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TEACHING AS REFLECTIVE PRACTICE: PAPERS BY TEACHER RESEARCHERS

Submitted by:

MERC Teacher Researchers

Virginia Commonwealth University
May 1995

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TEACHING AS REFLECTIVE PRACTICE: PAPERS BY TEACHER RESEARCHERS

Project No.

EXPECTATIONS AND INNOVATIONS

A Nation at Risk;
Shopping Mall High School;
Horace's Compromise

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April, 1995

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EXPECTATIONS AND INNOVATIONS

A Nation at Risk.

Shopping Mall High School.

Horace's Compromise.

The outcry of negativism found throughout society has inspired a movement toward educational reform. Charter Schools, on-site management, mini-courses and block scheduling have each been touted as solutions explaining why Johnny can't.... read, write, compute or even sit still in class. In truth, the one constant on which there is little disagreement is that indeed Johnny can't, at least not as well as expected. The challenge confronting all educators, as we progress into the 21st century, is identifying the vehicle which will best move Johnny towards the acquisition of critical thinking and problem solving skills.

While some educators believe we are currently poking along the educational super highway in an Edsel, others argue that perhaps we need to streamline for speed and efficiency. The educators only consensus is to agree to disagree. Some hold on tenaciously to the theories of the past while others propose immediate, radical change. One new model currently being tested in Chesterfield County is the 4 period day. Under this plan, courses are completed in a semester; thus allowing students the opportunity to complete 8 courses per academic year. This innovative schedule is considered both a curse and a blessing by students, teachers and parents.

With a combined total of 43 years teaching experience, we felt quite qualified to take an evaluative and analytical look at the 4 period schedule. Our research methods included teacher surveys and interviews, student surveys and interviews and parental contacts (telephone, informal conferences, and the expressions of concern voiced at the Very Informed Parents meeting). In addition, we monitored our own successes and failures by maintaining personal journals.

By using data gathered from student and teacher surveys we were able to construct a framework of positive and negative viewpoints. This framework gave both shape and direction to subsequent interviews. Teacher interviews occurred quite naturally at the lunch table during planning periods, at extra curricular activities and even at the teacher mail boxes where a grin or a grimace came to represent that day's success or failure. Since parental contact is a recommended part of each teacher's routine, we chose to use this as a most efficient way to gather parental input. While we contacted parents to impart both negative and positive feedback on their children's performance in our classes, we often utilized the same call to ascertain the individual's perception of the four period day. As one might expect, those whose children were doing poorly seemed quickest to find fault with the schedule. Other parental concerns were voiced at a meeting held in Bon Air. All of this material was supplemented by our personal journals.

From these varied sources we were easily able to compile both the positive and the negative reactions to this change. Most curious was the discovery that certain issues were considered positive by some disciplines but negatives by others. Equally curious, verbal kudos were few and far between; yet, written survey overwhelmingly supported the schedule. Another curiosity arose when it became clear that certain subjects, such as English, were in part more negative concerning the schedule because of curriculum diversity and County mandated writing.

One of the issues considered both positive and negative was the completion of courses at the semester. Relief for teachers dealing with difficult classes came after only one semester. In contrast, other teachers voiced a concern over students leaving them after only a few months. Some teachers felt the extended class period allowed them to better know their students yet, others asserted they had not had the opportunity to get to know their students as well as in the past. Many teachers found the 4 period day invigorating and challenging; in their opinion, the schedule allowed many opportunities for personal and professional growth. In opposition were those who spoke of increased stress and fatigue, as well as a sense of personal failure primarily because they were unable to complete the required curriculum or include any enrichment activities.

POSITIVE ASPECTS

A tenant of education must be that the acquisition of knowledge is a worthy goal. Thus, taking 8 courses is preferable to the traditional 6 courses per year. Educators remain tied to that-which-has-always-been when the amount there is to learn increases by the minute. The exposure to a variety of disciplines will bring us closer to the acquisition of critical thinking and problem solving skills, closer to the Renaissance Man.

In the July 1994 issue of Life magazine, supermarket shoppers may have been startled by what appeared to be a human brain splayed across the front cover. According to the article "Building a Better Brain", scientists now have evidence to show that the human brain functions much like a muscle. Thus, the more this muscle is used the more it grows; therefore, to strengthen the mind, we are encouraged to do puzzles of all kinds, to play a musical instrument, to learn to repair something and to meet new and fascinating people. Anything that is intellectually challenging can add to the computational powers of the brain. By increasing students' exposure to knowledge, teachers, in essence, are helping them build a better brain.

According to surveys of teachers, science and math teachers find the extended period quite beneficial. They mention that with this schedule they are finally able to "practice what they teach." Science teachers are often able to complete entire labs

in a single period. Math teachers can not only teach a concept in its entirety but also they can provide in-class practice activities to reinforce the learning or clarify any confusion. Teachers of Physical Education, Vocational Education and business courses no longer lose so much of their classtime to the process of setting up and completing.

Standing on the threshold of the 21st century teachers as educated citizens must remain open to experimentation, open to changes. Those of us who have reached middle age may recall that beeping filmstrips narrated by the teacher were once enjoyable, high tech options. Amazingly, computers have now moved from the business department to the English classroom. Even the College Boards have restructured to allow calculators. The individual teacher has had to seek new methods to best use the block scheduling. Cooperative groups, cross discipline studies, learning logs and everything but the kitchen sink have been utilized to make the best use of this time. In this period of change, it is easy to understand why some have not been comfortable with this schedule. Only time is the answer, time for teachers to revamp the techniques that were unsuccessful. New and better lesson plans will develop from this change. The honest teacher will admit that her first year of teaching was carried along as much by enthusiasm as by knowledge. This new scheduling turned even the most experienced into a novice once again.

Eighty-five minutes is a long time. It is longer than a sit-com, longer than a soap opera and almost as long as a feature-length movie. Placing a teacher in a room for eighty-five minutes with chalk, a textbook and 28 students could result in a blood bath. Instead, attendance has improved and over-all grades have improved as well. What can be said that is a more effective argument? Yes, students are making better grades. Yes, students are missing less time from school. Students at Monacan are building better brains. How very wonderful.

Certainly, there may be need for a tune-up and minor adjustments, but right now in spite of it all, we have moved into fifth gear and we are cruising.

NEGATIVE ASPECTS

Often the theory and the reality of an idea are widely divergent, such is the case with the 4 period day at Monacan High School. The theory was to allow the existing time to provide the frame which would be utilized creatively to encompass more electives and provide the opportunity to explore other areas of interest. Previously on the traditional six period schedule, students barely had space for the required courses much less the chance to take anything else. The reality at this point in time is that students are already figuring out that they only need 24 credits to graduate. So, why not finish in three years? Also, there are too few electives to absorb the influx of

student trying to fill up their schedules with something interesting and worthwhile. Consequently the reality is that the school has a plethora of teacher aids. At least one student is an aide twice in the day because there were no classes which he wanted to pursue. There has to be a better way to fill up a student's schedule.

The proposal of the original plan for the 4 period day included making class sizes smaller teaching only three classes per day; thus, the number of students would be fewer per teacher and the opportunity would exist for teachers to get to know their students better, to incorporate new and creative methods of teaching and to benefit from more time for evaluation. The reality for some teachers has been that class sizes are not smaller. In fact, in English they are at an all time high in the twelfth grade as more and more students transfer in from other areas of the county. Perhaps they hope to finish a semester early or to have the opportunity for fix their schedule if they failed first semester.

Because everything has to be done in one semester, the inequity of semester length is detrimental. Currently as structured, both first and second semesters provided less class time than offered by the traditional schedule. Perhaps one of the biggest differences seen concern the teaching of the writing process in English classes. In the ninth and tenth grades, a specific number of major writings are to be completed and kept on file. These assignments must run the gamut from pre-writing through numerous drafts to a final product. In the eleventh grade, the process is made more

difficult. Students must complete not only the traditional required writings but also the thesis paper with all its component parts. The thesis paper used to be taught as an extension to the intense writing of first semester. Now this project must be accomplished in conjunction with the other writings. At times the students expressed a sense of frustration as they attempted to coordinate these many tasks. A the end of one semester after managing to overcome this monumental task, teachers are then asked to do it all over again with just one day for grading, planning and recuperating. A sense of exhaustion and depression overcomes even the most stalwart educator.

Teachers in some disciplines have found planning time on the new schedule wonderful because it is more time than they have ever had before; however; English teachers have lost time. In addition to grading papers, averaging grades, planning interesting, varied and creative lessons plans filling 85 minutes, making phone calls home, keeping up with homebound students, in-school detention and student concerns, the English teacher must also teach and evaluate the county mandated writings. Granted these same tasks were expected with the traditional schedule; however, now these tasks must be performed in half the time. One of the best gifts a teacher can give a student is the idea that learning can be fun. That very element is difficult to achieve in this new schedule. There is a relentless drive to beat the clock as it ceaselessly ticks off the minutes of the semester.

Many said that if teachers would just give the new schedule one semester, things would be easier the next semester. Teachers would get the hang of it. A semester and more has passed and although pacing is becoming easier, many issues still remain unresolved both logistically and philosophically. The paper load is staggering. Another essay, test, prewriting, outline, research project or thesis paper is constantly waiting for grading. There is not turn around time for teachers and students to reference a previous assignment as a learning tool for the next assignment. During first semester one teacher reported significantly lower grades on the thesis paper assignment than in previous years. This grade difference was attributed to the loss of an entire semester's worth of intensive writing practice before the thesis paper is begun. This is no longer possible on the 4 period semester. Philosophically, the feasibility of the 4 period schedule for every discipline must eventually be addressed. Although each discipline may point to the tremendous benefits of the longer time in class, one must ask if the benefits out-weigh the detriments. Often students report that teachers are still lecturing for 85 minutes straight, day after day. What happened to the opportunity to be interesting, varied and creative? Another complaint voiced by students is that assignments are not returned in a timely manner. Other students mentioned a rushed and frantic pacing to their classes. Finally they spoke of being overwhelmingly bored in three out of four periods a day.

Educationally, the 4 period day does not factor in process and retention time. The mind can only absorb what the seat can endure. Students need time to let concepts sink in before preceding to the next topic. When the schedule was touted to the public, the idea was sold that students could concentrate in more depth and receive more opportunities to apply the information. The reality is less depth and fewer opportunities to apply the information. One teacher refers to the program as "fast food" education - perhaps at a drive-thru.

The sense of running a frantic race with the seconds ticking by raises another philosophical question: Should there be competition between quality and quantity; between depth and superficiality? Perhaps the very answer to this dilemma lies in restructuring the curriculum. During the first test year, teachers are still exploring pacing, setting priorities and rewriting lesson plans. Perhaps over time the sense of being driven to complete an allocated amount of work will lessen and a new, more efficient curriculum will evolve. The concern which emerges from this process is that rather than redo the curriculum, overburdened and overwhelmed teachers will settle for the status-quo felling powerless to effect a change. Although the four period schedule ideally seems to allow teachers the opportunity to branch out and be creative, the reality is that this schedule has little to do with creativity and more to do with economics. As implemented at Monacan, fewer teachers are needed to run this schedule. Where once a teacher taught 4 or 5 periods, on the new schedule, a teacher

is engaged in 6 periods. Simple mathematics shows the reduction in force. Fewer teachers result in less money spent on salaries; therefore, a cost-effective solution. The hope is that this is not what is fueling this schedule. Unfortunately the fear by some teachers is that cost-effectiveness is exactly what has motivated the push to see this schedule adopted by the county. This schedule needs more than fine tuning.

We are not cruising. We are shifting gears so often; we are in danger of burning out the clutch.

In the words of Ken Kesey, "What a long strange trip this has been." In the eyes of some it has been an exciting journey down roads never before traveled. While in the eyes of others it has been a disappointing journey with the destination unknown.

Having drawn from both research and personal experience we, as teacher-researchers, find that we are unable to reach a conclusion, to reach our destination. We find ourselves riding an unending highway. Only the gift of time will reveal whether the road leads to success or failure.

APPENDICES

Results of 4 Period Survey Administered by the School

Student 4 Period Day
March

Current Grade Level (circle):
9 **148** 10 **136** 11 **227** 12 **209** No Grade **7**

Have you noticed an increase or decrease in the amount of homework you have had so far this year compared to the last year?
MAJOR INCREASE **186** MINOR INCREASE **217** THE SAME AS IN THE PAST **191**
MINOR DECREASE **186** MAJOR DECREASE **35**

Were the grades you received for your first half of the year courses better or worse then the grades you normally receive?
ALL BETTER **93** SOME BETTER **201** ABOUT THE SAME **182**
SLIGHTLY WORSE **98** MUCH WORSE **45**

Compared to last year, do you feel you are learning more or less?
DEFINITELY MORE **93** A LITTLE MORE **163** ABOUT THE SAME **327**
SLIGHTLY LES **154** DEFINITELY LESS **29**
LESS, BUT IT IS ME, NOT THE CHANGE IN SCHEDULE **4**

Compared to September, how are you handling the amount of time the class period lasts?
I AM USED TO IT NOW **205** I AM GETTING USED TO IT **206**
I HAD NO PROBLEM THEN OR NOW WITH THE LENGTH OF THE PERIOD **175**
I AM STILL HAVING TROUBLE **133**

In general, how have you viewed the change to a four period day?

I LOVE IT **113** I LIKE IT **292** SCHOOL IS SCHOOL **173**
REALLY DON'T FAVOR IT **59** HATE IT **74**

Given the choice, what would you recommend for the future:
A. Keep the 4 Period Day Schedule
B. Go back to the 6 Period Day
C. Go to an alternating day schedule of block classes (4 on Monday, Wednesday, Friday, -- a different 4 on Tuesday, Thursday and switch days every other week)
D. Other

	4 X 4	Alt 7	6 Per	7 Per Day
9th Grade	124	9	9	1
10th Grade	122	2	4	0
11th Grade	107	51	62	0
12th Grade	151	30	25	3
Totals	**504**	**92**	**100**	**4**

727 Students returned the questionnaire which was distributed in Social Studies classrooms on March 7.

Teacher Survey Administered by the School

4 Period Day
1st Grading Period
2nd Term

RESULTS

68 Total Teacher Responses:

Math 9/12	PE 4/6	Fine Arts 4/6	Science 8/11	English 10/15
Bus/Voc 9/11	Soc. Stud. 11/12	For. Lang. 8/9	Spec. Ed.4/7	Library 1/1

1. This 2nd Term I am spending ___ time on lesson planning.
   More **15** Less **13** The same **39**

2. This 2nd Term I am spending ___ time correcting papers.
   More **15** Less **13** The same **39**

3. Compared to this time of year last year, in terms of maintaining student attentiveness and interest, I am experiencing:
   Serious problems **1** Some problems **21**
   Almost no problems **25** No problems **16**

4. In comparison with the 6 period day, these problems with attentiveness and interest are:
   The same in 4 pd **22** More serious in 4 pd **8** Less serious in 4 pd **27**

5. Student performance in my class compared to this time of year (March) a year ago is :
   Better **24** Worse **3** The same **33**

6. Compared to this time last year (March), when it come to homework, the quality and completion rate is:
   Better this year **21** Worse this year **7** About the same **35**

7. My last set of 2nd term grades, compared to last year's (March 1994) third nine weeks grades, were:
   Better **31** Worse **3** About the same **23**

8. Considering we've completed the first grading period, in terms of curriculum coverage:
   I am ahead **3** I am where I should be **31** Slightly behind **22** Behind **5**

9. In terms of student mastery of important concepts, compared to this time of year, last year (March 1994), I feel the students are doing:
   Better **23** The same **22** Worse **4**

10. I feel students in my class are receiving ___ opportunities to think critically and analytically, compared to first term:
    More **23** The same **37** Less **3**

11. I have had ___ discussions about curriculum with colleagues so far this year compared to year's past.
    More **21** Less **13** About the same **29**

12. In terms of experimenting with different instructional methods, compared to school year '93-'94, this year:
    I am doing more **29** I am doing less **9** About the same **23**

13. In my class, students have had ___ opportunities to talk in classes this year.
    More **26** Less **13** About the same **19**

14. In terms of my own teaching effectiveness, this term:
    I am doing better **16** I am doing worse **1** About the same **41**

15. I feel my students think that in the classroom I am:
    Doing a good job of mixing activities **51** Lecturing too much **2**
    Not able to make a judgement **7**

16. I have made ___ adjustments in content coverage since first term:
    Many **7** Some **36** Very few **13** No **6**

17. Would your course adjust readily to an alternating day format within the four period day structure?

    Definitely **11** Maybe **12** Not really **9** No **31**

18. Considering everything, at this point in time:
    A. I would like to continue on the 4 period day
    B. I would like to return to our traditional 6
    C. I would like to look at other options like an alternating 7
    D. I would like to look at other options (fill in) _____

Library	A=1	B=0	C=0	D=0
Math	A=9	B=0	C=0	D=0
Soc. Stud.	A=9	B=1	C=1	D=0
PE	A=4	B=0	C=0	D=0
Spe. Ed.	A=4	B=0	C=0	D=0
Fine Art	A=3	B=1	C=0	D=0
Bus/Voc	A=9	B=0	C=0	D=0
Sci.	A=7	B=0	C=1	D=0
For. Lang.	A=4	B=0	C=0	D=4*
Eng.	A=4	B=2	C=2	D=2
Total	**A=54**	**B=3**	**C=4**	**D=6**

68 out of possible 90 responses (some turned in as first year teacher - not able to compare to past schedule).
*suggested straight 7 period day

A SURVEY OF KIND AND GENTEEL FOLKS

1. What do you see as benefits of the four period day?

2. What do you see as negatives of the four period day?

3. What changes do you see in:

    A. Student attendance

    B. Discipline

    C. Your paper load

4. If you have concern specific to your content area, please explain. (Ex. Labs.)

5. How has the four period day affected you personally?

SURVEY TWO (AND THE LAST)

1. What difficulties or successes did you have closing first semester year and beginning a new second semester year? (Energy level? Lesson planning/ Time management? Etc.)

