjoyable than English. Social studies is at the 0% level.

In Figures 1 and 2 students in Classroom A and Classroom B, when asked to rate favorite subject to least favorite subject, both rated social studies in the 0% range. Thirty-seven fourth grade students were involved in this study over a 16 week time period. The results clearly indicate that social studies is at 0% in both Classroom A and Classroom B. Thus, it is not represented on either line graph. It stands as the least popular subject among fourth graders in the two targeted classrooms at this particular cited school even though students were taught social studies the previous year in third grade. Further analysis shows that when students were asked, "Why is social studies one of the least favorite subjects?" comments included some of the following:

• "Social studies is the hardest subject for me."

• "It is so boring because you have to remember so much stuff.'

- "I don't like it because you have to read, and that's what you do."

- "My mom said it was her worst subject, too."

- "It's not as much fun as math."

- "Social studies isn't fun because I already know everything."

- "I don't like to do maps."

- "All we do is read and write it."

- "I don't like it cause it's too hard."

- "I don't like social studies because the assignments are too long and too hard."

- "I do not like it because I always get bad grades in it." [sic]

The above comments made by students in Classroom A and Classroom B also show a dislike of the subject content taught in social studies. Student reasons vary from "difficulty" to "boring". Many students felt the subject was just too much work. The comments made by students in Classroom A and Classroom B followed the survey on favorite subject. (Appendix B) The survey clearly reveals social studies as again being highly unpopular among fourth graders at the targeted school and the most difficult of all content areas of learning at this age level.

Another survey followed asking students how they best learn and remember material presented. This survey included each of those 37 students studied. The results show that reading the material themselves and taking tests are the most difficult ways of learning. When presented with choices of how they would like to learn, most students prefer visual/spatial. That is to say, they enjoy drawing, doing maps, and researching through the use of other resources, such as computers and resource materials that display easier reading material and pictures. (Appendix C)
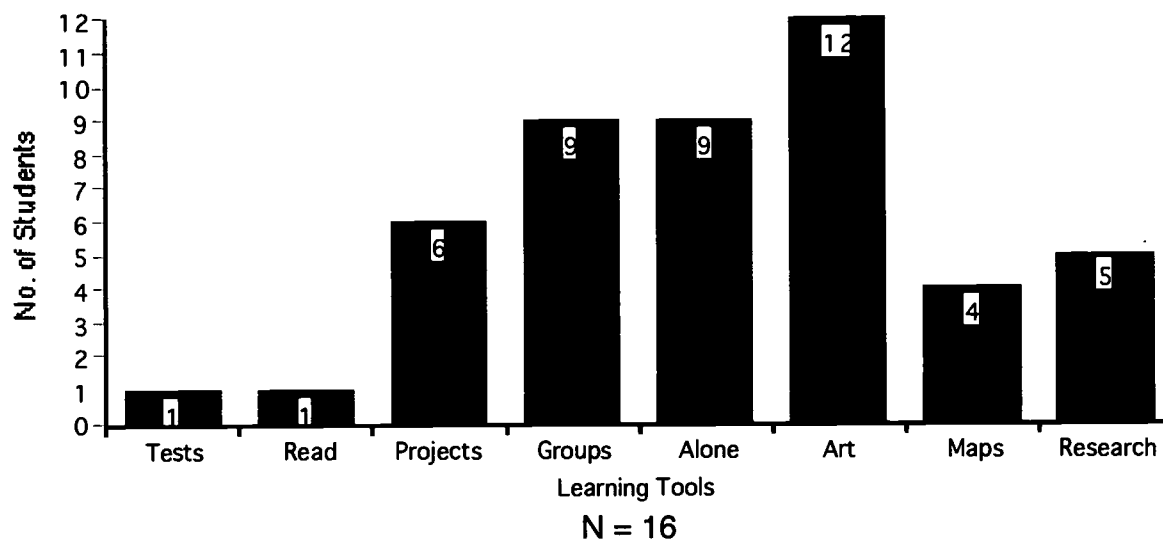
Figure 3. Student preferred pathways to learning in Classroom A.

Figure 4. Student preferred pathways to learning in Classroom B.

In the previous surveys, students in Classroom A and Classroom B were asked to identify favorite activities as a way to learn new information presented in social studies. Students were given the opportunity to respond to more than one favorite activity. In Classroom A and Classroom B shown in Figures 3 and 4, students' input clearly indicates a

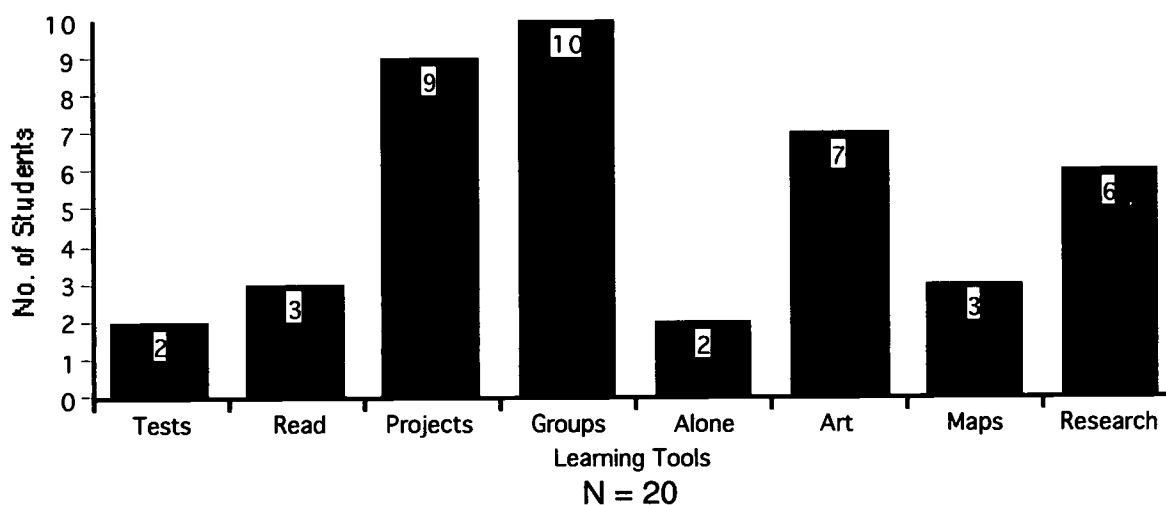dislike of traditional test-taking and reading of the text as a way of gaining and showing

knowledge of material presented. Students' preferences reflect interest in multiple intelligences

activities and cooperative learning. Students chose projects, group work, art work, and

researching through the use of the internet or resource books as ways they would like to learn.

Another survey of students in Classroom A and Classroom B was given to determine

prior knowledge in social studies. The following graphs tested knowledge of landforms and

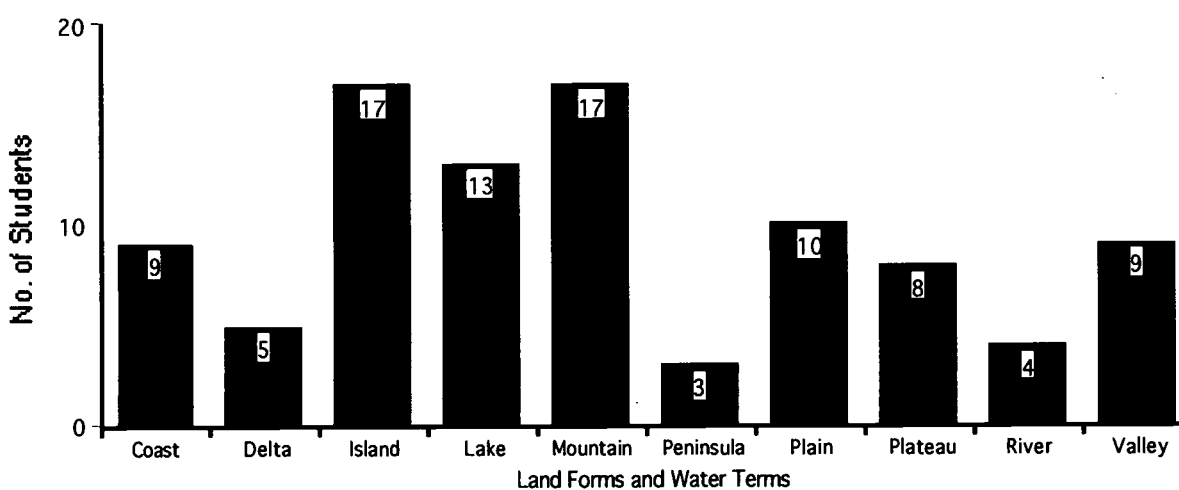regions in the United States of America. (Appendix D)

Figure 5. Students' successful identification of landforms and water terms in the United States in
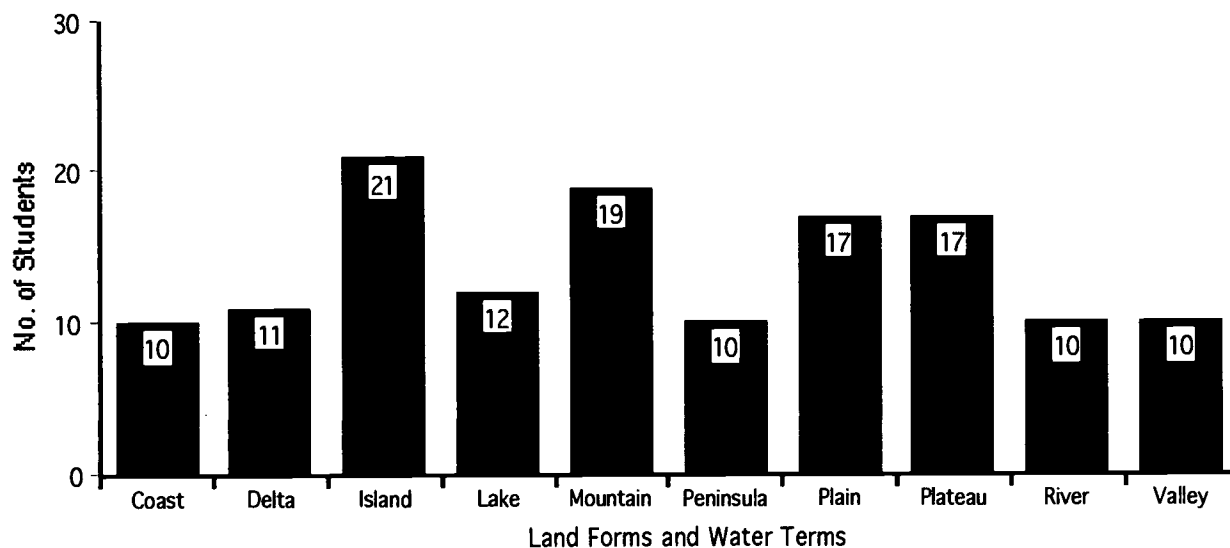
Classroom A.

Figure 6. Students' successful identification of landforms and water terms in the United States in Classroom B.

Information given on the graphs from Figure 5 and Figure 6 indicate little prior knowledge of landforms and water terms in both Classroom A and Classroom B. The results of this survey show that little information was transferred from previous years.

In separate surveys, students in both classrooms were asked to recognize terminology related to regions within the United States. The final surveys given in Classroom A and Classroom B asked students to identify regions and major rivers in the United States and to identify the states in the Northeast (Appendix E).

Figure 7. Students' successful identification of regions of the United States in Classroom A.

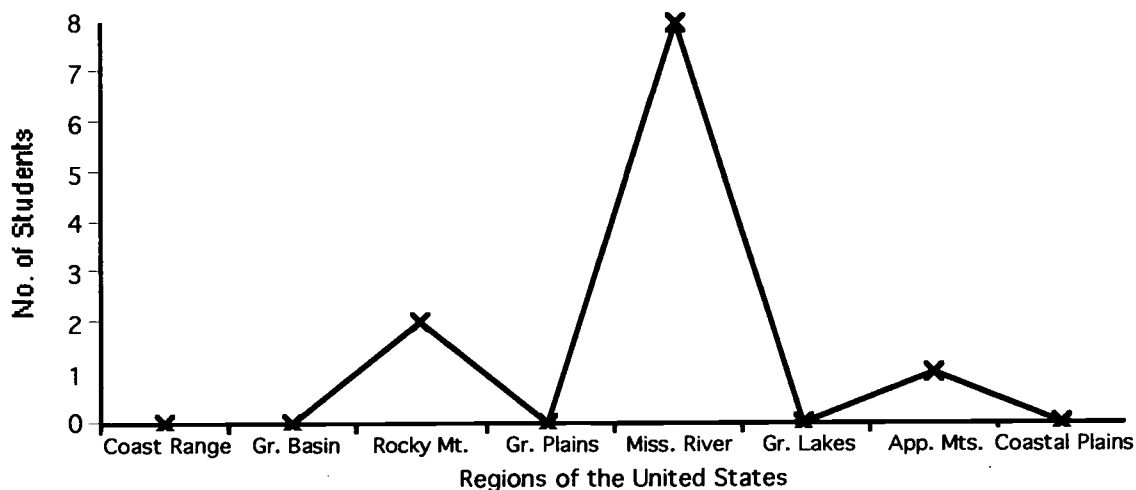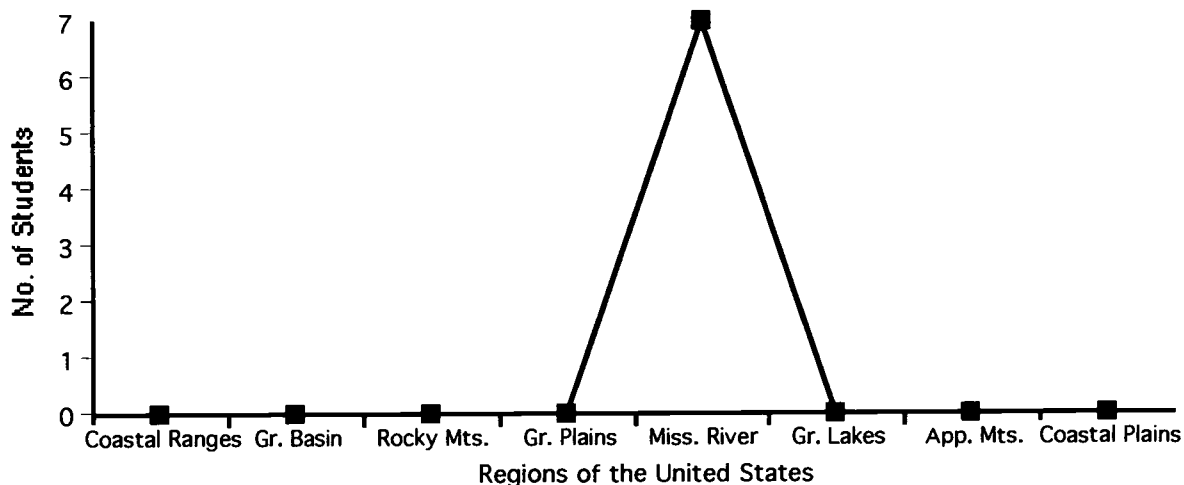Figure 8. Students' successful identification of regions of the United States in Classroom B.

The information from Figure 7 and Figure 8 clearly illustrates that the Mississippi River is the only area in the United States that students could easily identify. Students were not able to identify the major regions in the United States.
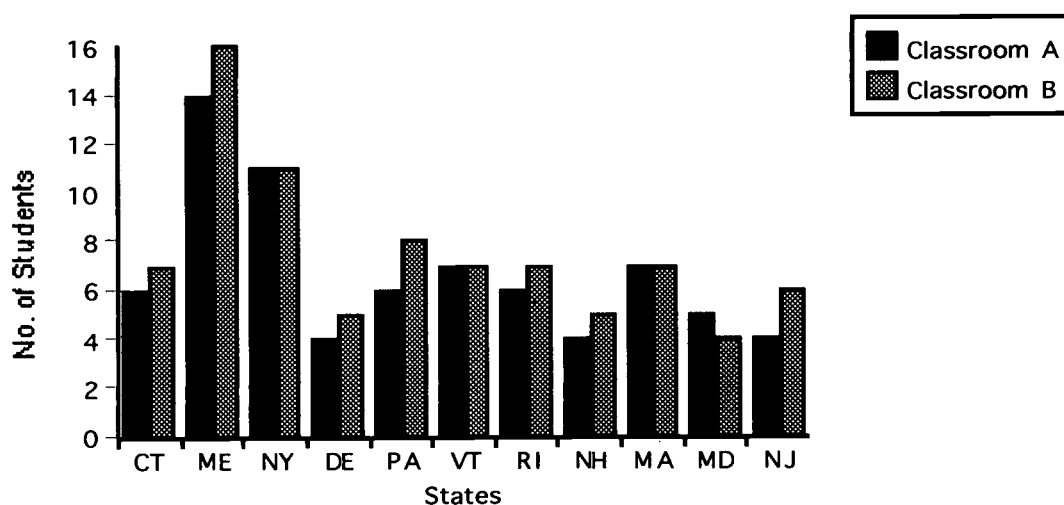
Figure 9. Students' successful identification of the states in the Northeastern United States by Classroom A and Classroom B.

The graph in Figure 9 clearly reveals minimal knowledge of subject matter in both classrooms tested. Data collected from previous IGAP scores indicate that students are not able to transfer information and facts learned in previous school years as shown in Table 1.

The problem of low scores in the social studies curriculum and in achievement scores carries beyond the targeted school and grade level, as shown in the state standardized test scores over the past 10 years as mentioned previously. District and state level scores also depict a "challenge" as to how to engage learners at this level to meet with success and also meet state level standards in the content area of social studies. According to Burke (1992), students live in an age of information overload, an emphasis on standardized test scores, societal drug use, physical and mental abuse, increasing violence, and economic insecurity.

Probable Causes Literature Review

Students complain the subject is boring or too difficult. Teachers wring their hands because test scores do not meet administrative and state expectations. The most obvious cause of student dislike in the content area of social studies and low test scores arises from context reading level of the textbooks. The comments made by students in both Classroom A and Classroom B range from terms such as "difficult" to "boring." Many students use the term *boring* when reading is too difficult for them to pronounce and comprehend on their own. The reading level of the fourth grade social studies text can range from a grade level of 4.5 to as high as a grade level of 7.0 in this particular subject. How can educators possibly expect students to read and comprehend material 2-3 grade levels above their reading ability level?

According to Hill (as cited in Burke, 1999):

The role school administrators play in setting standards for classroom assessments and monitoring their effectiveness is minimal. Like classroom teachers, most administrators have had little or no training in assessment themselves; therefore, they cannot provide the guidance to help teachers develop and use appropriate assessments that can meet the needs of all of the students. (p. XI)

If current teaching methods were reformed, student understanding of material (having a sufficient grasp of concepts, principles, or skills) would equate to better problem solving skills. According to Black (1998), school systems need to pay more attention to enrichment opportunities that can unlock a child's mind and heart. Former Secretary of Education Richard W. Riley (as cited in Black, 1998) is quoted as saying: "American education is now at a turning point-one that requires us to reach beyond current programs and practices."

According to Gardner (1993) there are several reasons why schools are failing to educate for understanding. One reason is what Gardner calls the "correct answer compromise." Educators assign material to be read and test students for understanding. Memorization of written material then equates to understanding. Another hindrance to student understanding is what Gardner (1993) calls "pressure for coverage." Curriculums overload educators with too much to teach. Students do not have the time to fully understand and investigate the concepts presented. In an interview, Gardner (as cited in HSM, 1998) stated that students who get good grades and have acquired a great amount of material often cannot use the knowledge or skills in application to the real world. It means we may get high test scores and we may get answers from a textbook, but we've created what Whitehead called "inert knowledge" - knowledge that can't be mobilized and used in new situations according to Gardner (1998). A final hindrance to student understanding is what Gardner (1993) calls the "cognitive Freudianism." Most students think as a child regardless of the age. According to Gardner:

> Freud, of course, said that no matter how old we get, we still fight the battles we fought in childhood with our parents, our siblings, and our peers. I want to argue that what Freud said was true in the cognitive realm as well: Most of us continue to think in most domains much in the way we did when we were 5 years old, no matter how old we get. In nearly every individual there exists the mind of a 5-year-old child struggling to get out. (p. 22)

Education places restraints on student thinking through laws, regulations, and disciplinary constraints. Local curriculum administered by school boards restricts what is taught in the classroom reflecting the lack of students' critical thinking skills.

In a study done by Reiff (1997) concerning the relationship between cultures and education, the researcher suggests that academic achievement of some young adolescents indicates

educators need to be more culturally responsive. A student's cultural background significantly influences the development of the learner's intelligence by defining what is valued. Schools have extensive programs to identify student deficiencies but have failed to identify strengths, intelligences, and cultural backgrounds and use these strengths to build a better curriculum. School personnel must ensure that assessment procedures are fair to all students, that they do not discriminate against members of any ethnic, racial, or gender group or against students with disabilities (Assessment Handbook, Illinois State Board of Education, 1995).

Testing results have shown that the use of standardized tests to assess the intelligence of culturally diverse groups is not an effective tool. As in other National Assessment of Educational Progress (NAEP) assessments, statistically significant differences existed in the performance of major subgroups of the population whentested in social studies. According to the 1994 Geography Report Card (1996), roughly 70% of students were at or above the basic level and 22% of fourth graders were at the proficient achievement level. Students were also asked to indicate whether geography was their favorite subject. Only 26% of the fourth graders tested identified social studies as their favorite subject. Research has shown that standardized tests tend to measure only two of the eight intelligences- verbal/linguistic and mathematical/logical. Students with stronger intelligences in other areas do not do as well on these tests. According to the Assessment Handbook (ISBE, 1995), assessment procedures must be administered uniformly to all students. Otherwise, scores will vary due to factors other than differences in student knowledge and skills.

Hargreaves (1997) argues that educational change efforts need more depth as well as more breadth. Assessment standards, reading methods, higher-order thinking skills, problem solving- all address only what goes on in children's heads. He argues that theory and practice don't meet the needs of children, teachers, and even parents. It doesn't move them to do better. He further

states that they fail to develop what Goleman (as cited in Hargreaves, 1995) refers to as emotional intelligence. Hargreaves believes that this adds value to, not only student learning, but teacher professional learning. Educators today face many dilemmas in the classroom. They range from how to meet the needs in educating young minds to how to hold the interest of students in order to gain that knowledge.

Chapter 3

THE SOLUTION STRATEGY

Literature Review

Tommy seems uninterested as the class discusses the social studies lesson they have been reading. He fidgets in his seat, plays with his eraser, and finally settles down to sketching cars and dragons. Students with similar learning difficulties are called "lazy," others, "slow." Student lack of interest ultimately leads to poor assessment. Tommy's teacher might have captured his interest in the lesson if the theory of multiple intelligences had been incorporated into the lesson plan. According to Gardner's study (as cited in Black, 1998), individuals have a unique, idiosyncratic pattern of strong and weak intelligences, and each person can with time, opportunity, and experience, get better; in effect, get smarter in each area. Gardner's theory of multiple intelligences has been implemented into numerous school curriculums across the country and has been found by many to be an effective, interesting way to reach more of the students in today's classrooms. Gardner states that, given the variety of student intelligences and learning styles, teachers must design lessons to reach all students in ways they can understand (NEA, 1997). Improving student achievement in social studies includes teacher awareness of the multiple intelligence theory, enhancing the curriculum, awakening students' awareness of their own intelligences, and aligning student assessment to the different intelligences.