2. Were there significant portions of the curriculum you were not able to cover in the first semester or did you find you were able to cover your curriculum?

3. According to calculations with 86 days comprising first semester and 92 days comprising second semester and using a class length of 85 minutes as compared to the old 50 minute class period, the first semester is 31.8 days shorter than the previous year. Our second semester year is 21.6 days shorter. How have you been able to overcome this difference in time?

4. Please comment on any other relevant issues pertaining to the 4 period day (positives, negatives, ambivalences).

5. Please comment on your understanding of the transfer center.

IF YOU FEEL COMFORTABLE STATING SO. PLEASE GIVE YOUR DEPARTMENT_____

PLEASE RETURN THIS TO EITHER BETTINA OR ANGIE BY FEBRUARY 24.

THANK YOU AHEAD OF TIME TO ALL OUR COLLEAGUES FOR ALL THEIR HELP AND PARTICIPATION!!!

Four Period Day Semester Schedule Update

Background

Since 1987, when a county-wide task force found that a seven-day period day was needed in the Chesterfield high schools, the School Board has supported the goal of providing moire course opportunities for high school students. In subsequent years, however, the costs associated with a growing student population drained the Board's financial resources and it was not able to fund a seven-period day. The cost was prohibited not only because a seven-period day required additional faculty, but also because it required a longer school day which added sharply to transportation costs.

In the spring of 1993, the Clover High School faculty and School Council asked the Board to consider a pilot which would reduce the costs associated with the seven-period day. The plan involved seven classes, six of which would alternate on an every-other-day basis. Because the plan restructured the school day and used time more efficiently, the length of the school day did not change. The Board found the plan interesting and agreed to a pilot in anticipation that this cost-effective schedule, if successful, would be a core achievable goal.

Even though the Clover Hill schedule enjoyed significant success, continued financial constraints and other school budget priorities made in increasingly doubtful that the Board could expand the Clover Hill pilot to high schools across the county.

Even before the Clover Hill pilot had begun, the Monacan School Council had been studying a number of scheduling options to identify both the faculty and parents could support. The Council settled on the 4 + 4 schedule not only because it appeared to be even more cost effective than the seven-period schedule, but more importantly because the Council's research indicated that the schedule offered many potential advantages for students and teachers. The Council had held information meetings for parents and teachers and had received positive feedback from these groups. In the spring of 1994, therefore, the Council asked to use the schedule because of a large number of parent requests to expand course opportunities for students. The Board gave its permission for these pilots with the understanding that both schools continue to communicate with parents to explain the schedule and to answer parent questions.

What is the Schedule designed to do?

The 4 + 4 schedule is designed to provide the following:

- More student course selection opportunities
- Greater opportunities for students to enroll in advanced levels of sequential courses such as science, mathematics and foreign language. The ability to take more than one mathematics course per year, for example, means that all students have access to advanced mathematics no matter when they started algebra.
- Fewer subjects at a time, allowing students to concentrate in more depth on the courses they take
- Remediation for students who fail a course first term. They can start again second term rather than waiting until the following year.
- A greater portion of the school day focused on classroom instruction since less time is spent moving through the halls and in class start-up and ending time

(Continued)

- Longer class periods providing the opportunity for students to apply information to gain deeper understanding
- Improved attendance
- Reduced disciplinary referrals
- A calmer environment/atmosphere in the building

How will the schedule be evaluated?

This spring and summer, the Metropolitan Educational Research Consortium (MERC) at Virginia Commonwealth University will conduct a study of the various high school schedules, including the 4 + 4 schedule, used in Chesterfield County. Among the items the MERC study will include are as follows:

- Teacher survey and focus groups
- Parent survey and focus groups
- Student survey and focus groups
- Building administrator and counselor interviews
- Examination of the results of the Iowa Test of Basic Skills scores
- Examination of student grades
- Examination of Advanced Placement test scores
- Examination of SAT scores
- Examination of attendance, discipline and drop-out records

The surveys will be distributed in April to all teachers, students and parents in the schools being studied. The focus groups, comprised of individuals chosen at random by MERC, will take place in May. The primary purpose of the study will be to focus on student achievement issues.

What happens next?

Since all test data will not be available until summer, MERC will not complete its report until early fall. In September, 1995, MERC will present its finding to the School Board and the results will then be made available to staff and parents. After allowing for public input, the Board will decide which schedule(s) will be used in high schools across the county beginning in the fall of 1996.

If you have questions regarding this information, please contact any of the following:

John Titus, Principal, Monacan High School (378-2480)
Alenia Wilder, Director, Secondary Education (560-2756)
Larry J. Elliott, Deputy, Superintendent of Instruction (560-2753)

THE SUCCESSFUL INTERDISCIPLINARY COURSE MUST SECEDE FROM THE TRADITIONAL

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April, 1995

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THE SUCCESSFUL INTERDISCIPLINARY CLASS

MUST SECEDE FROM THE TRADITIONAL

Why do students act more positively in an interdisciplinary approach to learning? How does the teacher create a successful learning environment in an interdisciplinary class? After almost two years of involvement in such a class we decided some answers were imperative for the continuation of our program. We have zeroed in on many facets of a program that began as a result of Dr. Roger Taylor's one day seminar on "Strengthening English and Social Studies Instruction" in March of 1993. We were infused with his enthusiasm, logic and his apparent successful use of this approach. Our first year saw us constantly concentrating on curriculum concerns. We did not rewrite the curriculum; we integrated the prescribed Social Studies and English requirements for AP/H (Advanced Placement and Honors) students in Chesterfield County. This year we are focusing on the Four C's: cohesiveness, cooperation, conducive environment and concept improvement in an effort to achieve academic success. Do each or any of these elements contribute to the success of the program?

PURPOSE

The purpose of our study is to determine if this class is effective and secondly, to identify those elements that may have contributed to this effectiveness.

We have agreed to define "success" (student) and "effective" (teacher) in the following manner:

Success for students: Achievement: improvement of grades when comparing the first and second quarters of the 1994-1995 school year.

Our belief that effective instruction produces an environment that generates successful students leads us to define "effective" (teacher) as to the students' perceptions of the degree to which the following exist in the classroom:

Success for teachers:
- cohesiveness
- cooperation
- conducive environment
- concept improvement

These definitions are based upon oral feedback voluntarily generated by last year's students and the scores from their Advanced Placement Exams taken in May of 1994. These seniors were in the AP/Honors programs and were coming to us after eleven years of the time honored, traditional, standard educational fare. They were uncomfortable in this new environment where they were expected to assume greater responsibility for their own learning while employing more advanced critical thinking skills.

Initial resistance to the program was very much in evidence prior to the annual "Back to School Night" which was later than usual that year. Parental concerns stemmed from what was construed as an increased workload, more demanding involvement and the lack of a basis for comparison. These questions were addressed

at the "Back to School Night" and led to numerous expressions of support during the year.

Sam, Sue and Bob were three students whose oral feedback we welcomed because of the diversity in their backgrounds.

Sam's college required that he enroll in summer school as a form of orientation prior to his first semester. He was one of two freshman students to receive an "A" in an English class where the professor had stated that "Freshmen neither receive nor deserve "A's" in this class." Sam stated that the interdisciplinary class allowed him to develop greater confidence in his academic abilities. Sue found herself "way ahead of the learning game" when comparing her preparation and perceptions to those of her freshman peers. She was an indigent who credits the interdisciplinary class with her acceleration in college as a result of her AP scores and her scholarship grants. Bob would have been academically successful because of his motivation and determination. His social skills and peer interaction were almost negligible. By the end of the school year he was no longer shunned by his peers but found himself willingly participating in senior activities to the point of helping with the valedictory. It must be noted here that we were never able to convince two of the sixty students involved in the class that the program would be of benefit to them.

BACKGROUND OF CURRENT STUDENTS AND INSTRUCTORS

The current interdisciplinary class consists of twenty-three students who range in abilities from Honors to Below Average (based on T.A.P. test scores). Of these

twenty-three we have identified thirteen who represent a variety of actual or potential problems. These situations run the gamut; a former Juvenile Detention Center inmate, members of dysfunctional families, self-supporting teens, and teens with obsessive compulsive disorders. The remainder of the class constitutes part of the standard mix inherent in a suburban high school; college bound motivated students, some of whom are also successful athletes.

When we considered the teaming of instructors we were obliged to admit to some initial misgivings. Traditionally, one expects effective teams to comprise of individuals with similar personalities, philosophies and educational experiences. The only commonalties we could find in each other were the facts that we taught at the same school and co-sponsored the Senior Class!

Our respective assistant principals saw these two factors as sufficient to merit our taking a risk and putting a class together. The countless hours of planning that followed actually found us enjoying our disagreements, bouncing ideas back and forth and above all, experiencing the "honest revelations of our ignorance."

We learned to trade liberal and conservative hats, broker for equal time and most importantly, relinquish the ownership of those familiarly labeled "It's worked for me all these years, why change it?" units. Our experiences more than prepared us for this year's interdisciplinary class.

DATA COLLECTION AND PROCEDURES

The main focus of our research revolved around journal entries. We maintained

individual journals and at periodic intervals got together to share our findings and observations.

Our grade books provided us with a way of charting academic progress and helped us in consulting with other subject area teachers.

Our final source was a member of special services at our school. Her insight and background information proved valuable because it helped ensure a more expedient and insightful assessment of students' needs.

Each time we shared our journal observations we attempted to find common strands. At first we believed we had to force commonalities but the time finally came when we actually could see similarities in our observations. We did not confer prior to class to decide what should be observed. This led to some interesting discussions when we met to share entries! On November 16, 1994, one of us wrote, "We balanced the class today," while the other wrote, "We need more balance". On March 28, 1995, one of us wrote "Yes! we're finally getting there!" while the other wrote, "This is it, we're on target!" To reach this point of agreement, exhibited by our most recent entries, has necessitated a constant willingness to forego or restructure the practices of a teaching lifetime. Constant focusing on the Four C's has ensured our continued awareness of the main purpose of our study.

When the school year began, we explained the Four C's and our hopes that they would provide the environment that generates not only academic success but also promotes personal growth.

Tom wanted academic success on a personal basis while Pam was indifferent to achievement, hampered by absenteeism, tardiness and a failure to make up missing assignments. On the other hand, Jane was so bogged down by personal pressures that she could not function in a group setting. Her extreme self absorption crippled any chances she had for success and she was constantly playing "catch up." These three students, like many of their classmates, were constantly shuffled from one cooperative learning group to another. At the time of this writing we consider them to be examples of successful cooperation. Tom is willing to share his research findings, personal learning styles, and knowledge with Pam. Jane is a strong advocate of team playing and brings in related articles and findings to share with Pam and Tom. Pam is present, on time and looking for help so that she may contribute to her pod's (group) success.

Joe, Larry, Ken and Mike viewed themselves as "odd" and not part of any group. Each of them wanted to work alone claiming, "I do better on my own." When each failed the first quarter (nine weeks), we realized some action had to be taken. We put them together in a pod. Each gradually became aware that his differences made no difference and that the class as a unit accepted his individuality. Currently they refer to themselves as "The Odd Pod"; "odd" being synonymous with "unique". They accept and indeed relish their uniqueness as artists, writers, musicians and dreamers. When we have class discussions they are very vocal in their opinions and are no longer defensive. Their current grades are "C" or better. In this

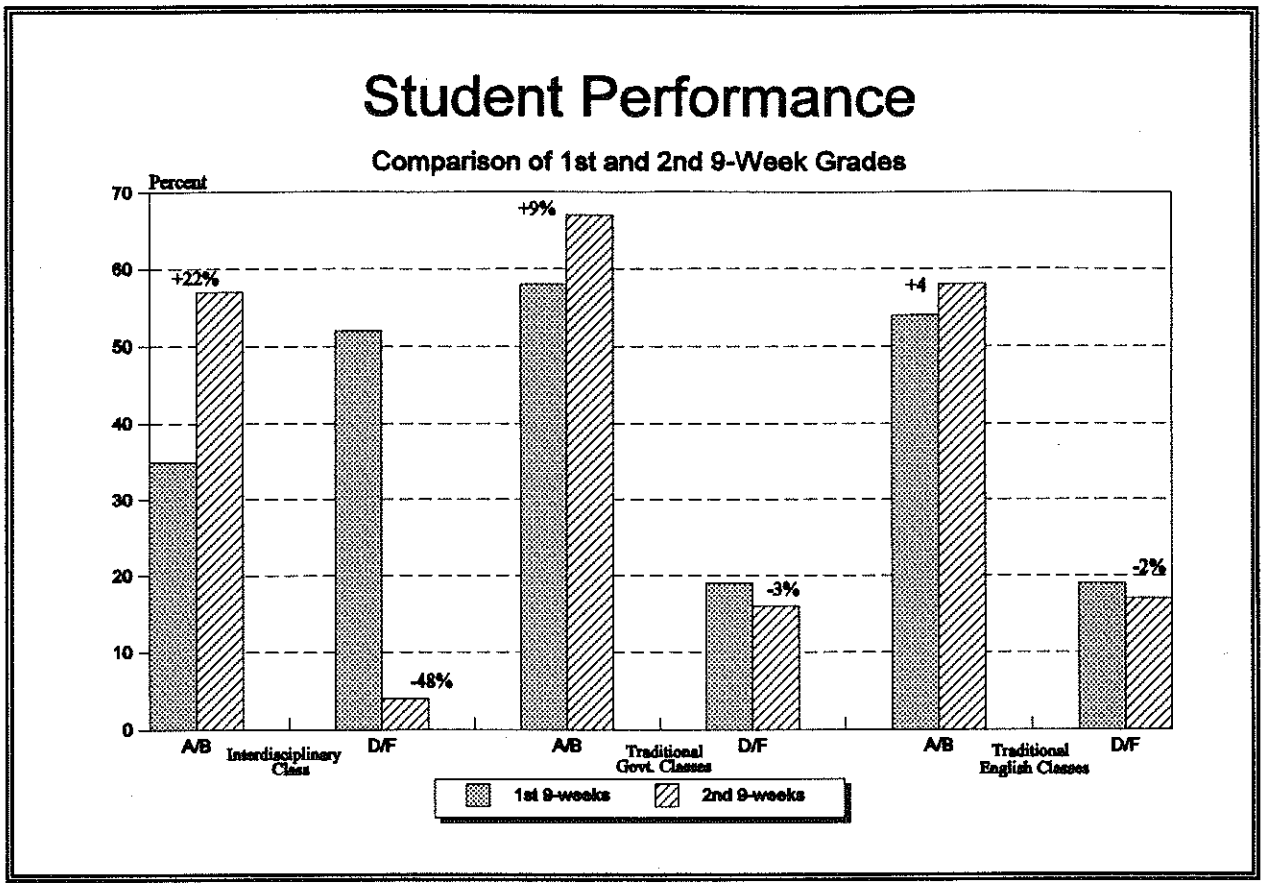
group we see cohesiveness in action. On the "negative" side we have difficulty keeping them quiet as they constantly want to discuss their opinions and findings!