As educators we must continue to find successful and effective ways to teach young people, keeping in mind the cultural diversity of children and adolescents. Educators can promote educational equity practices by addressing both students' multiple intelligences and cultural influences on learning (Reiff, 1997). Research strives to find new and innovative strategies to attain individualized methods of absorbing information and at the same time sustaining student interest in the learning process. According to Cardellichio & Field (1997),

when we are born, our brains have the ability to consume a large variety of stimuli, yet over time we develop patterns and contain information which only relates to our individualized lives. In knowing this, they go on to say that it would be to the advantage of educators to provide a variation in ways of distributing stimuli which strengthens brain cells much like exercising builds muscle cells.

In an interview Gardner stated that, " Multiple intelligences is a scientific theory." (HSM, 1998, p.50). All human beings have developed many intelligences as humans have evolved. According to Martin (1995), Gardner and his associates believe that human cognitive competence is better described in terms of a set of abilities, talents, or mental skills which are called "intelligences." These intelligences vary in strength from human to human. Gardner also states, "We differ for genetic reasons, and we differ because we live in different environments and have different goals and motivations" (HSM, 1998, p. 50). Gardner's theory of multiple intelligences is based on extensive research in child development, cognitive skills under conditions of brain damage, psychometrics, changes in cognition across history and within different cultures, and psychological transfer and generalization (Silver et al., 1997).

Gardner believes that normal humans have at least eight intelligences. His multiple intelligences theory consists of the following:

Verbal-Linguistic Intelligence	involves ease in producing language, and sensitivity to the nuances, order and rhythm of words.
Mathematical-Logical Intelligence	relates to the ability to reason deductively or inductively and to recognize and manipulate abstract relationships.
Spatial Intelligence	includes the ability to create visual-spatial

representations of the world and to transfer them

mentally or concretely.

Naturalist Intelligence
is the latest intelligence added by Gardner. It

includes the capacity to recognize flora and fauna,

to make distinctions in the natural world, and to

use the ability productively in activities such as

farming and biological science.

Musical Intelligence
encompasses sensitivity to the pitch, timbre,

and rhythm of sounds as well as responsiveness

to the emotional implication of these elements of

music.

Bodily-Kinesthetic Intelligence
involves using one's body to solve problems,

make things, and convey ideas and emotions.

Interpersonal Intelligences
refers to the ability to work effectively with other

people and to understand them and recognize

their goals, motivations, and intentions.

Intrapersonal Intelligences
entails the ability to understand one's own

emotions, goals, and intention

(Nicholson-Nelson, 1998).

White, Blythe, and Gardner (as cited in Costa, Bellanca & Fogarty, 1992) affirm that
individuals use their stronger intelligences to help solve problems, but the intelligences are
educable. Students can strengthen areas of intelligences that are less frequently used.
Intelligences almost never operate in isolation but work together in solving problems. According
to Gardner (1983), "Only if we expand and reformulate our view of what counts as human

intellect will we be able to devise more appropriate ways of assessing it and more effective ways of educating it."

In Accelerated Schools, educators are challenged at the state level to become risk-takers and to challenge the children in the classrooms to become the same. Educators provide powerful lessons at all age levels in the elementary schools that challenge students to take those risks without fear of defeat in front of their peers. Only positive rewards are incorporated into the curriculum for reinforcement for taking risks.

Educators need to enhance the school curriculum with multiple intelligences activities that will enrich student learning and open doors to critical thinking and understanding. According to Black (1998), we need to help kids reach the intuitive level of knowing where they can say they "just know." The goal, then, is for students to have a total understanding of material presented through multiple venues. Experienced teachers can reach a diverse intelligence population by teaching each part of the curriculum in many different ways. A variation of the same lesson using a different intelligence provides an opportunity for students to use their own strengths and intelligences and eventually attain total understanding and transfer of the information (Guild & Chock-Eng, 1998). Students can also reflect on their own strengths and choose centers that focus on that intelligence. According to Armstrong (1994), " the master code of this learning style model is simple: for whatever you wish to teach, link your instructional objective to words, numbers or logic, pictures, music, the body, social interaction, or personal experience."

In Weber's study students working together using multiple intelligences are actively engaged learners. Students work together to discover relevant connections between their own world and the world of knowledge (Weber, 1999). Caine & Caine (1997) state that when the brain is fully engaged, the student acquires knowledge that authentically interacts within the real world. Helping students understand their own strengths and how best they learn is as important

as the instructor identifying the students' intelligences (Sweet, 1998). Gardner's Project Zero explored how to educate for understanding. The central theme focused on "generative ideas." Engaged students actively involved in their own learning are focused on ideas that are central to a topic and can approach these ideas from a variety of perspectives (Gardner, 1993). Educators must spend more time on fewer concepts approaching them in many different ways and giving students many chances to master understanding (HSM, 1998). Students will be self motivated and engaged if given the intelligences tools to probe for understanding.

The application of multiple intelligences techniques in classroom instruction and student learning ultimately leads to the question of assessment. Until recent years intelligence testing (I.Q.) that first measured human intellect and compared performances caused great excitement and enthusiasm among psychologists throughout society (Gardner, 1983). Gardner also states that most scholars in and out of the field of psychology are now convinced that enthusiasm over intelligence testing (I.Q.) has been excessively done and that there are many limitations to the degree that intellect is tested. Gardner stresses the issues surrounding how I.Q. scores are interpreted. Most turn out to be strongly mathematical in nature and not susceptible to empirical resolution (Gardner, 1983). Using multiple intelligences techniques, teachers could then become more of a facilitator than an instructor or "giver of knowledge." Thus, instead of feeding information, teachers accept a new role of providing guidelines for teaching and assessing, setting up high interest level lesson plans in given areas of learning and becoming a coach or encourager in the risk-taking realm of learning. Instead of the traditional rote way of gathering data, students build or expound upon given facts and present what they have learned in a way that is comfortable for them. Teachers' assignments also differ greatly from the traditional way of assessing to a more abstract way of gathering learned material. Students become stronger in relating material to the real world and realize its connection and relevancy to everyday living.

The end product then being, raising academic potential and achievement scores in all culturally diverse groups.

In reflecting on student achievement, Greenhawk (1997) affirms that in putting Gardner's theory into practice in their school curriculum over a five year span, raised students' confidence substantially. The results far exceeded the expectations. According to Martin (1995), educational institutions need to shift from standardized tests to an emphasis on projects. Using projects as a means of assessment provides students with opportunities to use their dominant intelligences. Standardized tests are limited to testing the linguistic and logical-mathematical domains only. Paper-and-pencil tests should not be the only means of assessing all of the intelligences. Portfolios are an excellent assessment tool an educator can use to collect examples of students' understanding of concepts through multiple intelligences (Hoerr, 1994). Progress reports can become a means to assess intrapersonal and interpersonal intelligences. Student profiles are also an effective assessment tool used to identify students' intelligences and ensure that all intelligences are being used in the classroom Eventually the goal of all educators, using multiple intelligences in the classroom, is to have the students "able to do a variety of thought-demanding things with a topic-like exploring, finding evidence and examples, generalizing, applying, analogizing, and representing the topic in a new way according to a Perkins & Blythe study (as cited in Hoerr, 1994).

In conclusion, by adapting the social studies lessons around students' interests and strengths, students are able to research and pursue areas of interest which hopefully will engage higher-order thinking skills, thus developing self-regulating students. Helping children develop specific strengths needs to be balanced with opportunities to develop all the skills they need to succeed in school. (Hatch, 1997). Students take responsibility for their own learning and evaluate their own work. The New City School in St. Louis, Missouri immerses its student population in

Gardner's multiple intelligences theory. According to Hoerr (1994):

> We have found that multiple intelligences is more than a theory of
>
> intelligence; it is, for us, a philosophy about education with implications
>
> for how kids learn, how teachers should teach, and how schools should
>
> operate. Our work with multiple intelligences has empowered teachers
>
> to begin their planning by looking at kids' strengths. Most important,
>
> it has helped more of our kids succeed.

Project Objectives and Processes

As a result of using various teaching styles and incorporating the multiple intelligences into the social studies unit of study, the goal of the teacher is to enhance and also improve student performance. The targeted group will be two fourth grade classrooms both located at the same facility. These objectives will be met during the time period of August, 2000 to December, 2000. The objectives being used will increase student interests and thus student learning which will increase student achievement scores. In order to accomplish these goals, the following processes will be followed:

1. The researchers will administer surveys at the beginning of the school school year. The purpose of collecting this data from the parents and the students is to acquire background knowledge of individual strengths and interests.

2. A series of multiple intelligences lessons, projects, and activities will be implemented into the social studies curriculum during this intervention time allotted.

3. A combination of the surveys, interventions of various activities, teacher

observations and checklists, and a post test will be used to assess student

knowledge and multiple intelligences of the students.

Project Action Plan

Before School Begins

Send parent consent forms and introductory welcome letters.

Teachers will prepare surveys for distribution.

Compile resources for explanation of parents' multiple intelligences surveys at

Open House. Resources will consist of charts and posters, examples

of learning styles, and pictures of examples of each type of multiple
intelligence.

Week One: - Landforms

Administer student surveys of multiple intelligence traits.

Send parent MI surveys home with students.

Pretest on content area to acquire prior knowledge of subject.

Introduce multiple intelligences to class and brainstorm activities associated

with each.

Have students interact with activities that explore the different intelligences.

Week Two:

Introductory game to assess prior knowledge of landforms (hook).

Teacher directed lesson (KWL)

Form cooperative groups.

Students create salt maps of eastern one third of U. S. (physical land features)

Research physical features in cooperative groups using student log sheets and

available resource materials.

Send newsletter updating parents on MI in social studies.

Week Three:

Continue cooperative researching of middle one-third section of salt map.

Week Four:

Continue cooperative researching and construction of final one-third of

salt map.

Teacher observations to identify individual intelligences utilized by students.

Send second newsletter on student MI activities.

Week Five:

Evaluation of Northeastern United States landforms.

Lock and Dam instruction and cutaways

Students will participate in a field trip to a lock and dam.

Week Six: - History

Teacher directed lesson (KWL). Present assessment tool.

Form new cooperative groups.

Students choose historical area of interest and research for information within

groups.

Students select preferred method of learning and choose coinciding activity.

Send third newsletter.

Week Seven:

Continue cooperative researching and group activity work.

Teacher observations to identify utilization of intelligences in groups.

Presentation and evaluation of group activities.

Week Eight: - Cities

Study and complete a graphic organizer of the major cities in the Northeast

including terminology of urban life.

Students locate data and design a graph of major northeastern cities.

Teacher observation and assessment.

Student-generated newsletter sent home.

Week Nine: - Urban Problems

Research major city issues and problems.

Students participate in city council meeting and present issues - debate.

Teacher evaluation.

Week Ten: - Map Skills

Introductory game (hook).

Use salt maps to teach longitude and latitude.

Design and include compass rose and map key to salt map.

Week Eleven:

Teacher-directed lesson on special purpose maps.

Graph and design student choice of special purpose map - individualized

assessment.

Cooperative group activity: generate three story problems related to

above activity.

Review of states and capitals of the Northeast.

Teacher observation to identify individual intelligences utilized on above

activities.

Week Twelve: - Natural Resources

        Students locate information needed in computer lab and make table/grid

        depicting natural resources of region.

        Students read nonfiction selection on northeastern natural resources and

        sequence steps in a flow chart format.

Week Thirteen:

        Cooperative groups continue working on flow charts.

        Teacher observation and student assessment.

        Newsletter sent home.

Week Fourteen: - Review of northeastern states

        Students choose a northeastern state of interest and use what they have

        learned to design a mobile displaying relevant facts of the state.

        Teacher facilitates and observes.

Week Fifteen:

        Individual presentations on final projects with students assessing student

        projects.

        Parent newsletter sent home.

Week Sixteen:

        Post test administered to evaluate effectiveness of using multiple intelligences in

        social studies.

Methods of Assessment

Prior to administrating surveys, a pretest will be given to students at the targeted school
in Classroom A and Classroom B. Students will be assessed on geographical prior knowledge
and material covered during the sixteen week intervention. In order to assess the multiple

intelligences of the targeted classrooms and interest level in the content area of social studies, surveys will be taken of parents and students that are involved in the study. Parental surveys will be given to parents or guardians during Open House in September. The multiple intelligences survey collects relevant information on parent input of student strengths and interests. This will help assist in establishing a foundation on which to build lessons and activities centered around subject area. Student surveys will also provide information relating to strengths and interest level of subject area. After a 16 week intervention period, researchers will be better able to determine various multiple intelligences of targeted students and then offer a variety of activity choices within the planned lessons. Coinciding with this, researchers will keep ongoing records through observations and accurate record accounts of student interests and choices of methods of learning. Results will be tabulated from a teacher created checklist showing multiple intelligence strengths and weaknesses. Individual rubric assessments will be administered throughout given time period. Students will be given the opportunity to choose a multiple intelligence activity or project as a final assessment of each unit studied. Rubric criteria will be distributed prior to all project assignments. A final post test will be given to compare results from pretest on knowledge gained in social studies area. Information from the pretest and the posttest will be compared and recorded to analyze progress. Newsletters will be sent home on a regular basis to keep parents informed of child's progress. Information on the use of the multiple intelligences will be included to keep parents informed of classroom activities in this area.

CHAPTER 4

PROJECT RESULTS

Historical Description of the Intervention

The objective of the intervention was to enhance student achievement in social studies through the use of Gardner's multiple intelligences. The core of the intervention was the use of instructional techniques based on student multiple intelligence strengths in Classroom A and Classroom B.

Students in both classrooms were given opportunities to choose from various projects, research, working cooperatively or individually, and using textbooks and technology as ways of learning. Teacher assessment criteria, also, included a variety of multiple intelligence choices related to the unit of study in social studies.

The intervention began with parent surveys. These surveys were sent prior to the beginning of the school year along with an introduction and welcome letter. The intent was to gain parent knowledge and insight into the child's multiple intelligence strengths. An explanation of each of the eight intelligences accompanied the parent surveys. Parents were encouraged to call with any questions or concerns they might have had regarding Garner's multiple intelligences (Appendices F, G, H).

Student surveys were given during the first week of school. Students were asked to categorize the subjects taught from favorite to least favorite (Appendix A). Another survey followed requiring students to identify their favorite way of learning (Appendix I).

Whole class instruction included teacher definitions and examples of the eight multiple intelligences. Students were given the opportunity to autograph the multiple intelligences

posters which they felt best represented their own strengths. Teachers in Classrooms A and B then tabulated results of students' strengths to better organize and set up unit projects around these strengths in the content area of social studies (Appendix J).

Students in Classrooms A and B were given a pretest to show prior knowledge of landforms in the United States (Appendix D). Next, teachers evaluated students on regions of the United States to determine students' knowledge of geographical locations within the country (Appendix E). Subsequent to the regional pretest, a test was given to evaluate knowledge of the states in the northeastern region of the United States. The results of all of the above mentioned pretests determined the students' prior knowledge and enabled teachers in Classrooms A and B to create the unit of study surrounding the strongest student multiple intelligences.

At the beginning of Week Two, students were presented with a concentration game on geographical landform terms. The intent was to 'hook' students into the lesson. Using the K-W-L format, a teacher-directed lesson included important information on landforms in the United States. Since a high percentage of students showed interest in visual/spatial intelligence, teachers in both Classrooms A and B centered their project selections around this intelligence. Teachers selected a salt map project as a learning tool and as a final assessment. Students were then provided with materials to create a salt map of the eastern 1/3 of the United States and correctly label all physical land features. This was an intrapersonal project assignment and a rubric accompanied the beginning of the salt map project to direct students in what the finished project should contain. During Week Two, newsletters were sent home to inform parents of activities within the classrooms in all content areas. The major intent of the newsletters was to inform parents on how multiple intelligences were being used in the social studies content area (Appendices K and L).

During Week Three, students continued working on the middle 1/3 of the salt map. Students were directed to correctly identify and label the physical features of that area. Both classrooms were then given the opportunity to use the large visual playground map of the United States to reinforce facts and information learned. This was a great opportunity for students to use bodily/kinesthetic and interpersonal multiple intelligences.

Week Four began the finalization of the salt maps along with reinforcement activities. Students shared with the groups the finished products. A posttest was given to evaluate student learning of landforms in the United States. The salt maps were also displayed at Open House. At this time the teachers in Classrooms A and B discussed Gardner's eight intelligences with the parents, explained future activities and projects, and answered related questions and concerns. A parent questionnaire was provided at Open House to assess parent knowledge of student learning strengths (Appendices F, G, H).

Upon the completion of the teacher-directed lessons on rivers and the lock and dam system, a field trip was taken to Lock and Dam 15 on the Mississippi River. The intent was to provide a visual/spatial and naturalistic field study to reinforce lessons taught in that area. These two multiple intelligences were most often chosen as favorites by the majority of students in both classrooms. Students were given the opportunity to work intrapersonally or interpersonally to create a cross-section diagram and label all parts of a lock and dam system.

The last half of the intervention focused on the study of the northeastern states. During Week Six and Week Seven, Classroom A chose to design a mobile depicting one of the northeastern states including all facts learned in class and information researched independently. Classroom B students were given a list of project ideas to choose from and create at home (Appendix M). As the lessons progressed, students collected data to use for creating projects.

A third newsletter was sent home to parents to provide updated information on projects covering the northeastern states.

Substituting fact-finding and data collecting in place of graphic organizers, students showed tangible growth by working cooperatively in groups of four to complete a visual graph of urban population growth in the northeastern states. Students in Classroom A created these graphs on the computer to show what they had learned in researching facts. This was an intrapersonal assignment. Students then used verbal/linguistic intelligences to analyze reasons for population growth in the major cities in the Northeast region and problems associated with large city growth. Objectives were met in Classroom B by constructing graphs of the major cities in the Northeast and orally debating positive and negative aspects of the growth in these cities. Due to frequent snow days in our area, teachers in Classrooms A and B opted to delete a student-generated newsletter at that time.

As the intervention continued into Week Nine, the investigation of urban problems in the northeastern cities continued with the inclusion of facts and information and omitting the debate. This omission of a simulated city council debate, mentioned in the action plan, was again due to weather restraints. A week was then spent on reviewing map skills. Students in both classrooms made longitude and latitude maps using red and green yarn as the longitude and latitude lines. The visual-type yarn maps were then used for student practice. An assessment was then given by having students locate and log specific cities, states, and landform names by using the coordinates correctly. Teacher directed lessons were also used to further introduce special-purpose maps. Students were then assessed on what was learned by creating a grid map on the computer using a stamp-type program.

Teachers in Classrooms A and B concluded the intervention with posttests of landforms, regions, and identification of the northeastern states (Appendices D, E, N).

A final survey was given asking the students to express their opinions on learning social studies through project-oriented lessons and assessment.

Students involved in the intervention were surveyed to find out how they felt about the assigned projects and various activities which were included in the study. A few quotes are listed below from both classrooms involved in this intervention. These quotes are a combination of both Classrooms A and B.

- "I feel good about the social studies. I feel good about the maps."
- "I like the projects that we do. I don't like the tests, they're hard."
- "I like when we do the projects instead of reading from the book. It's not really my kind of subject."
- "I would like for the class to do one big project. I liked when we did the salt maps and the culture masks."
- "I like the projects, I don't like the tests very much."
- "I think we should do hands-on things. Hands-on things let us (kids) learn easier. When you read and answer the questions, you just don't get anything out of it."
- "I like S.S. because I like to learn about the U.S. and do projects."
- "I like to do fun stuff like maps and other stuff. It was fun doing this stuff with our class."
- "I like the stuff that we are doing now. I like it better because I like to do activities better that reading and writing."
- "It's the most challenging subject I ever had. And it's okay."
- "I think we should do social studies together. All of us work better good together anyway. I don't think we should read a chapter and then answer the questions."
- "I would like for the teacher to have a rest and have the children teach instead."
- "I would like to have another class project."

- "I think it was fun. I think it was cool. I think it was awesome. I think it was super. I think it was exciting. It is fun to build salt maps. It was cool to do projects. It was awesome to make things. It was super to read. I think it was exciting to do."

- "In the beginning I didn't like social studies. Now I love it!! I like the salt maps the state factors everything."

- "I like social studies sometimes because the part I like is when we study about the states. Sometimes I don't care for it. I like when we made the salt maps and our posters."

- "I think it is good to learn about the states. I like the projects. I like when we went on the internet for information."

- "In the beginning it was fun when we did projects. When we got in to the middle of the year it was sort of not fun. Now I think it's good because I'm learning more."

- "I like social studies because of the projects and we get to have the things we have to put on it."

- "Social studies is fun especially making the salt maps."

- "I love social studies because I like when we did salt maps. I like social studies because I learned something neat."

- "I like S.S. because there's fun projects. The projects help me learn better. Like the salt maps. There for I kind of like it."

- "I felt it was fun when we got grades and did cool projects. I've learned a lot. It is pretty fun. We've done lots of things in social studies and I've enjoyed them!"

- "I really like social studies a lot because of the projects we do a lot. I sure like social studies because it's fun and you learn a lot."

- "I really like social studies expecilly when we do projects and crafts. but when we read out of the book it gets kinda boring but I do learn a few things."

- "I like social studies better this year than last year because its easier this year. I like it because we do neet projects and they teach me a lot." [sic]

The direct comments made by students in both classrooms clearly indicate that the students have enjoyed the type of activities and project-type learning they have been involved in for the past 16-week intervention period. Students were motivated by having the freedom to choose the ways in which they wanted to learn the material and seemed to be more accountable towards its outcome.

Presentation and Analysis of Results

During the 16-week intervention, presurveys and postsurveys identifying multiple intelligences strengths were administered to both parents and students. Teacher-made checklists were also used during the 16-week intervention by both teachers in Classroom A and B to accurately document what direction the students were taking in choosing the form of assessment that most interested them.

Table 1

Preintervention Survey of Parent and Student Multiple Intelligences Questionnaire in Classrooms A and B

Multiple Intelligences	Classroom A		Classroom B	
	Parent	Student	Parent	Student
Verbal/linguistic	6	7	9	5
Math-logic	4	10	5	11
Spatial	4	11	7	8
Interpersonal	1	5	0	4
Bodily/kinesthetic	6	5	5	12
Intrapersonal	2	4	4	5
Musical	6	3	6	7
Naturalist	6	6	7	4

The preintervention survey of parent and student choices of multiple intelligences shows that parents and students in Classroom A had more variations between mathematical/logical and spatial. Other multiple intelligences strengths seemed to be closer in opinion. Students seemed to be more accurate in selecting activities to compliment their multiple intelligences strengths. In Classroom B, students' surveys revealed different results. More students chose mathematical/logical and bodily/kinesthetic as their stronger multiple intelligences. Yet activities they chose to complete in the social studies area did not coincide with what they believed to be their strengths. Parents in Classroom B also were unable to identify their child's multiple intelligences strengths.