Where establishing a conducive environment was concerned we felt doomed to failure with Ted and Linda. Not only were they new to Chesterfield County, but they were seniors who had left all their friends behind in New York and Iowa respectively. They were very opinionated in their criticisms of our school, our system and our culture. Everything was better "at home" in New York and Iowa. Low grades were blamed on "your weird way of doing things down here." Parent conferences elicited the same responses but also gave us valuable background information. We explored several options based on this information. One of our first projects was to have each student introduce himself/herself to the class. This gave Linda and Ted the chance to share their culture, i.e. games, hobbies, education, family and future goals. This provided class members with the opportunity to become familiar with each other's diversities and helped promote cultural awareness. Slowly, but surely, Linda and Ted became absorbed into the class and though we still hear the occasional "At home we always . . . ," it is no longer deafening. Ted has found a comfortable niche and is making excellent academic progress. His current grade is "B+." Linda has come around almost 360 degrees. She is enthusiastic, curious and very much the guiding light in many of our discussions. Her current grade is a "B."

Concept improvement was going to be a breeze; positive reinforcement and

lavish praise! The cliches fairly oozed from our pores until we met Daisy. Here was the personification of a brick wall. "Don't bother me," "I don't need y'alls help," "So what if I fail?" were her stock-in-trade reactions to our team and individual efforts to develop a rapport with her. Of the four courses she was taking, she was in danger of failing three. Finally, after tolerating the inappropriate language and the belligerence ("So what if I parked in the Principal's parking spot? I have an exam to take and she doesn't") we decided to approach her with the idea that we didn't want her to fail. We promised to tutor her in all her subjects and encouraged her to make the best of her physical as well as intellectual assets. We would love to write that she is a changed person, we cannot! There are still days when one of us has to take her for a calming walk around the building or to the parking lot to check just where she is parked this time! We can, however, report that as of now she is passing all her subjects and even comes in early for help or just to chat.

To get a comparative picture of student performance we looked at end of nine week grades for the first and second grading periods for the students in our interdisciplinary class versus those in traditional senior government and English classes at Clover Hill High. (We plan to examine grades from the third nine-week grading period when they become available.



As the graph shows the combined percent of A's and B's rose from 35% to 57% (+22%) in the interdisciplinary class while the percent of D's and F's declined from 52% to 4% (-48%). A's and B's combined rose 9% and 4% in government and English respectively, while D's and F's dropped 3% in government and 2% in English.

SO WHAT?
SUMMARY AND CONCLUSIONS

Our research has led us to surmise that many factors contribute to academic success and student growth. From a personal perspective we were amazed by the multiplicity of differences existing between the two team members. Our classroom management techniques are still quite individual, though we have learned to "live with" and accept these differences! Rather than subscribing to the traditional learning mode and teacher/student interaction, we concentrated on two factors; student success as defined by the teacher and teacher success as defined by the students. We drew our conclusions from these two components.

Students' differences need to be accepted. Rather than making the effort to change differences it is more advantageous to accept them and create opportunities for them to work positively for the benefit of the entire class.

Cooperative learning is a very necessary tool in the enhancement of the academic environment. Students who are trained to pool their resources, learn from each other, teach each other, and accept a more responsible role in their own and their pods' academic success, are also capable of strides in their personal growth.

Students who are given a more global education through an interdisciplinary class appear more confident to assume leadership roles while also learning that a leader often has to follow.

Teaching teams do not have to consist of clones. Healthy interaction and

success can be generated by people who are just as different and individual as the students they teach.

Journal writing is an important tool for teacher teams because it helps generate discussions, jog memories, and clarify perceptions.

Teacher teams need to cede ownership! Change, flexibility, and risk taking are mandatory components of success. Essentially, we must learn to translate individual ownership into dual responsibility.

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A STUDY OF ANGER AND THE ELEMENTARY STUDENT

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*The views expressed in MERC publications are those of individual authors and not necessarily those of the Consortium or its members.

A Study of Anger and the Elementary Student

By Robyn Tyer and Stephanie Wise

It was a terrible, horrible, no good, very bad day says Judith Viorst in her story about Alexander. The story Alexander and the Terrible, Horrible, No Good, Very Bad Day is well-loved and well-understood by elementary children. Unfortunately, some children relate to the story on a daily basis. As elementary school counselors, we are seeing more and more that children's emotions and their difficulty regulating them are playing a significant role in interfering with successful social, behavioral and academic situations. Specifically, anger has surfaced at an increasing rate.

Anger is one of the most common and powerful emotions experienced by children. Anger is often the culprit behind difficulties children have expressing feelings and controlling their impulses. For this reason there are a myriad of anger control strategies and programs for children. We teach anger control strategies in the classroom, in small groups and on an individual basis. We help children to understand the various constructive ways to express anger and the consequences of expressing anger in both appropriate and inappropriate ways.

But still, students continue to let their anger get control of them instead of controlling their anger. Is anger a mask for other feelings and situations we are unaware of? Is poor impulse control or poor frustration tolerance an inherited predisposition? Is anger a compensation for academic and/or social deficits? Are the strategies we are teaching a waste of time? Are there better ways to help angry children?

With such an astounding list of difficult questions we began our research project. The purpose of our study was to explore the various instances in which children lost control of their anger and to get a first-hand account of their perceptions of their situations. With this information, we hoped to have a better understanding of children's anger and thereby, a better understanding of how to help our students succeed in school.

Data Collection and Procedures

Data for our research was collected through a survey distributed to school counselors, administrators and classroom teachers. Survey questions were developed by careful consideration of factors, which we determined would most likely have an influence on a child's emotions. It was decided that home environment and any disruptions therein would impact the child's feelings about himself and his school day. It also was of interest to know whether medication or time of day played a role in anger.

These three questions were asked along with an inquiry as to whether anger outbursts appeared to be an isolated incident or were a part of a history of loss of control.

Students were asked what was the precipitating factor in their anger, as well as what attempts were made to control their emotions. We also surveyed television viewing habits and typical breakfast diets.

An initial draft of the survey was given to 13 elementary counselors in Hanover County Schools. Helpful feedback brought about an addition of questions concerning whether or not a student had an IEP (individualized education plan) or an SEP (student education plan) and whether or not the student perceived that his teacher liked him. Students also were asked what their class was doing when they became angry and how they are doing in their academic work.

The final survey again was distributed to the elementary counselors, as well as school administrators and teachers, for their use with children who were referred to them for anger control issues. Teachers and administrators were asked to send children who were having anger outbursts directly to the counselor or designated interviewer before punitive intervention. It was felt that by doing this more accurate information could be obtained as to the child's true feelings as opposed to what they felt they should be saying in repentance.

When an angry child was sent to an interviewer, he was asked the survey questions. Since there were a number of interviewers, the method of administration was not controlled. However, it generally was assumed that the questions were asked orally and that empathy and concern for the child's feelings were displayed. The survey was given in a private setting, away from other children and away from the setting in which the child originally became angry. The children were followed up at a later date for further feelings assessment. These later counseling sessions were not included in this survey.

After all surveys were collected, responses were tallied for each question and an attempt was made to find recurring elements which would indicate a causative factor of anger in children. Once these factors were identified, it was hoped that intervention strategies which could head off loss of anger control could be employed in future counseling sessions.

Survey Results

From the beginning of January to the middle of March, seven area elementary schools interviewed 36 males and one female for a total of 37 completed student

interviews. Elementary school counselors conducted 29 of the interviews; elementary school administrators conducted seven of the interviews; and one elementary classroom teacher conducted an interview. Students ranged in age from six years to eleven years old, which placed them in Kindergarten-5th grades. The following information was gleaned from the interviews:

Number of interviewees taking medication:
- temporary (cold) medicine- 4
- medication for ADD/ADHD- 7
- no medication- 24
- unknown- 2

Number of interviewees with an IEP or SEP: 9

Number of interviewees with a chronic/recurring anger problem:
- chronic problem- 26
- not chronic problem- 10
- no response- 1

Time of day outburst occurred:
- 8:00-10:00 a.m.- 17 students
- 10:00-Noon- 7 students
- Noon-end of school day- 12 students
- no indication- 1 student

Cause of anger:

A variety of responses were given including teasing, too much work, not wanting to be at school, not wanting to do the work and "messing with stuff."

Student's school activity at the time of the anger outburst:
- structured (class work, planned activity)- 13 students
- unstructured (on bus, lunch, changing classes)- 22 students
- not classifiable- 2 students

Perceived anger control attempts:

Students reported using a variety of attempts to control their anger before "blowing up." Strategies included ignoring, counting to ten and asking the person to stop.

Feelings at the day's beginning (before coming to school):
- mad/sad- 10 students
- not mad- 27 students

Lack of sleep as a contributing factor to anger:
- yes- 9
- no- 27
- unknown- 1

Television viewing:

Student's television viewing varied and ranged from movie videos including Lion King to the Nickelodeon channel, to regular t.v. shows such as The Simpson's, Cops/911 and Blood Sport.

Perceived situation at home as contributor to anger:

yes-18
no-19

Students' reported diets:

The majority of students ate breakfast and lunch. Most students reported eating packaged, quick foods for breakfast and school-prepared food for lunch.

Teacher's feelings toward you, as perceived by the student:

mad/sad-17
not mad-9
unknown-11

Students who could name a best subject or academic strength:

yes-32
no-5

Students who could name something they felt good about that day:

yes-24 (things they felt good about mainly were positive interactions with friends and completion of school projects)
no-13

Students who felt they used an anger control strategy:

yes-23
no-14

Strategies included: ignore, walk away, tell the teacher, think/relax, count to 10, kick a ball, imagine things, put thoughts in writing, tell person to stop, breathe slowly, put head on desk.

Students who perceived control of situation enough to change it:

yes-28
no-9

What students wished for if king of the land:

fairness/honesty, no drugs/alcohol, everyone behave/be nice, no teasing, stop violence/fighting, homes for the homeless, no parents, no school, less work, kids in charge and do anything they want, to be obeyed or else placed in a dungeon/cage

Observations and Reflections

After careful analysis of the data, we determined that the overwhelming majority of children who showed a lack of anger control were males (36 out of 37) ranging in age from six to eleven years. Most of these children had not been identified as having learning difficulties and most were not being given any type of behavior controlling

medication despite a high incidence of teachers reporting a history of behavioral outbursts.

Seventeen out of 37 incidents occurred before 10:00 a.m. This included the unstructured time the children were waiting for school to begin as well as the time spent on the bus in the morning. Twelve out of 37 incidents occurred after 12:00 p.m., which included the unstructured after-school time and the bus ride home. It was felt that periods of time when the children were not engaged in specific activities and were allowed to interact socially with one another were catalysts for runaway emotions in some children. Twenty-two out of 37 reported that they were in one of these non-activity time spans when they lost control. Although not asked on the survey, future counseling sessions with these students should focus on their perceived peer acceptance and overall security in the school setting.

Most students (27 out of 37) reported that they were not mad when they left home. Approximately 50 percent of respondents indicated that they had no specific problems at home which had caused them to be easily angered at school. The validity of this claim was questioned due to known facts about some students who were included in this number. Rather than make unfounded assumptions about why children would rather not implicate their families, this question was regarded as invalid in determining the results. Three-fourths of the children reported that they felt they had received adequate sleep at home the night before.

Despite a protracted history of chronic anger, 20 out of 37 children did not believe that their teacher disliked them. Nine of these 20 said their teacher did like them and 11 of these 20 indicated that they were unsure about their teachers' feelings. We wondered if the latter group was unsure because they would rather not admit their teachers' unhappiness with them. There appeared to be a general reluctance to acknowledge that their own actions could cause their teacher to see them in a negative light. The 17 who did indicate that their teacher was "sad or mad" may not be capable of assessing the overall teacher opinion apart from the immediate incident at hand. Perhaps a different wording of this question would elicit different responses.

The role of diet is unclear and could bear closer inspection. Most students reported having eaten a fast food type breakfast which was high in fat and sugar. This could be the basis for a whole new research project.

There was no one reason given for why the children became angry. There appeared to be as many different answers as there were children. Elementary-aged children typically are not able to identify esoteric motivations behind incidents. The only

trend seen was to give very subjective and concrete observations of actions of others around them which caused their anger. No interviewee identified his role as causative to the incident.

The Research

A review of the research revealed that investigations on emotion and social functioning in childhood are relatively scarce. Even the literature that was found stressed repeatedly that more attention needs to be given to the role of emotion in normative and non-normative social development. Although a seemingly unresolved problem, several key points were mentioned for consideration.

First, children's understanding of their own and others' emotions and their tendencies to express and regulate their emotions likely influence a variety of aspects of their social functioning. This includes effects on both peers and adults. There was even some support for the idea that having friends and engaging in successful social interaction with peers is related to the ability to regulate strong feelings effectively. In one particular study, aggressive children exhibited less sophisticated understanding of their own emotions than did less aggressive children. Rejected children, it seems, are more likely both to choose aggressive solutions to social problems and to evaluate prosocial solutions as being less effective than their average peers.

Several studies stressed the importance of anger coping programs that include both a self-control component and an understanding of emotions component. Aggressive children should be taught to recognize the behavioral, environmental and physiological cues of anger and to use strategies to control angry feelings. It also is important to teach children constructive ways of letting their peers know they are angry with them. An emphasis was placed on group interaction for coping with anger since children acquire emotional self-control as a result of the increasingly complex demands placed on them by peer interactions and social play.

Secondly, the parent-child relationship is a powerful context for understanding the ways in which emotions are expressed, socialized and regulated. Parental encouragement to control one's emotions has been correlated with children's self-monitoring behavior. A moderate amount of parental encouragement of children's expression of emotion has been associated with teachers' ratings of children's peer competence, friendliness and self-esteem. When encouragement of expression is paired with encouragement of active coping efforts children show constructive modes of coping with anger. In contrast, punitive reactions to minimize the child's feelings (and possibly

minimize parental personal distress) resulted in the child venting emotion aggressively. Some studies also point to the fact that children from maritally distressed homes may have difficulty dealing with emotions. One showed that boys are more likely to be exposed to marital conflict than are girls. Being exposed to violence/conflict through television and games/videos also negatively influences a child's emotional management.

Another important aspect of the research points to children's perceived control over a situation and how it relates to their coping with distressing stimuli. Studies showed that children viewed happiness as resulting from the attainment of a desired goal and anger as occurring when a desired goal is lost or not attained because of an uncontrollable obstacle. Studies related aggression to fear and anxiety as well as negative outcome expectancies due to prior failures. One suggested strategy for giving a child a sense of control was to teach the child self-regulation.

Lastly, temperament might predispose a child to aggressive tendencies. Temperament, in part, influences the learnability of social behaviors and social knowledge. It also influences the development of guilt and conscience, which influence the child's capacity for inhibitory control. Temperamental characteristics may lead us to construe our environments differently. When children's upper limit for stimulation is reached, they engage in activities to reduce the intensity of stimulation they experience from the other person or the situation. When the lower limit for stimulation (boredom) is reached, they will attempt to stimulate their environment. Because individual differences in temperament have consequences for how individuals perceive and react to their environments, these differences need to be considered when managing a learning environment and establishing child-rearing practices.

Conclusion and Implications for Educators

From our research we concluded that our survey reached no clear-cut conclusions but did generate lots of discussion. Our survey can serve as a basis for the development of a more systematic plan to help the angry child. What we were able to find were relationships. For example, most of the incidents (22 out of 37) occurred during unstructured time. From this we concluded that the students are not reacting to academic stressors. Instead we found a relationship between loss of control and unstructured peer interactions. Interestingly, this supports the research stated earlier which found that having friends and engaging in successful social interaction with peers is related to the ability to regulate strong feelings effectively.

We also found a relationship between males and aggressiveness. Specifically, 36 out of the 37 students referred for interviews due to loss of anger control were male. Could loss of anger control be a genetic pre-disposition or does society expect males to react differently to strong emotions? Are boys more likely to employ an external locus of control when feeling overwhelmed? These questions relate to the research on temperament and its role in individual perception of and reaction to environment. Perhaps males simply have a more aggressive temperament. Their aggressive behavior could be a comfortable expression of a myriad of emotions ranging from sadness and hurt feelings to embarrassment , anger and even boredom. Our study seems to suggest these facts as well.

From our research we discovered that most (30 out of 37) of the students exhibiting aggressive behavior had not been identified as needing intervention services or behavior controlling medication despite the history of chronic angry. The school system should consider ways to address the needs of these children.

Specific implications for elementary school counselors include the following:

1) An exploration of a range of emotions and encouragement of expression of these emotions needs to be included in counseling sessions with aggressive children.

2) An assessment of the student's perceptions of peer acceptance and evaluation of their social skills needs to be included in counseling sessions with aggressive children.

3) A focus on attainment of anger control strategies needs to be included in counseling sessions with aggressive children.

4) Direct attention to the preservation of a positive social image while employing anger control strategies needs to be included in counseling sessions with aggressive children, particularly in work with aggressive boys.

5) Counselors need to become more instrumental in seeking referrals to child study teams for children with chronic anger problems.

Although our study is by no means conclusive, we feel that the implications of our results will greatly enhance our counseling methods with children in the elementary school setting. We hope further research on this topic will expand on some of our unanswered concerns.

_____Crisis
_____Non-crisis

_____Administrator
_____Counselor
_____Teacher
_____Other:_____

Questions for and Profile of the Angry Child
Pre-Discipline Interview

General Information:

Name: _____ Age: _____

Gender: _____ Time of Day: _____

Is child taking any medication? _____

Does the child have and IEP or an SEP? _____

Is anger a chronic pattern with this child? (ask teachers, administration) _____

_____

Interview:

What has made you angry or unhappy today? _____

_____

What was your class doing when you got angry? _____

_____

What did you do to try to control your anger? _____

_____

How did you feel before you got on the bus? _____

_____

How late were you up last night? _____ What time did you wake up this morning? _____

What television shows did you watch last night? _____

_____

Is there anything going on at home that is bugging you? _____

_____

What did you eat for breakfast? _____

_____ Lunch? _____

_____

How does your teacher feel about you? _____

_____

What is your best school subject? _____ Your worst?

_____

What have you felt good about today? _____

_____

Is there something you can do to change the situation that has made you angry? _____

_____

_____

If you were king of the land and you made up all the rules- what would you do? _____

_____

WHAT HAS BEEN THE IMPACT OF BEAVERDAM ELEMENTARY SCHOOL'S COMPUTER NETWORK ON TEACHERS?

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April, 1995

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WHAT HAS BEEN THE IMPACT OF BEAVERDAM ELEMENTARY SCHOOL'S COMPUTER NETWORK ON TEACHERS?

Katherine W. Benckert
Donna Y. Kouri
Stephen G. Smith

May 1995

Beaverdam Elementary School consists of approximately 400 students kindergarten through fifth grades with one Head Start classroom. Beaverdam is a rural community in north western Hanover County. The facility was extensively renovated in 1986 and an addition completed in 1989. The faculty of Beaverdam Elementary consists of eighteen classroom teachers, ten resource teachers, and two administrators. The years of experience of our teachers varies from first year to over twenty years of teaching.

The integration of technology has emerged over the past three years as an integral part of the curriculum at Beaverdam Elementary. Previous to 1992, Beaverdam Elementary technology consisted mainly of one computer lab for teaching IBM's Writing To Read (WTR) program and an average of one stand alone computer per three classrooms. During the summer of 1992, a school-wide computer network was installed at Beaverdam Elementary. Five computers and one printer have been added to each classroom. The media center's catalog, CD ROM applications, and a communications server are included on the network. The Beaverdam Elementary network was established as a model for other elementary schools in Hanover County. (See appendix A for more details on the current technology at Beaverdam)

Beaverdam Elementary School's research team was comprised of two teachers and one administrator. We decided to participate in MERC because of the opportunity it provided to study our techniques and practices in education. Beaverdam Elementary has been involved in

the School Renewal process for the past five years. This process has already engaged Beaverdam's teachers in activities that examine various aspects of the school and develop procedures for improvement. The Teachers as Researchers project from MERC was a natural step to assist us in continuing a careful examination of our educational ideas. In the initial phases of the project, personal research journals were kept to record thoughts and concerns about students and the school. The team met on several occasions to discuss journals and to brainstorm ideas for the research question. A consensus was reached on a research question relating to technology at Beaverdam Elementary. This topic was chosen because it seemed easier to define than some of the other ideas discussed and because it affects the entire school. Our final research question was "What has been the impact of Beaverdam's computer network on teachers?"

We began our study with a few assumptions. First, we felt the teachers had made a major adjustment when it came to classroom management. The responsibility of utilizing five computers in the classroom was most likely intimidating to teachers. Surely, all the teachers would comment on how difficult it was to integrate computer usage with an already full day. Secondly, we believed the computers had significantly improved the students' individual academic progress.

In order to find a true reading on the impact of computers on teachers, we asked all faculty members who were at Beaverdam Elementary four or more years to participate in an interview. This allowed for before and after comparisons of the computer use in our school. The process of collecting data was narrowed down to conducting interviews vs. surveys. Our team decided that interviews were a more effective and efficient mode to gather this type of information. By using interviews, we were able to converse, interact, and expand while

exploring teachers' perceptions. With a survey, the answers may have been too "cold" for us to use. We would not have received a true sense of the impact of computers. The word "impact" itself is a strong and powerful word, and we were looking for strong and powerful feedback - hence, interviews. The administrator did not participate in the interviews in order to encourage an honest discussion of teachers' feelings regarding technology.

We asked only the 12 teachers with four or more years experience at Beaverdam Elementary. The interviews began with the broad question, "What was the impact of networked computers on you?" After the initial question, we followed up with more specific questions to get a better and more thorough understanding. The initial question assisted us in determining the dominant ideas and feelings of the teachers. All interviews were recorded by audio-cassette tape to insure correct documentation. After the interviews, the responses were tallied and categorized. The following categories emerged directly from the interviews. The ten categories of themes that reoccurred included:

The Networked Computers:

* are time savers
* improve academic and individual progress
* improve attitudes of students toward computers
* improve individual instruction and planning
* allow for a choice of student directed or teacher directed programs
* show a transfer of skills to classwork
* affect teacher's daily schedule
* affect the flow of the day by having resources in the room
* help students become self-directed learners

* allow for immediate feedback and follow-up

After reading the ten themes that emerged from the interviews, we found them exceedingly positive. We questioned ourselves on whether we had asked the right questions, and if we could we get more and better information from our faculty. We held a luncheon for all participants of the interviews. The luncheon was conducted in a manner to encourage large group discussion with all members present at the same time. We hoped that the teachers would discuss with one another and we would receive a deeper understanding of the impact of computers. Our faculty graciously agreed to the luncheon, knowing they would be prodded for more documentation in our research. The information gathered in the large group discussion confirmed our findings from the individual interviews.

From the interviews and large group discussion, we felt the following areas were helpful to share with other educators.

1. Computers Improved Academic and Individual Progress

All 10 teachers interviewed spoke freely about how the computers improved and enhanced the individual student in their unique style. The computers are a "tool" that each child may use individually at their own rate without risk. In a sense, the computers can be viewed as five more teachers in the classroom.

2. Computers Improved Individual Instruction and Planning

Nine teachers responded "yes" the computers improve individual instruction and help with individual planning. Five students could be doing five completely different things at precisely the same time. The activities for the students were right at their fingertips. One

teacher spoke how the computers allowed five students on computers, while maybe one group is working on an assignment. The computers allowed the students to take the initiative in their learning. They could explore new programs, and advance themselves on whatever area they were working. The one teacher who did not comment on this area is a paraprofessional and she does not plan for a class.

3. Evidence of Transfer of Skills to Students' Classwork

Teachers felt there was a definite transfer of the progress made on computers to the students's classwork. Concepts and skills learned by students were being carried over into classwork and enhanced their classwork.

One teacher felt not all students excelled on computers, where some did much better on computers. This teacher also felt writing was better on the computer because "something" happens from the brain to when a child writes and puts it down on paper - with some children something gets lost or mixed up.

One teacher felt the students made more writing errors on the computer. In some sense the children were moving too fast and not taking the necessary time to produce good writing.

One teacher felt writing greatly improved because of the graphics involved, such as the use of pictures and various fonts.

4. Computers Affected the Teacher's Daily Schedule

Eight teachers responded on how it made them change their normal day of teaching. Computers in the classroom had a direct effect in the day to day classroom scheduling.

Four teachers spoke about how, at first, it was a tremendous undertaking to include

computers in an already packed day. Also, the issue of whole group instruction would be affected in order to get enough use from the computers. These four teachers commented that presently they would not want to do without computers. It took some time to adjust, but the present use of computers is better.

Four teachers spoke how computers affected their schedule on the positive. Before the network, the class would perhaps only have one computer. More often than not, the one computer caused more chaos than it was worth! One computer could not serve a class effectively. The daily schedule improved because of the network.

5. Computer Enabled Direct Resources in the Room

Five teachers spoke on how being networked, and having five computers in each class helped with the "flow of the day" because it was easier to tap into resources. Whether it was for math lessons, WTR, WTW, or the use of encyclopedias through the computers - it was great having the computers at your service.

One teacher spoke how it was better than a set of encyclopedias because five students at one time could use the "T" book through computers, while the one volume of "T" could only be used by one student at a time.

6. Computers Allow for Immediate Feedback and Follow-up

Six teachers loved how the computers offered their students immediate feedback on their work. For example, in Math - the student did not have to wait until the teacher checked the work because the computer informs the student if the answer is correct or not. "Time is not wasted for that student!" Also the six teachers commented on how they used the computer for

follow up and enrichment activities to assist students. The computers are viewed as five additional teachers in the classroom.

7. Computers and the Attitudes from the Teachers

Without hesitation, delay, nor a bat of an eye, every teacher clearly stated they would choose the classroom with five computers vs. the classroom without computers. There was not a doubt in any of the teachers' mind of how beneficial computers are to the progress of their students and their teaching strategies. Computers will forever be an integral part of teaching at Beaverdam Elementary.

8. Helpful Strategies to Achieve a Comfort Level with Technology

"What was most helpful in getting to your current comfort level with technology?" Time was the common denominator that all teachers said helped. The faculty felt they had three years under their belt to know what worked best with computers in their classroom. Also, the fact that all teachers at Beaverdam Elementary received extensive training in the use of the computer and all the extensions it offered for your instruction. The pace for implementation of computers was achieved at the teacher's discretion. The teachers were supported by colleagues as well as an open-minded administration staff. As a faculty we were treated as professionals and were allowed to ease into the use of computers as we were ready.

Conclusion

We asked if the computers had any pitfalls, and if there were there any disadvantages? The majority of teachers could not conceive of any disadvantages in the classroom. One teacher

did not want the computers to completely take the teacher's job because a "warm living" body is needed to continue to interact with children. Another teacher wanted more - five is not enough! This same teacher also commented on the cost and expense of the network system. The computers we now own (only 3 years old) are most likely considered to be outdated.

So what did we find? First, did an enormous amount of technology have an impact on our teachers? Yes, it did, but not necessarily in the manner originally thought. Four teachers were terrified and upset initially on how to include computers into their daily schedules. Yet, another four teachers remarked how their schedules or classroom management immediately improved because of the computers. Second, do teachers think children are learning more through the use of computers? Yes, all teachers saw the positive influence computers had on the students' progress. The final question to our cooperative faculty was, "Did the networked computer effect a change in your teaching practices?" As you can imagine, the computers had affected all the teachers' practices, and yet, all the changes were for the positive. We only wish you could have seen their faces while they spoke these words:

"I now tell the students to go on a topic and tell me what you found rather than telling them what they need to find."

"We publish more stories."

"Not as much drill work because of CCC, we're able to focus on problem solving in math"

"More time for individuals."

"More small groups."

"I now let students explore on computers, let go and allow students to work on their own."

"I hope I never have to teach without computers again, they are such an asset!"

APPENDIX A

NETWORK AT BEAVERDAM ELEMENTARY SCHOOL

The use of computers in the classrooms has enabled technology-based instruction to become an integral part of the daily program at Beaverdam. During the summer of 1992, a school-wide computer network was installed at Beaverdam Elementary School. The Beaverdam network was established to serve as a model for other elementary schools in the county.

* Cabling was installed throughout the school, with each classroom having at least one drop. All classrooms are equipped with 5 IBM Model 25 or Model 30 computers that are connected to the network using a splitting device. Potentially, up to 8 computers can be connected at each drop. A multimedia workstation includes a high resolutions monitor, 160MB SCSI hard drive, 600MB CD-ROM II drive, a 16 bit Audio Capture and Playback Adapter/A, and an enhanced internal speaker.
* The network consists of a file server with a 486 processor, 16 MB of RAM, and a 2GB fixed disc drive. The file server is loaded with Novell Netware V3.11 (100 user license), EdLAN V1.10, IBM's Classroom LAN Administration System (1CLAS) V1.4 (100 user license).
* EDLAN provides teachers with the tools needed for classroom management. It includes a word processor, a spreadsheet, a database (Microsoft Works), a desktop publishing package (Express Publisher), a gradebook (Excelsior Grade), a quiz maker (Excelsior Quiz), a computer broadcast system (LANSchool), a multimedia development program (Linkway), ICLAS V1.4, and Netware V3.1. All networkable courseware is controlled by ICLAS.
* Most of the courseware for Beaverdam came from IBM's Teaching and Learning with Computers (TLC). TLC incorporates technology in the classroom while implementing whole language instruction and cooperative learning. The foundation of TLC at Beaverdam includes implementation of the Writing to Read Program at the EDGE I level. As a continuation of the Writing to Read Program, Writing to Write Form I is used in the second grade, and Writing to Write Form II is used in the third grade. Other courseware provides programs in the areas of math, reading, language arts, science, and keyboarding. All of the software works to reinforce objectives taught in the classrooms.
* Courseware by the Computer Curriculum Corporation (CCC) is also available through the network. CCC is used in all grade levels, but the major focus occurs in the fourth and fifth grades. CCC provides computer-monitored programs in a variety of areas. Teachers primarily use the reading (Reader's Workshop) and math (Math Concepts and Skills) programs.
* The network includes a CD-ROM server and a communication's server. The CD-ROM server includes 5 CD-ROM drives and Opti-Net 100 user license software. The Opti-Net software allows all workstations connected to the network to share networkable CD's. The CD's currently being used are Grolier's and World Book encyclopedias and National Geographic's Mammals and Presidents.
* The communication's server includes Digiboard's Digichannel PC COM 41. The PC COM 41 provides a series of multichannel COM boards allowing up to four communications lines. Modem Assist Plus, by Fresh Technologies, allows users on a Novell network to share async modems using PC COM 41.