The table clearly indicates mathematical/logical, spatial/visual, and bodily/kinesthetic as the three strongest in student choice of assessment in showing what was learned in the classroom. Interpersonal and intrapersonal seem to be balanced among the projects and activities. Even though students preferred hands-on, artistic-type analysis, they did not seem to care whether they worked alone or with a partner or group to complete the project. This seems to coincide with student surveys which were filled out at the beginning of the year to show strengths in certain multiple intelligences. Math was clearly the favorite subject in the presurvey intervention. As mentioned previously, this may be due to the use of manipulatives and more variations in activities in that particular subject.

Preintervention and postintervention surveys also included what students believed to be their favorite subject. Subjects were rated from favorite to least favorite on a number scale. Survey tabulations for the preintervention and the posintervention for students in Classroom A and Classroom B are compared in Figure 10 and Figure 11.
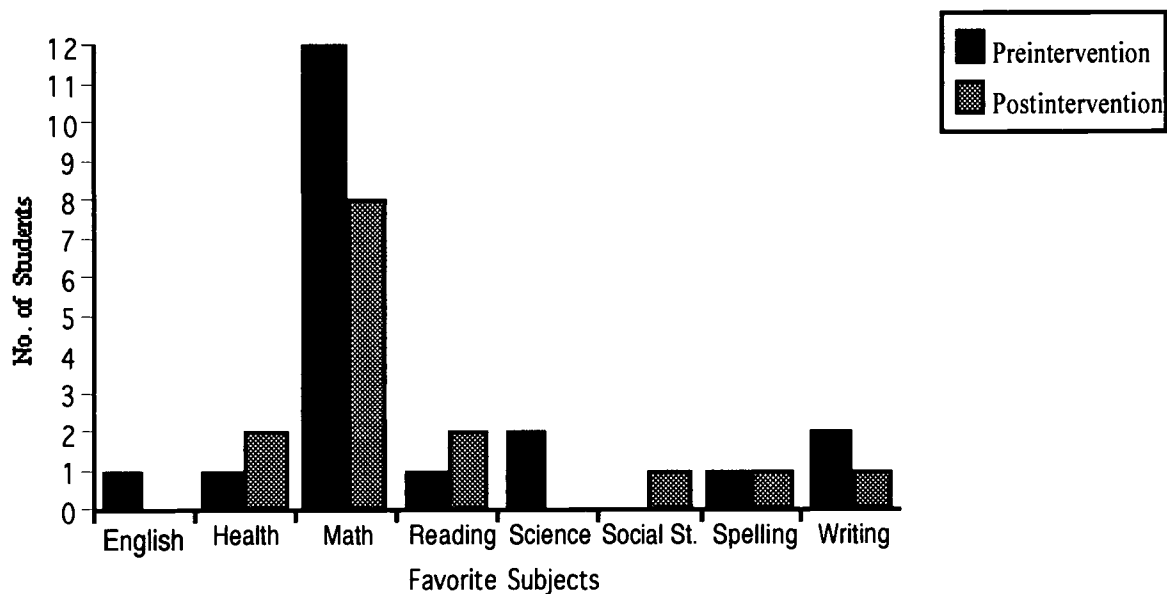
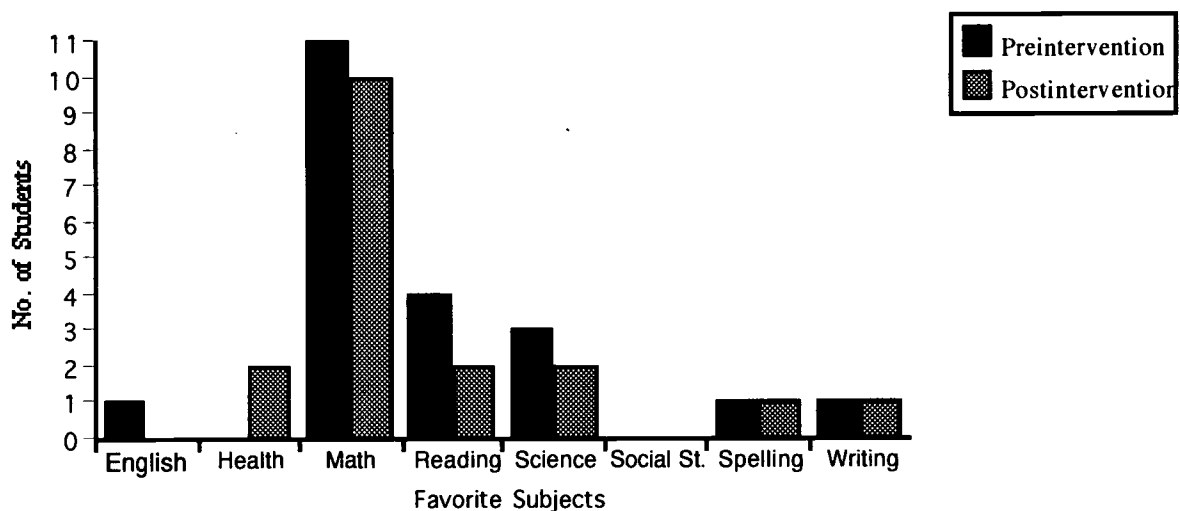Figure 10. Pre and post intervention results on favorite subject in Classroom A.

Figure 11. Pre and post intervention results on favorite subject in Classroom B.

Even though social studies is not a favorite subject in either classroom in both pre- and postsurveys, students in both classrooms rated it higher on the subject scale on the postsurveys. It seems apparent that social studies continues to be a least favorite subject even with the inclusion of multiple intelligences activities. We continue to feel this is due to the difficulty of the content material required at the fourth grade level of instruction.

Assessment of the regions of the United States were revealed through the use of interpersonal and visual/spatial multiple intelligences. Students were encouraged to create salt maps depicting the diverse regions and water forms found in the United States. Figure 12 and Figure 13 reveal preintervention and postintervention results.
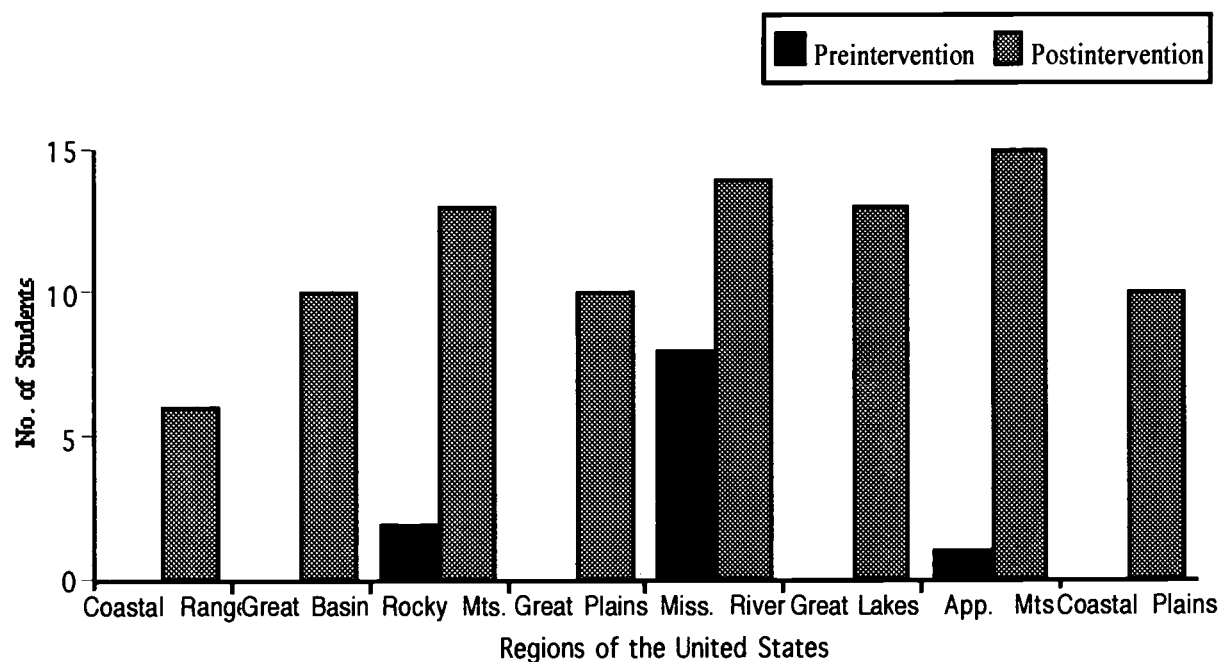

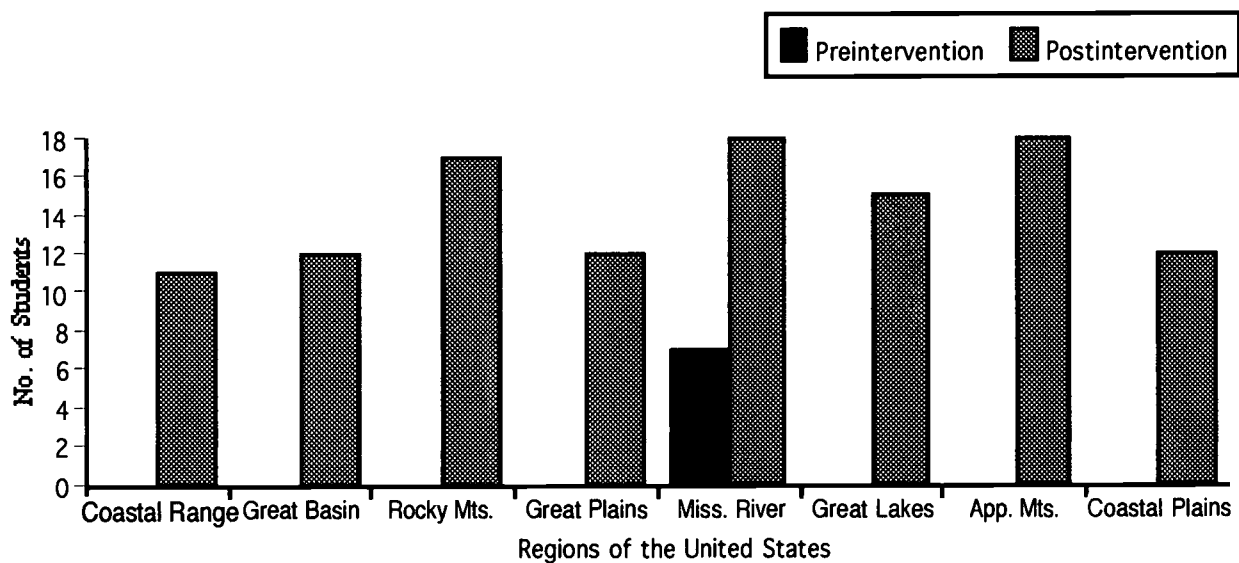Figure 12. Pre and post intervention results on regions of the United States in Classroom A.

Figure 13. Pre and post intervention results of regions of the United States in Classroom B.

Figure 12 and Figure 13 obviously reveal major growth by utilizing activities related to the

multiple intelligence strengths of the students involved in the intervention. Students in

Classroom A and Classroom B were able to identify more regions and water forms than on the

preintervention.

When given a map of the northeastern states, students struggled on the preintervention

test to correctly label those states. Figure 14 and Figure15 illustrate a comparison of prior

knowledge and learned information on location of the northeastern states.
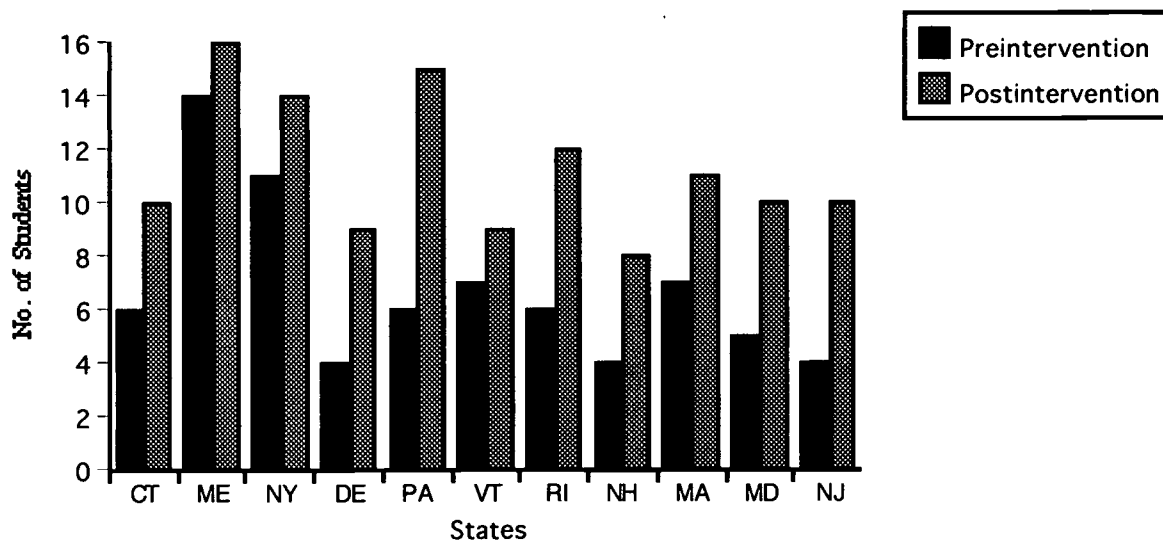
Figure 14. Pre and post intervention results of northeastern states identified by Classroom A.
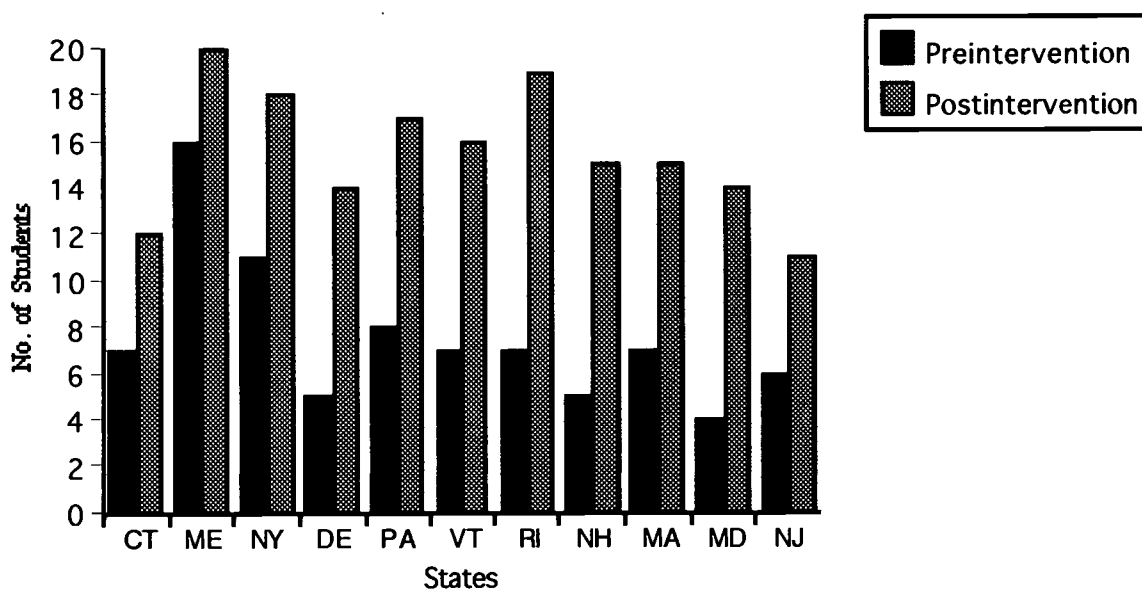

Figure 15. Pre and post intervention results of northeastern states identified by Classroom B.

Figure 14 indicates that students in Classroom A overwhelmingly identified the northeastern states after completing state mobiles which made use of the visual-spatial, interpersonal, and verbal-linguistic intelligences. Students were required to choose and research one state and orally present facts and information on that particular state. Students were assessed on the presentations. Students in Classroom B were offered the opportunity to choose from a list of multiple intelligences-related activities. This project differed from the planned action research activity due to the desire to offer the students in Classroom B a wider variety of multiple intelligences activities. Students chose activities related to their multiple intelligences strengths. Information given in Figure 15 indicates students in Classroom B gained knowledge in content area.

Conclusions and Recommendations

Parker (1991) affirms that most students in the United Stated find social studies to be one of the least interesting subjects at all grade levels. Based upon preintervention surveys in this report, students in Classroom A and B follow the norm of most United States students. Parker goes on to say this general dislike increases with each grade level.

The results of this intervention involving 37 fourth graders continues to show social studies as a difficult subject to teach when students are unmotivated and apprehensive from the beginning. Strides were taken at the targeted site to motivate and fully engage fourth grade students through activities and projects centered around all eight of the multiple intelligences. The purpose was to allow students to chose activities which they were most comfortable with, teachers in both classrooms would see significant gains in knowledge learned and transferred. Using all multiple intelligences, we believe, allows students at all ability levels to be pulled into the lessons and meet with success. It was the intent of both teacher/researchers to increase interest and raise scores of the students involved in the 16-week intervention. Data

collected from the pretests and posttests within the intervention time period and teacher record keeping through weekly checklists show that many of the 37 students have a more positive feeling towards social studies and also improved their scores on the required units of study. As teachers, we are very pleased with the results of the intervention. Student growth is evident.

As with any successful school, we strive to perfect the curriculum with powerful lessons that challenge all students to meet those challenges and put forth their best efforts to gain as much knowledge as possible to compete in the real world successfully. The intent of the intervention was to enable our students to extend their minds, through interest enhancing assignments that build on student strengths. We believe that using high interest level lessons develop risk-takers who meet with success. Gardner's theory of multiple intelligences is certainly not the newest approach, but having been used in many classrooms across the country, it has been found by many to be an effective and interesting way to teach-by-motivation. As stated in Chapter 2 of this intervention, one of the most obvious causes of student dislike in social studies arises from context level of the textbooks. If grade level textbooks continue to publish at two to three grade levels higher than those that are expected to read and comprehend it, social studies will continue to be a struggling subject for elementary students. Yet it is the belief of the teacher/researchers in this intervention that the inclusion of more projects and activities that incorporate the multiple intelligences - the more students will meet with success.

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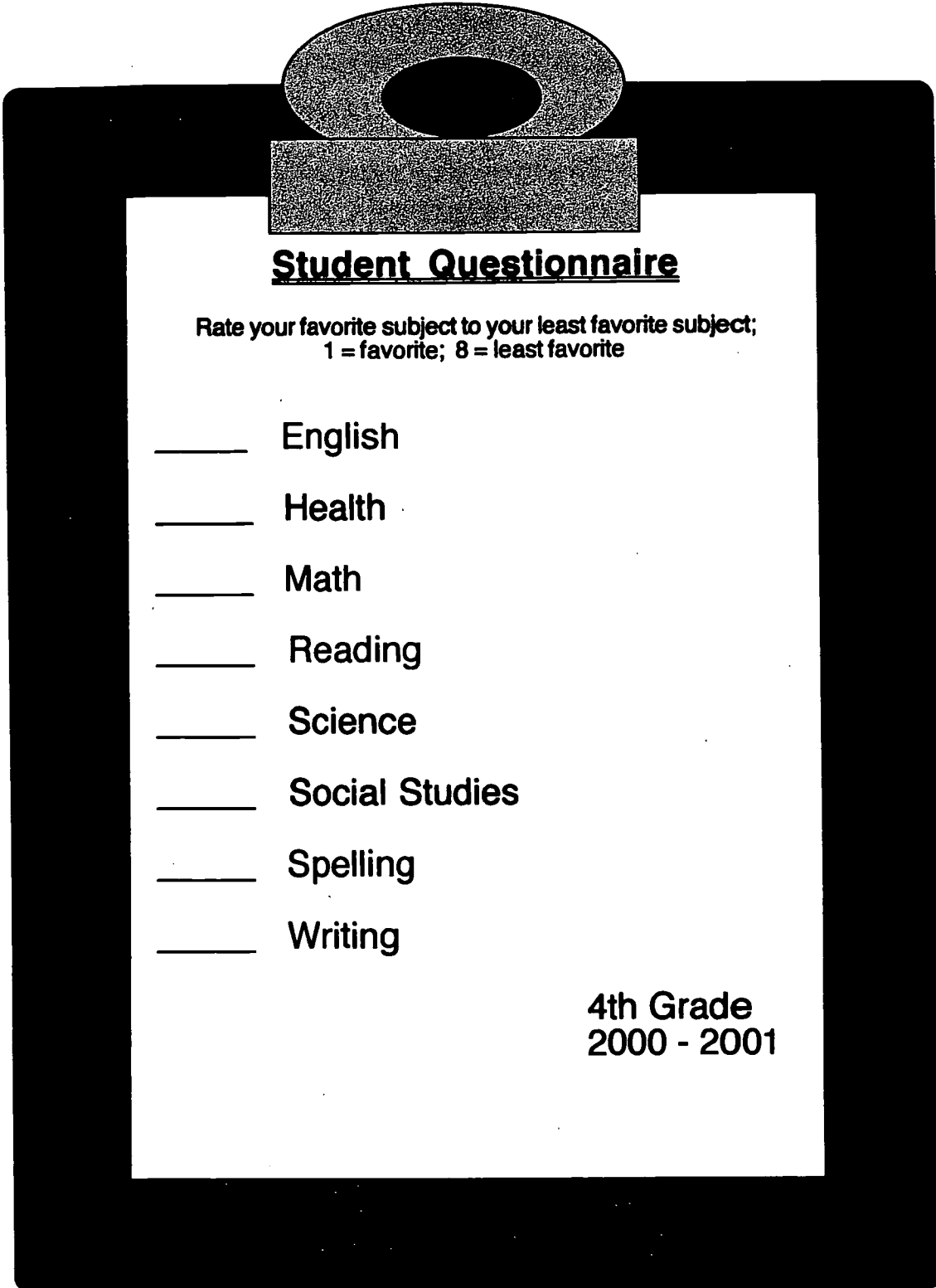
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Appendices

Appendix A

Student Questionnaire

Rate your favorite subject to your least favorite subject;
1 = favorite; 8 = least favorite

_____ English

_____ Health

_____ Math

_____ Reading

_____ Science

_____ Social Studies

_____ Spelling

_____ Writing

4th Grade
2000 - 2001

STUDENT QUOTES:

"HOW DO YOU FEEL ABOUT SOCIAL STUDIES?"

QUOTE # 1: _____

_____

_____

_____

QUOTE # 2: _____

_____

_____

What Would You Like To Do?

We will be starting a new unit soon in Social Studies. The following is a list of activities we may be doing. Put a check mark under the answer that tells how you feel about each activity.