* We have purchased a new and faster modem to enhance telecommunications capabilities.
* The Library Media Center includes 4 workstations and 2 printers. All workstations in the library and throughout the school have the ability to access the catalog and the library management software.
* We have installed wall-mounted video monitors with VCR's in 6 classrooms. These monitors allow computer screens to be displayed for whole class instruction, as well as the presentation of educational films and instructional video materials. We have installed wall mounts in all other classrooms with the goal of providing monitors for them.
* We have purchased a Color Scanner and a Still Video Camera.
* During the summer of 1992, teachers received two weeks of extensive training in the use of the computer system. Follow-up in-service by representatives of IBM and CCC was provided throughout the school year. New teachers and teachers changing assignments are offered training during the summer. Contact with IBM and CCC is now scheduled on an as needed basis, and further training is being coordinated through IBM at this time. The staff is extremely excited about the opportunities this new technology brings for motivating students and meeting their individual needs.
* In-service training is planned at this time for teachers in the use of Microsoft Works for word processing needs and classroom utilization.
* Our technology committee has developed a tentative list of software and CD"s to purchase, focusing on our needs in the following areas: upper level reading and math, science, and social studies.
* Teachers and classes also benefit from participation in the VAPEN system.

IS IT BETTER TO DRINK FROM A FOUNTAIN OR A SECRET WATERFALL?

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*The views expressed in MERC publications are those of individual authors and not necessarily those of the Consortium or its members.

INTRODUCTION

After studying a unit on moon phases, a hand went up in the back of my sixth period earth science class. "So that means that if I were to watch the earth from the moon as the moon revolved around it, the earth would have phases too?" Justin asked. What an intuitive question . . . what depth of thought . . . a teacher's dream! Justin was obviously a very bright student, therefore he must be highly successful academically, right? Wrong. He was one of 24 remedial students--about half of whom had been designated as special education students--in that sixth period class. Prior to asking his question, Justin's head was on his desk as he stared dreamily at a bulletin board full of pictures of other planets. He had recently been diagnosed as having an attention deficit problem. It was this same "problem" which allowed him to conceive that question. He mentally wandered through the solar system where his mind's eye looked back on earth. While the casual observer might have thought he was merely daydreaming, he was actually restructuring his view of the earth. If he was so creative in his thinking, could he really be very different from my honors students? This was the question I wanted to answer.

The concept for this paper came from one of my graduate classes where the professor and I had lively debates about the validity of ability grouping. Having taught since 1972 in both homogeneous and heterogeneous settings, I felt strongly that ability grouping had merit. However, that professor forced me to rethink my position. When the opportunity to do research in my own classroom presented itself, ability grouping loomed before me as a major concern. Was there really any difference between remedial students and honors students? If no, then what was the reason for ability grouping? If yes, was I addressing the differences appropriately?

The purpose of this paper is to determine if measurable differences exist between the two groups, not to validate or refute the practice of ability grouping.

BACKGROUND

Hermitage High School is located in suburban Henrico County just north of Richmond, Virginia. Its population of almost 1600 students is approximately 60% Caucasian, 35% African-American, and 5% other (mostly Asian). In the science department, only biology and earth science are divided into three levels: remedial, general, and honors. In both subjects, 11% of classes are taught at the remedial level, 11% at the honors level, and the rest are general. (There is one AP biology class which makes up another 6% of the biology curriculum.) Chemistry and physics are taught at the honors and college preparatory levels with approximately 20% of both courses offered at the Honors level. Applied Physical Science is offered as a science course for non-college bound students with 17% offered at the remedial level and the rest offered at the general level. Placement in each level is determined by standardized test scores, teacher recommendations, and parent approval.

The data above are provided to show that overall, around 80% of our students are *not* at either end of the academic spectrum. The majority of our students fall into that broad spectrum of "the average student" (whatever that truly is). When referring to my own honors and remedial students, the readershould understand that this study deals with only 20% of the students in the freshman class, not the majority.

How is the decision made for who teaches each level? Each year my department chair sends out a "wish list" to each teacher, asking preferences in teaching assignments. Whenever possible, she honors these requests. What this means is that I am teaching the honors and remedial students *at my own request*. Both groups of students offer challenges which serve to keep me sharp and constantly on my toes. In addition to the 2 classes each of honors and remedial science, I also teach one general class. All observations made herein are from my own classes which are being taught this academic year (1994-1995).

Are there similarities between attitudes of the remedial and honors student?

To determine this, a questionnaire was given to my students. It consisted of 20 open-ended questions which surveyed attitudes toward school, academics in general, parents' expectations, and the student's future. (See Appendix for complete survey.) In all, 108 students responded: 39 remedial, 46 honors, and 23 general students. Verbal instructions to all classes were to give the first answer which came to mind, not to "over think" the question nor provide what students felt was the correct answer (because there was no correct answer). It was reiterated that no name was required; identity of the individual was of no consequence. Attitudes toward the various subjects and complete honesty were all that were necessary.

NOTE: Please refer to "Survey Responses" in the Appendix. When reporting student responses, percentages may not add up to 100 because some answers were left blank. Also, percentages were rounded to the nearest whole number. Since honors and remedial students are the primary thrust of this paper, only their responses were reported.

What do all these numbers mean? Consider the general statements first. When looking at student expectations for their future, there is very little difference. The vast majority see success of some sort, college, and/or jobs--the traditional American dreams. Parents of both groups seem to encourage/expect good performance at school. Both groups feel it is important to do well in high school, dislike homework (though they agree it's a good idea to write it down), have a positive attitude toward their classes, and feel the same about being at school. All of these are attitudinal; they show how the student *thinks* things are or should be. In their hopes and aspirations, there seems to be little difference in remedial and honors students.

Now consider the performance questions and differences begin to appear. Though both groups preferred the social aspect during school, after school they

differentiate: honors preferred academic or athletic pursuits to social over 2 to 1. For remedial students, these numbers were reversed. When referring to favorite/least favorite subjects, no remedial students mentioned foreign languages or the performing arts while over 1/3 of honors did. Grades were another divided area where virtually all honors students placed themselves in the A to C category while only 40% of remedial students did. School related clubs were in greater favor by honors than remedial students; opinions on after school jobs were reversed. More honors students valued summer school as a way to get ahead, where more remedial students felt it was "stupid" or "boring." When preparing for tests, honors students spent more time in advance preparation (at least 1 night before); more remedial students preferred the "study hall" approach. The two areas of performance where students were in agreement were in school related sports (both groups felt very positively about them) and their favorite thing to do in school (socialize). All statements in this summary were based on what the students said in their surveys. They were all subject to the bias of their giving answers which the teacher wanted to read, or distortion within their own minds of how things seem. To determine if there were actual differences in performance, I then went to my grade book.

Are there similarities in attendance, test scores, and academic performance of remedial and honors students?

NOTE: Information reported in this section was based on the first three quarters of this academic year unless otherwise noted. (See "Student Statistics" in the Appendix.)

Attendance was better overall in the honors classes. For each quarter the average number of absences per remedial student was about triple that of the honors student. The average number of absences per student approximately doubled from first to third quarter for both groups. This increase could probably be attributed to the onset of cold and flu season for the honors students. It is probably not so great a factor

for the remedial students; during the same period the total number of absences due to suspension increased almost eight times from 7 to 54. Honors students had no absences due to suspension.

Standardized test scores showed a great disparity. Eighth grade Iowa Test of Basic Skills percentiles averaged at least four times higher for the honors student than for the remedial student. All freshmen in Henrico County take the Preliminary Scholastic Aptitude Test in the fall. The honors students' scores were an average of 2.5 times higher than remedial students on the verbal test . On the math test, honors scores averaged almost four times higher than remedial students. Were these variations truly differences in ability, differences in their attitude toward taking the tests, and/or differences in test taking skills? These would be good questions for future research.

Classroom performance also showed dissimilarities. In calculating the grade point average for science class only, honors students had an average GPA of 2.84 while remedial students had a 1.83 for first quarter. During second quarter, GPAs in both classes fell, honors to 2.72 and remedial to 1.35. Third quarter saw improvement for both, but neither reached their first quarter performance. (GPA was determined using a 4.0 scale. Weighted credit is usually given when determining honors GPAs. However the GPAs shown reflect the letter grade received on the report card and not the weighted credit.)

Homework production followed along comparable lines. The number of zeros received was at least two fold higher in remedial classes. For first quarter, the honors student had an average of 0.25 zeros to the remedial student's 3.9. Second quarter showed improvement for the honors student with an average of only 0.04 zeros; the remedial student received more (4.4). Third quarter showed a marked increase for both groups: honors had an average of 4.16 zeros while remedial students had an average of 7.4 zeros. Looking through my grade book, the increase in absences

discussed above seemed to have had an effect, as many of the zeros come from work not made up after absences. One other factor which had an effect on these homework statistics was the fact that the honors students know that minimal points were given if a paper was handed in with their name, class period, and date. This was recorded as a grade (albeit very small) and not a zero. The remedial students are now beginning to catch on to this though few take advantage of it. It did not seem to matter whether the homework was written or of the cut and paste variety, the amount completed by remedial students was still far less than the honors students. Trying to vary assignments, two cut and paste activities were given this past quarter. Only 54% of the remedial students but over 90% of the honors did them. On another day when we did a lab in the computer room which required the use of a drawing compass and a calculator, about half of the remedial students had the necessary supplies. Almost all of the honors students had them. (In all fairness, it must be reported that the honors students were required to have a compass and calculator for their geometry class.) In preparation for exams, I kept old tests for students and returned them just prior to exams. In order to get them all back, I "bribe" students with extra credit on the exam for each old test returned. Even with this incentive, the remedial students returned just over half as many tests as the honors students (4.02 to 7.37)--and the remedial students were offered twice as many points per test!

To answer the question posed at the beginning of this section, there definitely seemed to be major differences in attendance, test scores, and academic performance of the remedial and honors student. So what does this mean? Now that I have determined differences, how should they be addressed?

Implications of Findings

(Journal comments are in quotes with the date written in parentheses.)

As I wrote in my journal, many of my comments were actually questions about this very idea. (January 31) "What would be more meaningful--particularly to the weaker student?" (February 9) "Maybe I should work on the study habits and less on content." (February 13) "Is the difference the level of student or the teacher's approach/demeanor?" (February 20) "Am I making allowances [for remedial students weak skills] or shortchanging them?" (February 24) "What can I do to help them improve their study habits?" (March 1) "Am I encouraging (enabling) a lack of preparedness by not requiring a compass? Or am I just facing the reality that they tend to come to class unprepared? This is a two edged sword. Am I more interested in their developing a good work ethic of having their tools readily available or do I want them to learn the material and I provide the tools? To be honest, I really don't know which is my stronger belief. Being prepared will take them further in life..." (March 3) "I tried a modified Venn diagram for taking notes...By the time this simple activity of drawing 3 circles was done, almost 15 minutes were gone! In honors it took less than 3 minutes...Should I have xeroxed a copy of the diagram for the [remedial students] to save time? I think not... [T]hey'll need to be able to follow directions when they get a job. They'll need to reason out what they're doing and why. Though it was a *lot* more time consuming, it was probably worth the time." (March 6) (written after working in the computer lab) "The [remedial students] kept me hopping from one station to another. The honors allowed me to... have a free period. The [remedial students] seem to need constant reassurance that what they think is the right answer really is the right answer...Their demand for reassurance? attention? was incredible." (March 11) "What more can I do to encourage the [remedial students] to study and take good notes?" (March 28) (quote from a substitute regarding my sixth period remedial class)

"Maybe *any* change is too much for them." (March 31) "Why didn't they [remedial students] turn them [homework assignments] in when due?"

The differences sited in the statistics above and in my own journal observations suggest that the honors student fits the mold of traditional learning far better than the remedial student. The traditional classroom typically involves the teacher as the font of knowledge and the student as the vessel to be filled. The assumption is made that the only way the vessel *can* be filled is at the font. The remedial student does not go thirsty though he doesn't always come to the font for water; he often goes exploring in the woods and discovers a spring or waterfall that the traditional student never sees. This analogy may be a bit flowery, but in essence it is so true! Let me relate two experiences which exemplify this concept.

Recently, my classes were studying weathering and erosion. The fact that rain water is a mild natural acid which can dissolve certain types of rock, my sixth period remedial class found difficult to believe. I made the statement that even a hard egg shell could be dissolved by a common acid like vinegar. This was even harder to conceive. To prove my point, the next day I put a raw egg in a jar and poured vinegar over it. This stinky "eggsperiment" sat on the bookshelf for about four days. Students in all classes noted the changes in the egg as its shell gradually dissolved. Once the shell was gone, the now rubbery egg was placed in a bowl for the students to poke and feel. Sixth period had to pass the egg around the class for each student to get his/her own poke. They were so careful with it, making sure no one popped it. Their next request was to see what it was like when it burst open. I promised them that on the next day when their behavior was at its best, we would end the class by throwing the egg up in the air and watch it pop as it landed. Needless to say, behavior the next day was exemplary. As promised, we took the egg outside to the sidewalk. Marc, the orneriest student in class, was chosen to toss the egg. (It was at this point that the assistant principal appeared, looking for Marc!) Marc gently tossed the egg about two

feet above his head. The whole class was rapt with attention as the egg fell back down to splat on the sidewalk. Immediately the students crowded around the remains, noting that the yolk was not very runny but somewhat hard, that it smelled very strongly of vinegar, and so on. They picked up the rubbery remains of the shell and gently passed the pieces from one student to another as they made appropriate comments like "O-o-o-o gross!" As the bell rang and they moved on to their next class, they were still talking about what they had seen and done. Even the next day, they went back to the bowl to see how the shell remains had changed. (They had become stiff and papery.) Such a simple experiment held their attention for about a week.

The second experience once again involves Justin. Students were told to do a short presentation to the class on one of the agents of erosion. Justin's topic was glaciers. To show that glacial melt water acts like a river, he wanted to do a demonstration. I said "Of course." He said he needed some kind of flat surface where he could spread dirt out, then run water across it to show what happens. I remembered some stream tables that had not been used in years (too messy!) and told him to meet me before school the next morning with his bucket of dirt. The next day he was waiting for me when I arrived. We set up his demonstration with water gently running across it awaiting his presentation sixth period. Wanting to keep his set-up intact for his class, but also wanting to show stream dynamics to other classes, I found a bucket of sand which I poured onto another stream table. Each class came into the lab, saw Justin's demonstration then received an explanation on stream flow at the "sand box" (as it came to be known). Once students saw some of the dynamics involved, they were told to "build" a house near the river. (Rubber stoppers were used as houses.) Four students placed their houses at a time, then the stream began to flow. The house which stayed driest longest was declared the winner. Subsequently, the sand box has been used to show glacial features as well.

Both activities described above were serendipitous, completely unplanned by

me, and inspired by those non-traditional remedial students. All students--regardless of whether they were honors, general, or remedial--enjoyed the break from the traditional class routine. They have all asked for "more." Can this be the true difference between the honors and remedial student, their approach to learning? The honors students enjoyed the activities as much as the remedial students, but would probably have learned the material regardless of how it was presented. The remedial students may have learned some of the concepts in the traditional manner, but the activities really sparked their interest and desire to learn. What are the conditions, environmental factors, stimuli, approaches which work best with the remedial student? At present, I have no specific answer. However, these factors will be explored the rest of this teaching year and on into next year.

In looking back through their responses on the survey, another distinction was noticed in the groups: Remedial students consistently seem to like social situations and sports. Any teacher with experience probably knows these things intuitively but has probably not applied this knowledge consistently in the classroom setting. How can these be incorporated in teaching? Cooperative learning activities would be an obvious way to put learning in a social situation. This would also allow students the physical freedom to move purposefully around the room. However, cooperative learning, like any teaching strategy, should be used sparingly. It, too, can become routine and boring.