	Never	Sometimes	Often
I like:			

1. **To take tests**

---

2. **To read the book**

---

3. **To do projects**

---

4. **To work with a partner**

---

5. **To work alone**

---

6. **To do art work**

---

7. **To make maps**
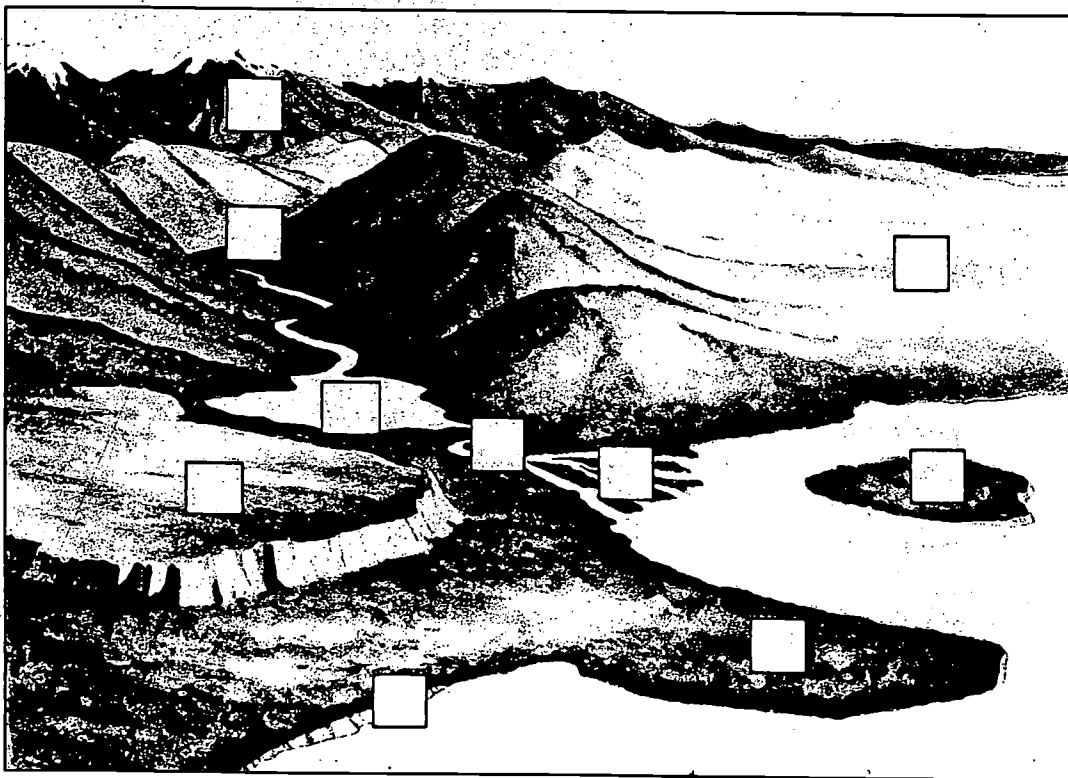
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8. **Research (library and computer lab)**


Name: _____
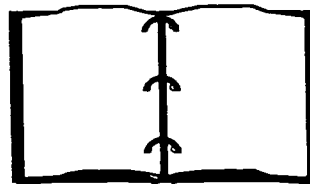
The Shapes of Land and Water

▶ Study the drawing below. Then study the list of geographic terms and their meanings below the drawing. The terms are labeled **A** to **J**. On the drawing you will find a box on each physical feature. In the proper box write the letter of the term that describes each physical feature.

A. Coast	Land next to a large body of water	
B. Delta	Land formed by mud and sand settling down from water that flows out of the mouth of a river	
C. Island	A body of land with water all around it	
D. Lake	A body of water with land all around it	
E. Mountain	A piece of land rising steeply from the land around it and much higher than the surrounding land	
F. Peninsula	A strip of land with water nearly all the way around it and connected to a main body of land	
G. Plain	An almost level, treeless piece of land that stretches for miles	
H. Plateau	A level piece of land raised above the land around it	
I. River	A long, narrow body of water flowing through the land	
J. Valley	A long, low place between hills or mountains	

Name
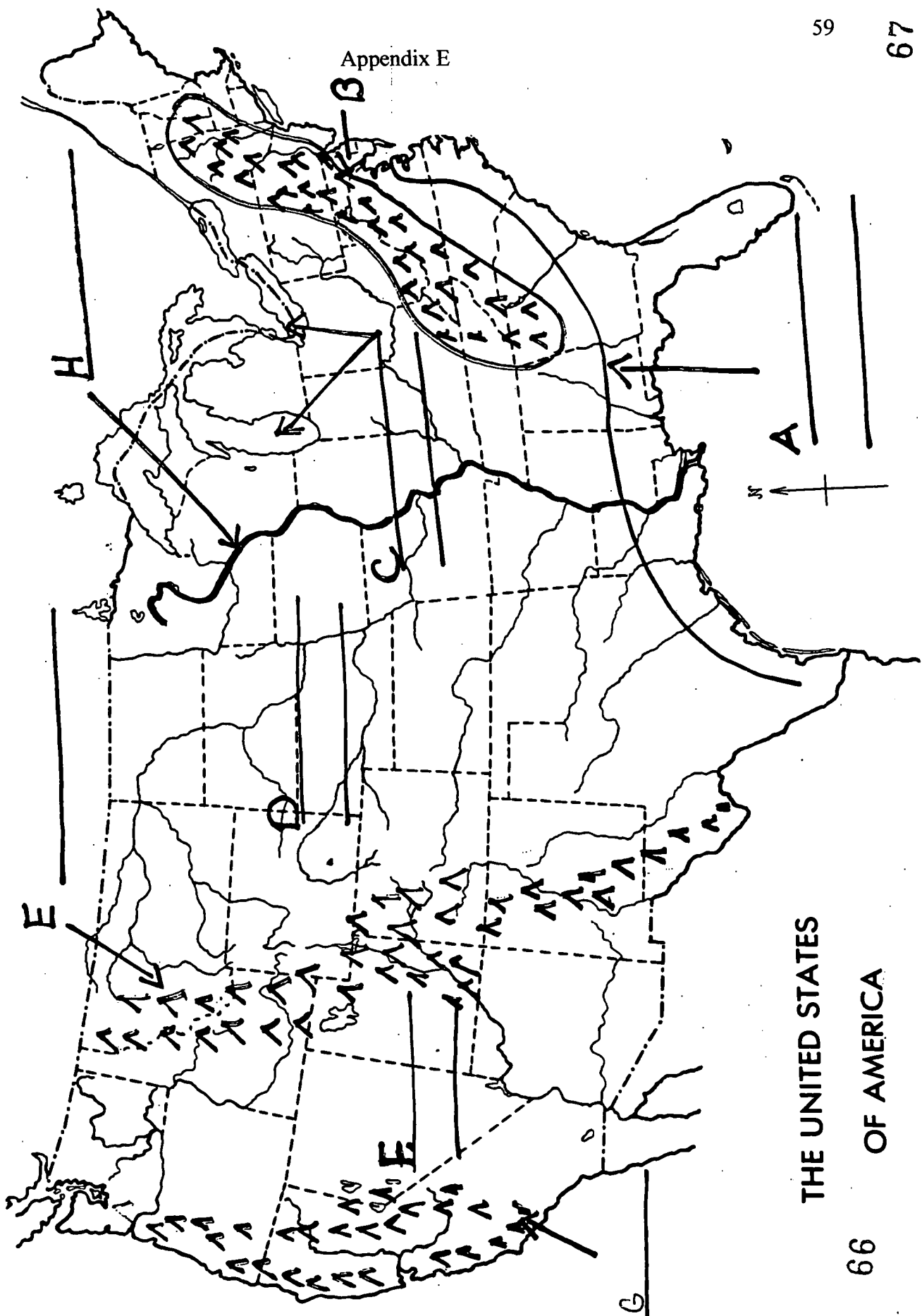
Appendix E

THE UNITED STATES
OF AMERICA

Appendix F

St. Xavier University
Consent to Participate in a Research Study

Enhancing Student Achievement in Social Studies Through the Use of Multiple Intelligences

Dear Parent/Guardian,

      We are part of a Field-Based Masters Program through St. Xavier University, and we are doing research on "enhancing student learning in social studies" through the use of the multiple intelligences theory. As part of the research project, we will be conducting surveys of parents and students which will assist in identifying student strengths in classroom learning activities and projects. All surveys will be voluntary and confidential.

      Please complete the bottom portion of this letter and return it in the enclosed self-stamped envelope. If you have any questions in regards to this project, please feel free to call us at school. Your cooperation is greatly appreciated.

Thank you,

Mrs. Nancy Gohlinghorst

Mrs. Becky Wessels

◆◆

      The parent/guardian of _____ acknowledges that the teachers have explained to me the need for this research, explained what is involved and offered to answer any questions. I freely and voluntarily consent to my child's participation in this study. I understand all information gathered during the study will be completely confidential.

Parent/Guardian signature: _____

Date: _____

Appendix G

Dear Parent/guardian,

Please take a minute to complete the enclosed survey. As part of my master's program, I will use your expertise in understanding your own child to help make social studies more enjoyable. Researchers have developed a theory that every individual possesses several different and independent capacities for solving problems and creating products. We all have seven intelligences which we use to help us solve problems. Some of us use some intelligences more than others. For instance, my musical/rhythmic intelligence is not used as much as my naturalist intelligence. I do not enjoy singing or any type of musical activity, but I do like science related activities. The following short descriptions will help when you fill out the survey. Thank you.

1. Bodily/Kinesthetic Intelligence: his/her
A person who uses this intelligence is able to control their bodily movements. People who are strong in this intelligence include dancers, acrobats and athletes.

2. Verbal/Linguistic Intelligence:
This intelligence is concerned with the use of language. A person who uses this intelligence likes to write, read, and finds speaking in front of a group easy. Some people who have a strong verbal/kinesthetic intelligence include poets, authors, reporters, lawyers, and politicians.

3. Musical/Rhythmic Intelligence:
A person who uses this intelligence understands pitch, rhythm, and tone in music. Some people who enjoy their musical/rhythmic intelligence might be singers, composers, conductors, and those who enjoy, understand, or appreciates music.

4. Logical/Mathematical Intelligence:
A person who uses this intelligence likes to work with numbers and enjoys working with problems that require a great deal of reasoning. Some people who use this intelligence might be mathematicians, engineers, computer programmers, or astronomers.

5. Visual/Spatial Intelligence:
A person who uses this intelligence likes to work in art and has a keen gift for bringing forth and transforming mental images. Some people who use this intelligence are sailors, artists, architects, or surgeons.

6. Naturalist Intelligence:
This intelligence is based on science. Some people who use this intelligence might be hikers, scientists, gardeners, park rangers, or veterinarians.

7. Intrapersonal Intelligence:
This person has the ability to understand his/her own feelings. Some people who use this intelligence might be psychologists or therapists.

8. Interpersonal Intelligence:
This person focuses on understanding others. Parents, teachers, counselors use this intelligence.

Appendix H

Parent Questionnaire for MI Assessment

I am in the process of assessing your child's natural talents and strengths in the multiple intelligences areas. Please complete the following questionnaire and return it to me. Your input is highly valuable to this process.

Name _____   Date _____

1. What do you feel is your child's favorite subject in school? _____

2. What are your child's hobbies and interests outside of school?

3. Check all of the things your child is good at:

_____ Reading

_____ Writing

_____ Speaking in front of others or in small groups

_____ Art (drawing, painting, sculpting, etc.)

_____ Music (singing, listening to music, playing an instrument, etc.)

_____ Math (calculating, measuring, solving logic problems, etc.)

_____ Movement Activities (dancing, acting, playing sports, etc.)

_____ Working alone

_____ Working with others in groups and teams

_____ Building activities (constructing things)

4. List other areas in which your child excels that aren't on the list above:

5. What is your child's favorite way to learn about things? For example, reading, talking to others, acting things out, hands-on activities, studying alone, etc.

6. Rank your child in the following intelligences. Use a 1–10 scale (10 being strong).

Verbal-linguistic	_____	Bodily-kinesthetic	_____
Math-logic	_____	Intrapersonal	_____
Spatial	_____	Musical	_____
Interpersonal	_____	Naturalist	_____

7. What skill, activity, or subject would you like to see your child improve in most?

8. What skill, activity, or school subject do you feel your child has improved in?

9. What do you feel your child would you like to learn more about?

10. What improvements or changes could be made to make learning more interesting and meaningful for your child?

11. What is one of your best memories of your child's school life?

12. What careers do you feel may interest your child in the future?

Appendix I

Name _____ Date _____

Student MI Questionnaire

Please complete the following questions as honestly as you can. There are no right or wrong answers!

1. What is your favorite subject in school? _____

2. What are your hobbies and interests outside of school?

_____

3. Check all of the things you think you are good at:

_____ Reading
_____ Writing
_____ Speaking in front of others or in small groups
_____ Art (drawing, painting, sculpting, etc.)
_____ Music (singing, listening to music, playing an instrument, etc.)
_____ Math (calculating, measuring, solving logic problems, etc.)
_____ Movement Activities (dancing, acting, playing sports, etc.)
_____ Working by yourself
_____ Working with others in groups and teams
_____ Building activities (constructing things)

4. List other things you think you are good at that aren't on the list above:

_____

_____

_____

5. What is your favorite way to learn about things? For example, reading, talking to others, acting things out, hands-on activities, studying alone, etc.

_____

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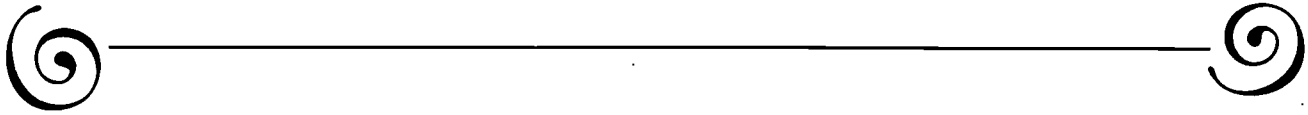
6. Rank yourself in the following intelligences. Use a 1–10 scale with 10 meaning that you are very strong.

Verbal-Linguistic _____   Math-Logic _____

Spatial _____   Bodily-Kinesthetic _____

Intrapersonal _____   Musical _____

Interpersonal _____   Naturalist _____

7. What skill, activity, or school subject would you most like to improve in?

_____

_____

8. What skill, activity, or school subject do you feel you have improved in?

_____

_____

9. What improvements or changes could be made to make learning more interesting and meaningful for you?

_____

10. What is one of your best memories of school?

_____

11. What are some careers that interest you for your future?

_____

73

Name_____ Appendix J _____ Skill: Critical thinking—Evaluation

What Would You Like to Do?

We will be starting a new unit soon. The following is a list of activities we may be doing. Fill in another activity you like on line number three. Write the number of the activity you like best on the top rung of the ladder. Order the other activities according to how much you enjoy doing them. The activity you like least should be on the bottom rung.
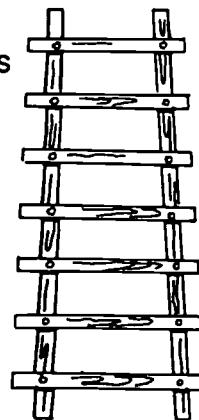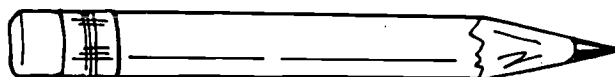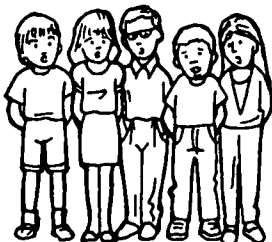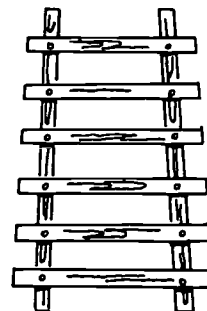
| Activities |

1. Write a story or poem
2. Do art work
3. _____

4. Take tests
5. Make maps

6. Make speeches
7. Read books
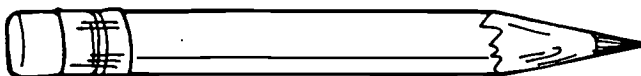
Everyone learns differently. The following is a list of ways of learning. Order them as you did the activities above.

| Ways of Learning |

1. Work in pairs
2. Lead a group activity
3. Tutor others who need help

4. Work alone
5. Work in groups
6. Plan my own activities

Order your goals for a new unit as you did the activities and ways of learning.

| Goals |

1. Understand the subject better
2. Learn lots of information
3. Work for an "A" on the unit

4. Work for a "B" on the unit
5. Settle for a "C" or less
6. Improve research skills
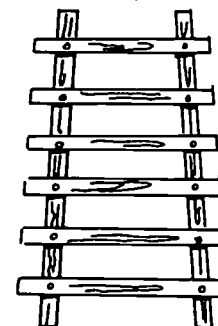
Teacher: Tally the number of first place votes in each category. Use the results as a guide in planning a new unit.

7   FS-1702 Critical Thinking, Cause & Effect, Inferences

NEWS FROM OUR ROOM   C-2   Mrs. Wessels

SCIENCE

Our first unit is the study of plants and animals. We will be learning their habitats and all about the meanings of succession, migration, and photosynthesis. Some projects that are planned should be very exciting for the students.

Social Studies will involve the study of our country. Our class will travel across the U.S. by regions. They will learn the natural resources, states & capitals, manufacturing, farming, and about the people in each region. We have added something different this year to our social studies curriculum. Your child is learning about the 8 intelligences that we all have and we will be doing many activities based on each child's strongest intelligences. More about this will be explained at OPEN HOUSE.

LANGUAGE ARTS

Students will be studying sentences each week and be assessed on them usually on Mondays of each week. Be sure your child studies these sentences at home We will also be reading novels as a class each quarter and applying reading skills and comprehension to these novels. Good writing skills are also very important. We have individual portfolios which we will be filling throughout the year with some very interesting work. Please be sure to look at them during Open House.

MATH - Students are reviewing addition, subtraction, place value, and problem solving. They seem to really be enjoying our group work with the many manipulatives we have available. I have some really hard-working math students!

We are off to a really great start. What a wonderful class we have this year! They are so enthusiastic about learning! We have 20 students in C-2.

OPEN HOUSE - SEPTEMBER 12!!
7:00-8:00 p.m.
We'll be looking forward to meeting all of you then!

Mrs. Wessels - 4th Grade

Appendix L

FOURTH GRADE NEWS RELEASE ROOM C-3

Dear Parents/Guardians,

Welcome to C-3 and fourth grade. We are busy learning many exciting things. I look forward to meeting you during Steele's Open House, Tuesday September 12, 2000. Please mark your calendar and visit our classroom.

LITERATURE AND WRITING

The class this year is reading and investigating different reading genres. We will be writing stories and other writing pieces related to the genre we are reading. We began the year reading several adventure stories and writing a group adventure story with pictures. Stay tuned for more.

MATH

In math, we have spent some time on writing large numbers and rounding. We are working on subtraction (refreshing our memories). I am real proud of the work and cooperation I have seen so far.

SOCIAL STUDIES

Social Studies will be very exciting this year. We will be investigating the land regions of the United States and learning through many hands-on projects. I am identifying your child's strengths through MI surveys and questionnaires. This should help your child learn more about the United States.

SCIENCE

The class is learning about the weather. We certainly have had a variety this year.

Appendix M

YANKEE - DOODLE DELIGHTS

NORTHEASTERN STATES
PROJECT

Goal: To create, illustrate, and show your knowledge of a Northeastern state.

Directions: Pick one of the following or create one of your own (teacher approved) to be
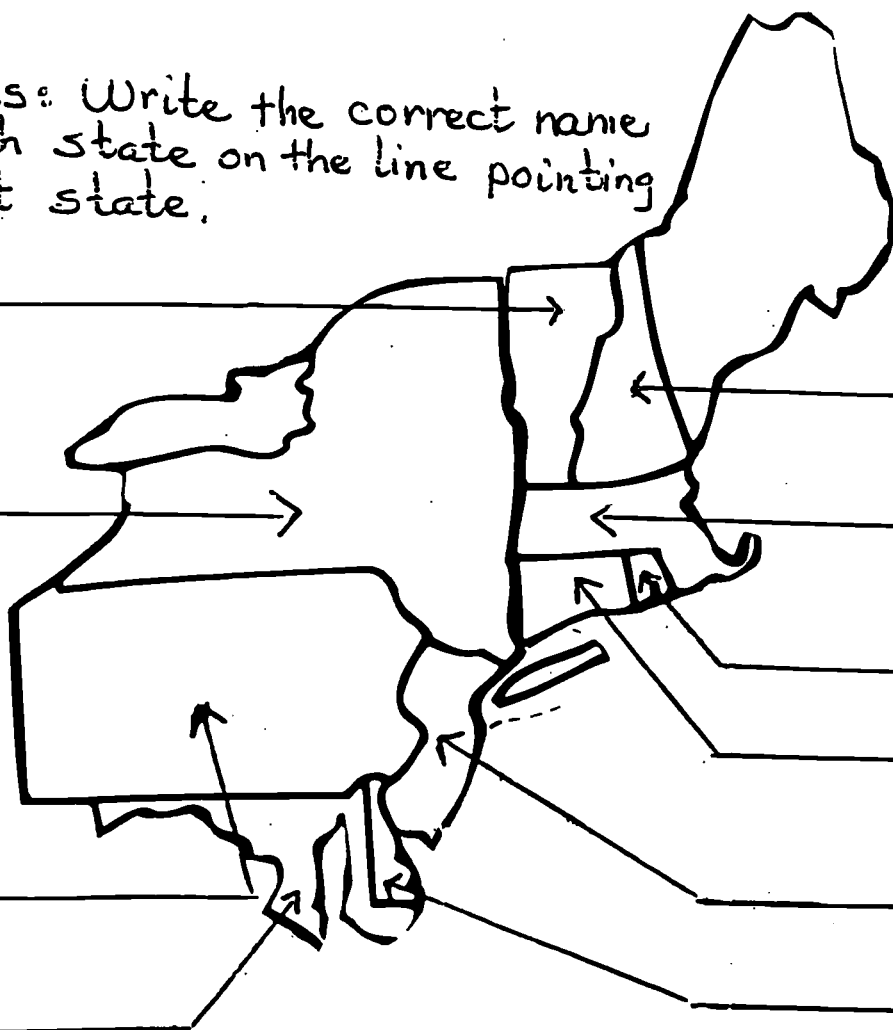
completed by _____ .

PROJECTS:

1. Design a float showing important aspects of your state include state flower, state tree, products, important physical characteristics, recreational activities, etc.

2. Create a poster - visit the internet or other resources and collect pictures and information.

3. Create a travel brochure - visit a travel agent and collect information and pictures.

4. Research your state's song and share with the class.

5. Create a game to share about your state.

6. Write a report and read to the class.

7. Choose a major city in your state and compare & contrast it to Galesburg. (population,
location, physical features, recreational activities, etc.)

8. Create a pencil sketch or a watercolor painting of a New England coastal scene.

9. Make a mobile; include pictures and important facts of your state.

10. Create a timeline featuring the names and dates of important historical events that occurred in your state.

11. Design a diorama which shows a New England fishing village. Be sure to include a pier and at least one fishing boat.

12. Research how New England fisherman catch lobster. Invent a new kind of lobster trap using things from home.

13. Dress as an important historical person from your state and tell the class about yourself.

14. Design your own diorama of your state.

15. Create a scrapbook of your state and share with the class.

16. Create an authentic Thanksgiving meal including something with cranberries or blueberries. Share with the class your meal on paper, make the cranberry or blueberry product and share with the class.

17. Create your own.

_____

_____

Northeast

Directions: Write the correct name of each state on the line pointing to that state.

1. Connecticut   5. Pennsylvania   9. Massachusetts

2. Maine   6. Vermont   10. Maryland

3. New York   7. Rhode Island   11. New Jersey

4. Delaware   8. New Hampshire

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