I now know that indeed there are differences in these two groups of students. As a teacher, I must now use this knowledge to the students' advantage. The drive to reach each child allows me to enjoy the contrasts. The challenge is to find the right combination of strategies to help all students find success. *Vive les differences!*

This purpose of this survey is to determine student attitudes. Complete the statements below with words or phrases which best state your feelings about the subject of the sentence. All questions relate to school in general--no particular class or subject.

Please put no name or identifying marks on your paper.

1. My favorite thing to do in school is _____.
2. My favorite thing to do after school is _____.
3. My favorite subject in school is _____ because _____ _____.
4. My *least* favorite subject in school is _____ because _____ _____.
5. Homework is _____.
6. The amount of homework I have to do is _____.
7. I feel that the classes I take are _____.
8. The grades I usually make are _____.
9. While in high school, I think it is most important to _____.
10. School-related activities like clubs and class councils are _____ _____.
11. School-related activities like sports are_____ _____.
12. I think that an after-school job is _____.
13. Summer school is _____.
14. I usually study for a test _____.
15. Writing down my homework _____.
16. With respect to school, my parents encourage me to _____ _____.
17. I think that my being at school _____.
18. When I graduate from high school _____.
19. Ten years from now, I will be _____.
20. When I am 40, I will be _____.

Survey Responses

Favorite thing to do in school	Honors	Remedial
acad/athl	39	36
social	57	49
neg.	4	5
no resp.	0	10

favorite after school	Honors	Remedial
acad/athl	54	28
social	20	49
solitary	24	24

Favorite Subjects	Honors	Remedial
core	50	59
PE	7	13
for.lang.	20	0
arts	17	0
other	7	24

Homework	Honors	Remedial
pos.att.	35	26
neg.att.	54	54
lots	46	39
little	15	28

Writing Down Homework	Honors	Remedial
pos.att.	67	59
neg. att.	28	28

Attitude Towards Classes	Honors	Remedial
pos.att.	47	47
challenging	22	0
hard	17	17

Grades	Honors	Remedial
A-B	57	10
good	20	0
B-C	11	31
C-D	0	10
D	0	13
F	0	15

While in high school	Honors	Remedial
positive	100	97
no response	0	3

Clubs	Honors	Remedial
pos.att.	74	46
neg.att.	17	36

Sports	Honors	Remedial
pos.att.	76	82
neg.att.	13	5

After School Jobs	Honors	Remedial
good	46	80
too much	39	10

Summer School	Honors	Remedial
pos.att.	35	23
neg.att.	41	59

Study for Tests	Honors	Remedial
always	7	3
2+ days	11	13
1 night	28	13
moderate	30	41
rarely	11	3

Parents Encourage...	Honors	Remedial
do well	91	89
no response	0	10

Being at School	Honors	Remedial
positive	58	58
negative	19	19

After High School	Honors	Remedial
college	91	54
jobs	4	28
other	4	5

10 Years Later	Honors	Remedial
jobs	59	39
college	15	3
sports	7	15
families	9	5
no resp	0	8

At age 40	Honors	Remedial
jobs	39	26
money	15	21
old	4	15
marriage	26	0
children	4	3

Student Statistics

Absences	Honors	Remedial
1st quarter	0.8	2.1
2nd quarter	1.4	4
3rd quarter	1.7	5.3

Suspension Days	Honors	Remedial
1st quarter	0	7
2nd quarter	0	23
3rd quarter	0	54

ITBS Scores	Honors	Remedial
reading comprehension	75.6	18.9
math	85	21.2
science	85.9	20

PSAT	Honors	Remedial
verbal	75.2	29.7
math	83.1	21.5

GPA in Science	Honors	Remedial
1st quarter	2.84	1.83
2nd quarter	2.72	1.35
3rd quarter	2.8	1.65

Zeroes on HW	Honors	Remedial
1st quarter	0.25	3.9
2nd quarter	0.04	4.4
3rd quarter	4.16	7.44

Old Tests Returned	Honors	Remedial
	7.37	4.02

HEY THAT'S ME: AN INVESTIGATION OF LEARNING STYLES

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April, 1995

*The views expressed in MERC publications are those of individual authors and not necessarily those of the Consortium or its members.

HEY, THATS ME!

by Linda Hamlin

There has been a researcher in me for a long time, probably since third grade when I exhausted the school and public libraries on information about the planets. In seventh grade, I turned my "research" efforts to an essay contest that yielded a cash prize and the opportunity to be a graduation speaker. Besides the obvious payoffs, I realized that I could find answers to some of my own "why" questions. By high school I was searching for *all* the reasons why the Civil War took place and why some teenagers became juvenile delinquents. In undergraduate school I was fascinated by the researchers and the research available in human nutrition and disease. I was astonished by the information available that was not common knowledge! This prompted my own research projects and ideas. That has evolved to my current interest in brain research and human behavior. These 27 years of teaching and parenting have given me a wonderful opportunity to observe, ponder, learn, compare, reflect, predict, wonder, change and implement. Therefore, when the opportunity to join MERC as a Teacher-Researcher was offered in the fall of 1994, I knew this was for me. I saw it as a chance to learn from and work with other inquiring minds.

I already knew which class would benefit most from my efforts. I also knew that my time this year was the enemy and that the plan and process needed to be clear, simple and useful. Therefore, the readable format of Fairafax County's Classroom Research on Students in the Middle was very appealing to me.

The Setting

This afternoon elective class has brought new meaning to the word *challenge* ! There are 29 of them now; one transferred out recently to an alternative school setting and another just arrived from another school system where the student had truancy and run-away problems. Three others have terrible tempers that have erupted several times during this class. One of them asked me if I thought he/she had a conscience. The parents of this young person openly cried when I reassured them I would never give up on him/her as long as he/she was in my class (They felt everyone else, including them, had given up.) Nine have been assigned to ASPP (Alternative School Placement Program) two or more times this year. Their offenses included disrespectful and disruptive behavior, smoking and skipping class. One student has a phobia of school. Three take medication for clinical depression and

another is being treated for bi-polar illness. One attends Alcoholics Anonymous; another is in therapy for sexual abuse. Two have illegal-drug reputations that precede them. Three others have indications of possible drug involvement. Another has the most serious attention-focusing problems that I have ever observed, but is the best speller in the class and has extraordinary graphic art talent. Four students are very shy; for two it may be due to language and cultural differences. Only four of the 29 have documented learning disabilities; one has 20/200 vision which requires obvious accomodations.

All 29 students are attractive, bright and gregarious. Nine are regularly on the honor roll, one of whom will receive the Outstanding Student award from my department at graduation from approximately 200 students. Five of the 29 aspire to own/operate their own businesses by the age of 35 and 52% expect to be in college six months after graduation. All of these students live in middle to upper class neighborhoods within four and a half miles of the school. The majority drive to school and also have a part-time job. Most are very social and prefer to talk while others are talking. Several vie for the position of "the loudest". Any meaningful class discussion requires special strategies and great patience. It came as a pleasant surprise that my four learning disablitity students have some of the best listening skills in this class. For several others listening is a major problem -- not comprehension. Therefore, I have assumed that the majority of my teaching techniques should be visual. I have made a signifigant effort to find and employ additional visuals. Their favorites seem to be compiling survey results on the board with colored chalk, using large newsprint sheets and colored markers to brainstorm and record in small groups, and using colored pens and graphic organizers with the overhead projector. I thought that they would like demonstrations, but attention-span problems were obvious. I really wanted to know how they preferred to learn: visual or auditory?

Research Questions

1. Is there a dominant learning style that works best for the majority of students in this diverse class?

2. Do the majority of students at this school in 1994/1995 respond best to a visual approach to education, regardless of their class placement or lifestyle choices?

The Survey

After reviewing inventories from four publishers, I decided to use the *ASPIRE* Surveys on Learning Style Preferences and Left/Right Brain Indicators that were distributed through Staff Development, Henrico County Public Schools. It is a simple checklist that

takes ten minutes or less for a student to complete. Surveys were anonymous. An additional survey with open-ended responses was prepared by the teacher to learn about attitudes, preferences and other factors that might influence learning. *(See Appendix)*

Background Research

-------> To be entered.....

Findings

In an attempt to quickly assemble some additional teaching strategies to get us to June 14th, I gave the *ASPIRE* Surveys to 22 students during the first week of the second semester. Of those surveyed, there were eight males and fourteen females; eleven seniors, six juniors, and five sophomores. Refer to Appendices, pages 3 and 4.

ASPIRE Left Brain / Right Brain Survey

> 137 preferences for Left Brain activities were checked
> 168 preferences for Right Brain activities were checked
> 13 students (59%) preferred Right Brain activities
> 4 students (18%) preferred Left Brain activities
> 5 students (23%) preferred Left Brain and Right Brain activities equally

ASPIRE Auditory/Visual Learner Survey

> 10 students (50%) preferred visual learning
> 6 students (30%) preferred auditory learning
> 4 students (20%) preferred visual and auditory learning styles equally

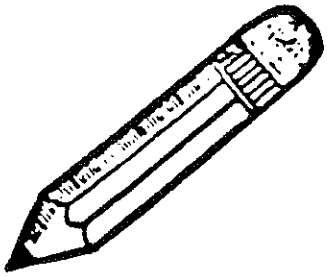
Of the ten who chose visual learning and the six who chose auditory learning, six were within one response of a tie. When I combine those six and the four who whose equal numbers of visual and auditory, I have 50% indicating a strong preference for both. Experts on learning styles suggest a combination of auditory and visual along with a "touch and do" (kinesthetic or tactile) approach. The student learns best by including as many senses as possible in the activities.

When the same checklists were given to the comparison groups of Advanced Placement Latin and Government students, again, the majority chose visual learning preferences over auditory. They also preferred Right Brain activities over Left Brain activities. When the same checklist was given to comparison groups in the Special Education classes, again, the majority chose visual learning preferences over auditory. They, too, preferred Right Brain activities over Left Brain activities.

Appendix

Table of Contents

PROJECT TEAM _____ ASPIRE



HEY, THAT'S ME!

Directions: Put a check beside each item that you feel is true about yourself.

This sounds like me!

___1. I would rather give an oral report than draw a picture or color.

___2. I don't like silent filmstrips, pantomimes, or charades, but can do my homework with the radio on.

___3. I'd rather do a music activity than art; and I'd rather listen to a tape than look at a filmstrip.

___4. In writing, I sometimes leave out words, or sometimes get words or letters backwards.

___5. I can spell better out loud on spelling bees than when I have to write it down on tests.

___6. I remember things you talk about in class much better than stuff you have to read.

___7. I like games with a lot of action or noise better than most other board games.

___8. I understand better when you read aloud, even during silent reading I like to hear it.

___9. I sometimes mess up in math because I don't notice the sign or because I read the numbers or directions wrong.

___10. Flashcard drills are hard for me and ditto sheets are tough.

___11. "Matching" test questions, where I have to draw lines to the right answer, or I have to fill in the letters in order, are a real problem.

___12. Map activities are just not my "thing" – I never can seem to remember what continent China is on, or if Iowa is north, east, south or west.

+_____ A

This looks like me!

___ 1. I like working with maps and art, but not music or listening to stories.

___ 2. I'm always having to ask somebody to repeat what he just said and forget what they tell me.

___3. I often know what I want to say, but I just can't think of the word.

___4. I like to have a map or have visual clues like landmarks to follow rather than someone tell me how to get there.

___5. It's usually easier for me to look and see what everybody else is doing than to try to get the teacher to repeat the instructions.

____6. I'm good at taking tests, but don't answer questions well aloud in class.

____7. I'd rather demonstrate how to do something than make a speech.

____8. It helps me to see the teacher's lips when she's talking.

____9. Sometimes words that sound almost alike (like *bill* and *bell* or *pin* and *pen*) give me a lot of trouble. I can't tell them apart.

___10. I like board games better than trivial pursuit or riddles.

___11. I have to go over most of the alphabet to remember whether "M" comes before or after "R", and so forth.

___12. I can do lots of things that are hard to explain with words - like fixing a bike or doing macrame.

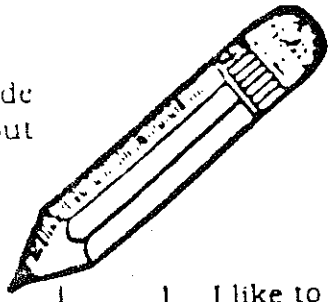
+_____ V

I like learning materials using my _____. I am a _____ learner.

PROJECT TEAM ASPIRE

HEY THAT'S ME!

Directions: Put a check mark beside each item that you feel is true about yourself.



___ 1. I am good at memorizing and remembering names, facts and details.

___ 2. I like science and math.

___ 3. I wear a watch and keep track of time.

___ 4. I like to have directions numbered and in order.

___ 5. I like things around me neat and organized.

___ 6. I'm usually good at spelling, reading and handwriting.

___ 7. I like to finish one task before I move on to the next.

___ 8. I like to do multiple choice and true false tests.

___ 9. I like to read nonfiction.

___ 10. I'm usually good at vocabulary.

___ 11. I like to use diagrams and charts.

___ 12. I don't like surprises.

+ _____ L

___ 1. I like to do lots of things at once.

___ 2. I like to draw and color and can see things my mind.

___ 3. I want the whole picture or word.

___ 4. I can think of funny stories and like to dream.

___ 5. I tell people how I feel and can tell when others are happy or sad.

___ 6. I like essay tests.

___ 7. I don't care about time and timed tests are hard for me.

___ 8. I like plays, music, and fiction.

___ 9. I have a great imagination and I'm creative.

___ 10. I like to change and keep lots of things going.

___ 11. I don't notice clutter or if everything is neat.

___ 12. I'll take a chance and try something new.

+ _____ R

I use my _____ brain most often

Focus Group: Independent Living, 6th period
Total Respondents: 20
Survey Administered: *ASPIRE* Auditory/Visual Learner Identification Survey

Category: Auditory

Statement	Responses	Percentage
I remember things you talk about in class much better than stuff you have to read.	16	80%
I like games with a lot of action or noise better than most board games.	16	80%
I don't like silent filmstrips, pantomimes, or charades, butcan do my homework with the radio on.	14	70%
I understand better when you read aloud, even during silent reading I like to hear it.	14	70%
In writing, I sometimes leave out words, or sometimes get words or letters backwards.	12	60%
I sometimes mess up in math because I don't notice the sign or because I read the numbers or directions wrong.	11	55%
I'd rather do a music activity than art; and I'd rather listen to a tape than look at a filmstrip.	9	45%
Map activities are just not my "thing" - I never can seem to remember what continent China is on, or if Iowa is north, south, east or west.	4	20%
I can spell better out loud on spelling bees than when I have to write it down on tests.	2	10%
"Matching" test questions, where I have to draw lines to the right answer, or I have to fill in the letters in order, are a real problem.	2	10%
I would rather give an oral report than draw a picture or color.	1	5%
Flashcard drills are hard for me and ditto sheets are tough.	1	5%
	---	
	102 Total Responses	

Focus Group: Independent Living, 6th period
Total Respondents: 20
Survey Administered: *ASPIRE* Auditory/Visual Learner Identification Survey

Category: Visual

Statement	Responses	Percentage
It's usually easier for me to look and see what everybody else is doing than to try to get the teacher to repeat the instructions.	18	90%
I'd rather demostrate how to do something than make a speech.	14	70%
I'm always having to ask somebody to repeat what he just said and forget what they tell me.	13	65%
I like to have a map or have visual clues like landmarks to follow rather than someone tell me how to get there.	13	65%
I often know what I want to say, but I just can't think of the word.	11	55%
I can do lots of things that are hard to explain with words - like fixing a bike or doing macrame.	10	50%
I have to go over most of the alphabet to remember whether "M" comes before or after "R", and so forth.	9	45%
I'm good at taking tests, but don't answer questions well aloud in class.	8	40%
I like board games better than trivial pursuit or riddles.	7	35%
Sometimes words that sound alike (like bill and bell or pin and pen) give me a lot of trouble. I can't tell them apart.	4	20%
It helps me to see the teacher's lips when she's talking.	3	15%
I like working with maps and art, but not music or listening to stories.	3	15%
	113 Total Responses	

Focus Group: Independent Living, 6th period
Total Respondents: 22
Survey Administered: *ASPIRE* Left Brain/Right Brain Identification Survey

Category: Left Brain Characteristics

Statement	Responses	Percentage
I like to do multiple choice and true flase tests.	19	86%
I like things around me neat and organized.	18	82%
I am good at memorizing and remembering names, faces and details.	15	68%
I wear a watch and keep track of time.	14	64%
I like to have directions numbered and in order.	14	64%
I'm usually good at vocabulary.	13	59%
I like to finish one task before I move on to the next.	11	50%
I'm usually good at spelling, reading and handwriting.	10	45%
I like to use diagrams and charts.	9	41%
I don't like suprises.	6	27%
I like to read nonfiction.	5	23%
I like science and math.	3	14%
	137 Total Responses	

Focus Group: Independent Living, 6th period
Total Respondents: 22
Survey Administered: *ASPIRE* Left Brain/Right Brain Identification Survey

Category: Right Brain Characteristics

Statement	Responses	Percentage
I like to draw and color and can see things in my mind.	19	86%
I can think of funny stories and like to dream.	18	82%
I tell people how I feel and can tell when others are happy or sad.	18	82%
I have a great imagination and I'm creative.	18	82%
I'll take a chance and try something new.	18	82%
I want the whole picture or word.	16	73%
I like plays, music and fiction.	15	68%
I like to change and keep lots of things going.	15	68%
I don't care about time, and timed tests are hard for me.	9	41%
I like to do lots of things at once.	9	41%
I don't notice clutter or if everything is neat.	7	32%
I like essay tests.	6	27%
	162 Total Responses	

Comparison Group: Special Education Students, PM CLASSES
Total Respondents: 17
Survey Administered: *ASPIRE* Auditory/Visual Learner Identification Survey

Category: Auditory

Statement	Responses	Percentage
I remember things you talk about in class much better than stuff you have to read.	16	94%
I understand better when you read aloud, even during silent reading I like to hear it.	14	82%
I like games with a lot of action or noise better than most other board games.	13	76%
I sometimes mess up in math because I don't notice the sign or because I read the numbers or directions wrong.	12	71%
I don't like silent filmstrips, pantomines, or charades, but can do my homework with the radio on.	11	65%
I'd rather do a music activity than art; and I'd rather listen to a tape than look at a filmstrip.	10	59%
In writing, I sometimes leave out words, or sometimes get words or letters backwards.	10	59%
Map activities are just not my "thing" - I never can seem to remember what continent China is on, or if Iowa is north, east, south or west.	6	35%
Flashcard drills are hard for me and ditto sheets are tough.	4	24%
I would rather give an oral report than draw a picture or color.	3	18%
I can spell better out loud on spelling bees than when I have to write it down on tests.	3	18%
"Matching" test questions, where I have to draw lines to the right answer, or I have to fill in the letters in order, are a real problem.	3	18%
	---	
	105 Total Responses	

Comparison Group: Special Education Students, PM CLASSES
Total Respondents: 17
Survey Administered: *ASPIRE* Auditory/Visual Learner Identification Survey

Category: Visual

Statement	Responses	Percentage
I'd rather demonstrate how to do something than make a speech.	15	88%
I have to go over most of the alphabet to remember whether "M" comes before or after "R", and so forth.	11	65%
It's usually easier for me to look and see what everybody else is doing than to try to get the teacher to repeat the instructions.	11	65%
I can do lots of things that are hard to explain with words - like fixing a bike or doing macrame.	9	53%
I often know what I want to say, but I just can't think of the word.	9	53%
I'm always having to ask somebody to repeat what he just said and forget what they tell me.	8	47%
I have to have a map or have visual clues like landmarks to follow rather than someone tell me how to get there.	8	47%
I like board games better than trivial pursuit or riddles.	7	41%
I'm good at taking tests, but don't answer questions well aloud in class.	4	24%
It helps me to see the teacher's lips when she's talking.	3	18%
Sometimes words that sound almost alike (like bell and bill or pin and pen) give me a lot of trouble. I can't tell them apart.	3	18%
I like working with maps and art, but not music or listening to stories.	1	6%
	89 Total Responses	

Comparison Group: Special Education Students, PM CLASSES
Total Respondents: 14
Survey Administered: *ASPIRE* Left Brain/Right Brain Identification Survey

Category: Left Brain Characteristics

Statement	Responses	Percentage
I like to do multiple choice and true false tests.	14	100%
I like to read nonfiction.	9	64%
I'm usually good at vocabulary.	9	64%
I wear a watch and keep track of time.	8	57%
I like to finish one task before I move on to the next.	8	57%
I like things around me neat and organized.	7	50%
I like to have directions numbered and in order.	6	43%
I like science and math.	5	36%
I like to use diagrams and charts.	5	36%
I'm usually good at spelling, reading and handwriting.	5	36%
I am good at memorizing and remembering names, facts and details.	4	29%
I don't like surprises.	4	29%
	84 Total Responses	

Comparison Group: Special Education Students, PM CLASSES
Total Respondents: 14
Survey Administered: *ASPIRE* Left Brain/Right Brain Identification Survey

Category: Right Brain Characteristics

Statement	Responses	Percentage
I can think of funny stories and like to dream.	13	93%
I have a great imagination and I'm creative.	13	93%
I like to draw and color and can see things in my mind.	12	86%
I tell people how I feel and can tell when others are happy or sad.	11	79%
I like plays, music, and fiction.	11	79%
I'll take a chance and try something new.	11	79%
I like to do lots of things at once.	9	64%
I want the whole picture or word.	9	64%
I don't care about time and timed tests are hard for me.	8	57%
I like to change and keep lots of things going.	6	43%
I don't notice clutter or if everything is neat.	5	36%
I like essay tests.	3	21%
	111 Total Responses	

Comparison Group: Advanced Placement Latin & Government Students
Total Respondents: 26
Survey Administered: *ASPIRE* Auditory/Visual Learner Identification Survey

Category: Auditory

Statement	Responses	Percentage
I remember things you talk about in class much better than stuff you have to read.	17	65
I like games with a lot of action or noise better than most board games.	17	65%
I would rather give an oral report than draw a picture or color.	12	46%
I don't like silent filmstrips, pantomimes, or charades, but can do my homework with the radio on.	12	46%
I'd rather do a music activity than art; and I'd rather listen to a tape than look at a filmstrip.	10	38%
I sometimes mess up in math because I don't notice the sign or because I read the numbers or directions wrong.	10	38%
I understand better when you read aloud, even during silent reading I like to hear it.	9	35%
In writing, I sometimes leave out words, or sometimes get words or letters backwards.	5	19%
I can spell better out loud on spelling bees than when I have to write it down on tests.	2	8%
"Matching" test questions, where I have to draw lines to the right answer, or I have to fill in the letters in order, are a real problem.	1	4%
Map activities are just not my "thing" - I never can seem to remember what continent China is on, or if Iowa is north, south, east or west.	1	4%
Flashcard drills are hard for me and ditto sheets are tough.	0	0%
	96 Total Responses	

Comparison Group: Advanced Placement Latin & Government Students
Total Respondents: 26
Survey Administered: *ASPIRE* Auditory/Visual Learner Identification Survey

Category: Visual

Statement	Responses	Percentage
I like to have a map or have visual clues like landmarks to follow rather than someone tell me how to get there.	19	73%
It's usually easier for me to look and see what everybody else is doing than to try to get the teacher to repeat the instructions.	17	65%
I'd rather demonstrate how to do something than make a speech.	16	62%
I often know what i want to say, but i just can't think of the word.	13	50%
I can do lots of things that are hard to explain with words - like fixing a bike or doing macrame.	12	46%
I have to go over most of the alphabet to remember whether "M" comes before or after "R", and so forth.	11	42%
I'm always having to ask somebody to repeat what he just said and forget what they tell me.	10	38%
I like board games better than trivial pursuit.	6	23%
I like working with maps and art, but not music or listening to stories.	4	15%
I'm good at taking tests, but don't answer questions well aloud in class.	4	15%
It helps me to see the teacher's lips when she's talking.	3	12%
Sometimes words that almost sound alike (like bill and bell or pin and pen) give me a lot of trouble. I can't tell them apart.	0	0%
	---	
	113 Total Responses	

Comparison Group: Advanced Placement Latin & Government Students
Total Respondents: 30
Survey Administered: *ASPIRE* Left Brain/Right Brain Identification Survey

Category: Left Brain Characteristics

Statement	Responses	Percentage
I am good at memorizing and remembering names, facts and details.	21	70%
I like to do multiple choice and true-false tests	19	63%
I like things around me neat and organized.	16	53%
I'm usually good at spelling, reading and handwriting.	16	53%
I like to use diagrams and charts.	16	53%
I like to have directions numbered and in order.	15	50%
I like to finish one task before I move on to the next.	15	50%
I wear a watch and keep track of time.	13	43%
I'm usually good at vocabulary.	13	43%
I like science and math.	11	37%
I like to read nonfiction.	6	20%
I don't like surprises.	5	17%
	166 Total Responses	

Comparison Group: Advanced Placement Latin & Government Students
Total Respondents: 30
Survey Administered: *ASPIRE* Left Brain/Right Brain Identification Survey

Category: Right Brain Characteristics

Statement	Responses	Percentage
I like plays, music and fiction.	25	83%
I'll take a chance and try something new.	22	73%
I tell people how I feel and can tell when others are happy or sad.	21	70%
I can think of funny stories and like to dream.	19	63%
I have a great imagination and I'm creative.	18	60%
I like to draw and color and can see things in my mind.	16	53%
I like to change and keep lots of things going.	16	53%
I like to do lots of things at once.	15	50%
I want the whole picture or word.	15	50%
I don't notice clutter or if everything is neat.	13	43%
I don't care about time, and timed tests are hard for me.	10	33%
I like essay tests.	9	30%
	199 Total Responses	

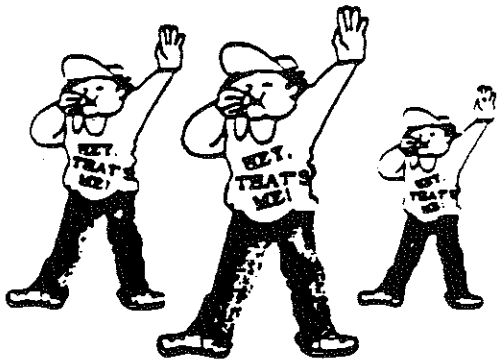
Open Response Survey or Interview

Complete the following sentences:

1. The thing that interests me most is.....
2. I always have fun when.....
3. I really get upset when.....
4. The thing that worries me is that.....
5. I would like to see.....
6. I am afraid to.....
7. I am the happiest when.....
8. I would rather.....
9. I would like for my teacher to know that.....
10. One thing that really "bugs" me about school is.....
11. I like school when.....
12. I don't like school when.....
13. For me, high school is.....
14. In this class, my favorite days are.....
15. I think I learn best when.....
16. I get my best grades when.....
17. Grades are.....

PROJECT TEAM — ASPIRE

HEY, THAT'S ME"!



DIRECTIONS FOR USING "HEY, THAT'S ME!"

If your **List A** score is very much higher than your **List V** score, it gives us hints that you probably learn best with your ears. Therefore, we call you an auditory learner.

If your **List V** score is very much higher than your **List A** score, you probably learn best with your eyes. Your eyes will be your best keys to learning and so we call you a visual learner.

If both scores are pretty close to one another, you probably learn best by a combination of auditory and visual along with a "touch and do" approach. You learn best by including as many senses as possible in the activity.

If your **List L** score is very much higher than your **List R** score, you use your left brain a lot. This means that you like things in order and neat, you probably do well in vocabulary, math and science.

If your **List R** score is very much higher than your **List L**; you use your right brain. This means you like music, art. You like to dream, have a great imagination, and know about people.

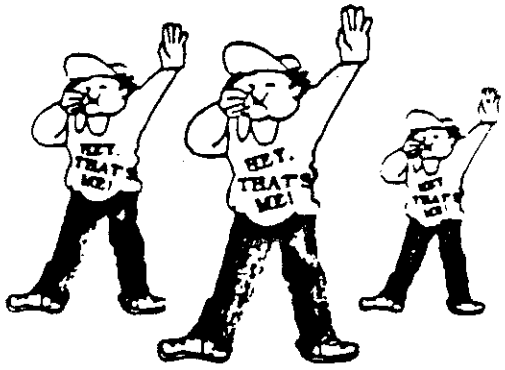
Remember either learning style is good as long as you are learning. Be aware of the things you need to do to make the most of your style.

Visual learners:
- Watch the teacher.
- Take good notes.
- Write down HW assignments.
- Use colored pens when taking notes.

Auditory:
- Listen carefully.
- Avoid making distracting noises.
- Ask to have material repeated if unsure of it.
- Ask questions.

HEY, THAT'S ME"!

This student self assessment is designed to assist teachers and students to know more about the students' learning styles. The inventory is a quick check of auditory/visual and left/right learning styles. It is written for children as a self assessment. The inventory may be administered to an entire class, small group or individual in 15 minutes. The inventory can, also, be administered orally.



DIRECTIONS FOR USING "HEY, THAT'S ME!"

1. Explain to your students that you want them to help you find out some things about how they learn. You might say, "Here are four lists. Look them over, and check the things that seem to describe you best."

2. After students have completed the lists, have them count up the checkmarks on each and record this score at the bottom.

3 Tell students to look at their scores and see which is higher. Explain the following to them:

If your **List A** score is very much higher than your **List V** score, it gives us hints that you probably learn best with your ears. Therefore, we call you an auditory learner.

If your **List V** score is very much higher than your **List A** score, you probably learn best with your eyes. Your eyes will be your best keys to learning and so we call you a visual learner.

If both scores are pretty close to one another, you probably learn best by a combination of auditory and visual along with a "touch and do" approach. You learn best by including as many senses as possible in the activity.

If your **List L** score is very much higher than your **List R** score, you use your left brain a lot. This means that you like things in order and neat. you probably do well in vocabulary, math and science.

If your **List R** score is very much higher than your **List L**; you use your right brain. This means you like music, art. You like to dream, have a great imagination, and know about people.

4. After helping the students interpret their scores, get them to help you relate this to the teaching/learning situation in your classroom. The students can help you decide what alternative teaching approaches you might try.

Auditory Learners

If you are an auditory learner, the following study tips may be helpful:

Tape record classroom lectures and class notes. Summarizing is especially helpful.

When preparing for a test, tape record review sheets and important notes and listen to the tape 2 to 3 times.

Write vocabulary words on index cards with definitions on the back. Review them by reading words aloud, repeating the definition and then checking to see if you are correct.

Verbalize things you want to remember such as dates, key terms, quotes and important events.

Ask your teacher if you can turn in a tape or give an oral report instead of a written report.

Use a highlighter for main ideas and important facts in your textbook or notes.

Read aloud whenever possible.

Study with a friend so you can discuss and hear the information. If you can verbalize the information, you increase the probability of understanding it. Have your friend ask you questions and vice versa. Verbally review facts and terms which must be memorized.

Preview a chapter before reading it by looking at the titles, introduction, subtopics, key terms and conclusion/summary. This increases your ability to maintain your focus while reading the chapter because you have a familiarity with the information.

Visual Learners

If you are a visual learner, the following study tips may be helpful:

Write things down. Take notes in class to help you remember things better and to use in studying for tests. Compare your notes with those of a friend who is a good note-taker.

Write science and social studies vocabulary words on an index card with the definitions on the back.

Ask your teacher to repeat something when you don't understand it.

Use a highlighter for main ideas and important facts in your textbook or notes.

Preview a chapter before reading it by looking at the titles, introduction, subtopics, key terms and conclusion/summary.

Pay attention to graphs, pictures and charts.

Learning from a lecture is not easy for visual learners. When listening to a lecture, always look at the speaker to help you maintain your attention. Summarize important concepts but don't try to write verbatim what they are saying.

Sit close to the front of the room and away from distractions such as your close friends, doors or windows.

It is better to study alone rather than with a friend.

Study in a quiet place with no interruptions. If you need to have music, make it soft, background music that will not be distracting.

Practice visualizing or picturing important information. Use flashcards to help you isolate and mentally "see" facts and their chronological or sequential order.

Tactile Learners

If you are a tactile learner, the following study tips may be helpful:

While in class, experiment with ways of moving without disturbing the class; for example, cross your legs and bounce your foot that is off the floor, roll a pencil between your fingers, squeeze a large rubber eraser or doodle on a piece of paper.

Write vocabulary words or terms on an index card and walk around while reviewing or reciting them.

Take frequent notes and write important facts several times while studying.

Try to act out words or events with simple gestures which will aid your recall such as smiling at the word "amiable" or making a tight fist for the word "penurious" or "miserly."

Whenever possible, use graphic note-taking methods such as mapping, concept trees or time lines.

Use a highlighter for main ideas and important facts in your textbook or notes.

Try studying in different positions; for example, lying on your back or stomach, and change positions frequently.

Take frequent, short breaks and do something that involves light activity such as getting a drink of water.

Try writing key terms in the air or with your finger on a smooth surface or in the carpet.

Study with background music that isn't too distracting.

Whenever possible, experiment and "do" your assignments, experiments and projects in an active way. For example, make drawings of key events.

Learning Styles

Not everyone learns in the same way. Most learners have a preferred learning style. A person's learning style is simply the way in which he or she learns best. No one way of learning is necessarily better than another – it is simply different.

Your learning style involves how you use your senses. While most people use all of their senses as they learn, most of us seem to learn best through one particular sense. Most educators and learning theorists agree that there are three primary perceptual preferences, or learning styles, for most learners.

AUDITORY LEARNERS learn best by hearing or listening. They prefer talking about a situation; express emotions verbally; enjoy listening, but cannot wait to talk; like hearing self and others talk; learn best through verbal instruction; move lips or subvocalize when reading; remember auditory repetition; study well with a friend to discuss material.

VISUAL LEARNERS learn best by seeing. They prefer watching demonstrations; have intense concentration and ability to visually integrate information; remember faces but forget names; write down things and take detailed notes; doodle; find things to watch; look around and study their environment; facial expression is a good indication of emotions; quiet – do not talk at length; become impatient when extensive listening is involved; learn best by studying alone.

TACTILE LEARNERS learn best by doing. They need direct involvement; fidget when reading and are not avid readers; remember best what is done, not what is seen or heard; images are accompanied by movement; easily distracted when not able to move; find reasons to move; express emotions physically by jumping and gesturing; do not listen well; try things out by touching, feeling and manipulating; need frequent breaks when studying.

Different situations and types of information are learned best in different ways, but it is important to be aware of your preferred learning style to make optimal use of learning time.

THE ESSENTIALS TESTS FOR LATIN II FOR THE COUNTY OF HENRICO

"Do the Essentials Tests accurately measure student performance and what are teacher perceptions of the Essentials Tests?"

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April, 1995

*The views expressed in MERC publications are those of individual authors and not necessarily those of the Consortium or its members.

"Are the Essentials Tests accurate instruments of classroom learning ?"

Each spring when trees once again begin to dress themselves in verdant foliage, when the boys of summer hone their skills in minor league parks in Florida, when students are attempting to will the days to fly by all the more quickly, the County of Henrico mandates its teachers to administer the Essential Tests. The Essentials are a series of tests which are intended to evaluate instructional programs and verify that stated instructional priorities have been met according to the Essentials of the Curriculum for the County of Henrico. Teachers are to administer the tests under draconian conditions. Tests are divided into two sections to be given on consecutive days, fifty minutes per section, students are not allowed to ask any questions, at the end of the allotted time tests are to be retrieved promptly. Department heads, like Cerberus, guard these papers with almost psychotic paranoia lest the teachers see and soil the integrity of the essentials.

Research Questions

The purpose of this paper is tripartite; do the Essentials Tests accurately reflect classroom learning , what is the relationship between classroom instruction and performance on the Essentials Tests, what are teacher perceptions concerning the Essentials Tests ?

To determine the validity of the Essentials Tests, two sets of data will be compared. Essentials Tests scores will be compared to year end classroom grades and Essentials Tests scores will be compared to verbal PSAT scores. If the tests are valid one would expect to find a strong correspondence between Essentials Tests scores and classroom grades and a moderate correspondence between Essentials Tests scores and verbal PSATs.

To determine if relationship exists between performance on the Essentials Tests and classroom instruction, surveys have been sent out to the individual teachers to elicit information about content area emphasis, teaching methodologies, and methods of evaluation. Do teachers whose students perform well on the Essentials Tests have common classroom strategies ? Do these teachers emphasize similar areas ? Do they evaluate students with similar testing methods ?

To determine if there is a relationship between teacher perceptions and attitudes about the Essential Tests and student performance on the tests, surveys with both response format and open ended questions have been sent to teachers who participated in the Latin II Essential Tests for 1994. Is there a relationship between the two elements ? Is there no relationship between the two elements ? How do teachers feel about these tests and why ?

General Validity of Essential Tests

Both year end classroom grades and verbal PSAT scores were compared to the Essential Tests scores using the Pearson Correlation Coefficient Method. The correlation between the two scores can fall between a -1 (which means there is an absolute inverse relationship), 0 (which indicates there is no relationship) , and a + 1 (which means that there is an absolute positive relationship). As a general guideline, a correlation of .8 or better is "high", a correlation of .5 is "moderate", and a correlation of .3 is "low". [1]

In figure 1, the relationship between the average of year end classroom scores for all students and the Essentials Tests was 0.62806. According to general guidelines, that is a moderately high relationship, and gives substance to the belief that the student who does well in a classroom situation will also do well on the Essentials Tests. This in turn gives credibility to the belief that the Essential Tests are indeed an accurate instrument for measuring achievement in the subject area.

figure 1

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 193

	CRSGRADE
	0.62806
	0.0001

In figure 2, the relationship between the verbal PSAT scores for all students and the Essential Tests score was 0.60425. While not as high as the correlation between classroom grades and Essential Tests scores, still the correlation is moderately high.

figure 2

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 158

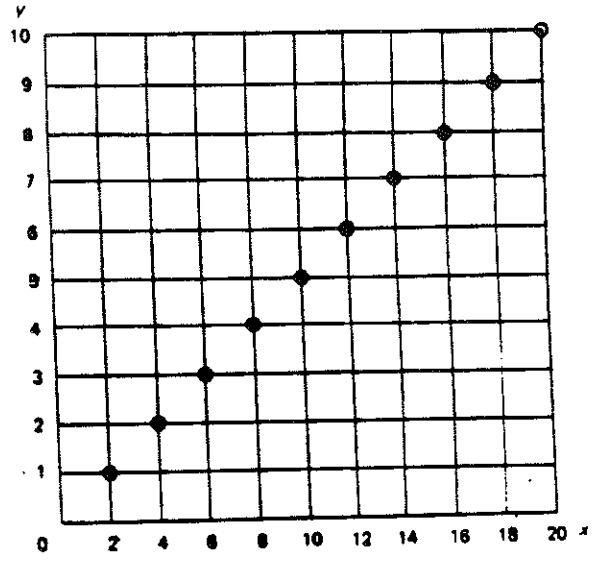
	VERBAL
TOTALPCT	0.60425
	0.0001

This data reinforces the validity of the Essentials Tests because one would expect to find a higher correlation between classroom grades and the Essentials Tests because like material is being evaluated. What is supposed to be taught in the classroom, according to the county standards of learning, is the same material being tested. While the relationship between the verbal PSAT scores and the Essentials Tests might have more to do with the type of student taking Latin (motivation, general intelligence, study skills) than actual classroom instruction.

Following are visual representations of different types of relationships , a perfect positive relationship, a perfect negative relationship, and no relationship whatsoever. Figure 3.1 is a visual representation of a perfect positive relationship.

Figure 3.1

X	Y
20	10
18	9
16	8
14	7
12	6
10	5
8	4
6	3
4	2
2	1

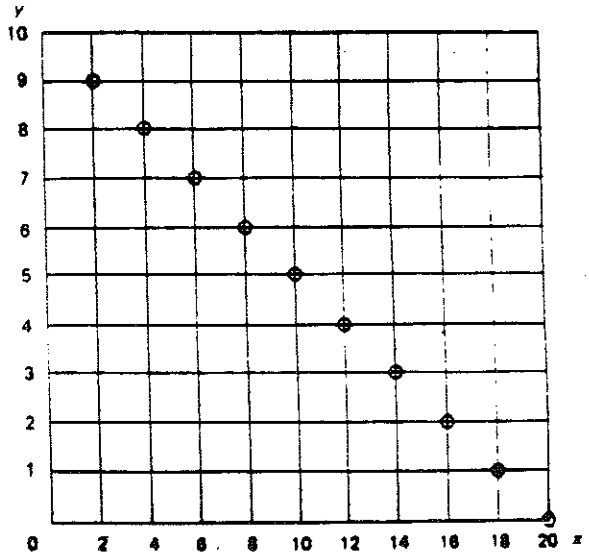


For every increase of 2 units on the X variable, there is a corresponding increase of 1 unit on the Y variable. This is true for all pairs of the two variables. When pairs of values like these are plotted, they fall along a straight line, and when this straight line runs from the lower left of the scattergram to the upper right, we have an example of a perfect positive relationship. The correlation coefficient is equal to +1.00. [2]

A perfect positive relationship indicates an absolute correlation between one factor and a second factor. Figure 3.2 represents a perfect negative relationship.

figure 3.2

X	Y
20	0
18	1
16	2
14	3
12	4
10	5
8	6
6	7
4	8
2	9



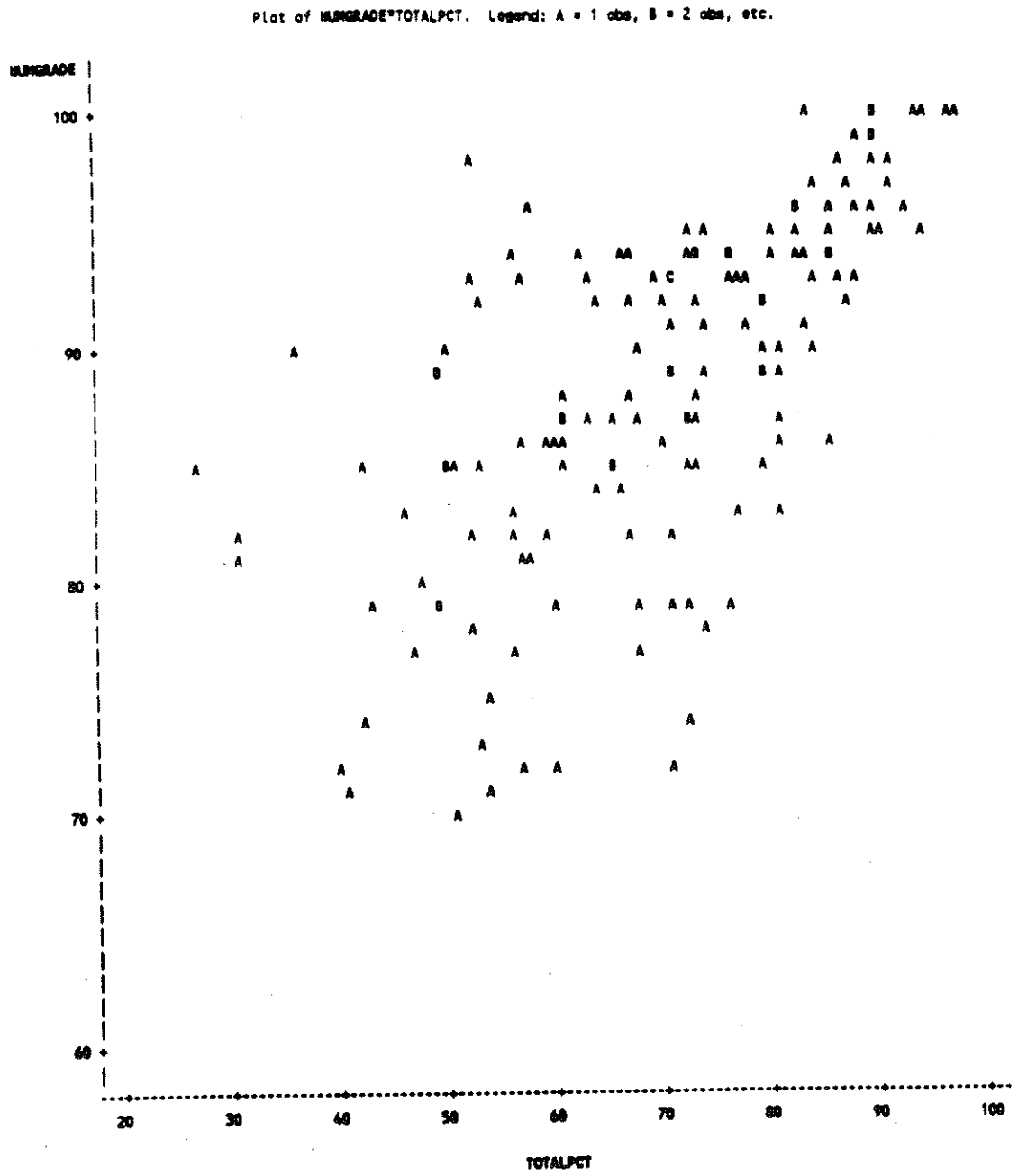
For every measure of 2 units on the x axis, there is a corresponding decrease of 1 unit on the Y axis. Again this relationship is maintained throughout the range. This time our points again fall along a straight line, which now runs from the upper left part of the scattergram to the lower right. This is an example of a perfect negative relationship. The correlation coefficient is -1.00.[3]

In pragmatic terms, when comparing two factors usually one of three situations will occur; either there will be a positive relationship, a negative relationship, or no relationship. In a graph representing no relationship, points would be plotted all over the graph. The stronger the correlation between two groups of variables, the closer to a straight line will be formed on the graph. Although the following graph does not indicate a perfect positive relationship, it does indicate a strong positive relationship.

Figure 3.3 is a representation of the data for the year end classroom grades as they relate to the Essentials Tests. On the plots are the letters A, B, C, etc. When an A appears on the graph that means one student had scores at that intersection of the x and y axes, when a B appears two students had scores at that intersection, when a C appears three students had scores at that intersection. And so forth. With these plots one is basically looking for the line of best fit, and to see how many people deviated from that line. On the y axis a zero represents a F classroom grade, one represents a D classroom grade, a two represents a C classroom grade, a three represents a B classroom grade and a four represents an A classroom grade. Essentials Tests scores are represented in numerics on the x axis. For a positive correlation, one would expect a line that would incline vertically from left to right; for a negative correlation, for an inverse correlation one would expect a line that would decline from left to right; for no relationship, one would expect the intersections to be scattered all over the graph.

As the graph, in figure 3.3 shows, generally speaking, students who performed well in the classroom also did well on the Essentials Tests. In as much as both cover like content areas, one would expect a strong positive correlation between the two. Notice that the closer one gets to the top right hand corner, where "A " classroom grades and high scores on the Essentials Tests coincide, the greater the number of high frequency intersections. This graph seem to indicate a strong positive relationship between classroom grades and the Essentials Tests, this, in turn, would suggest that the Essentials Tests are valid indicators of program implementation. Note that only those students who had both Essentials Tests scores, PSAT scores and year end classroom grades were included in this study.

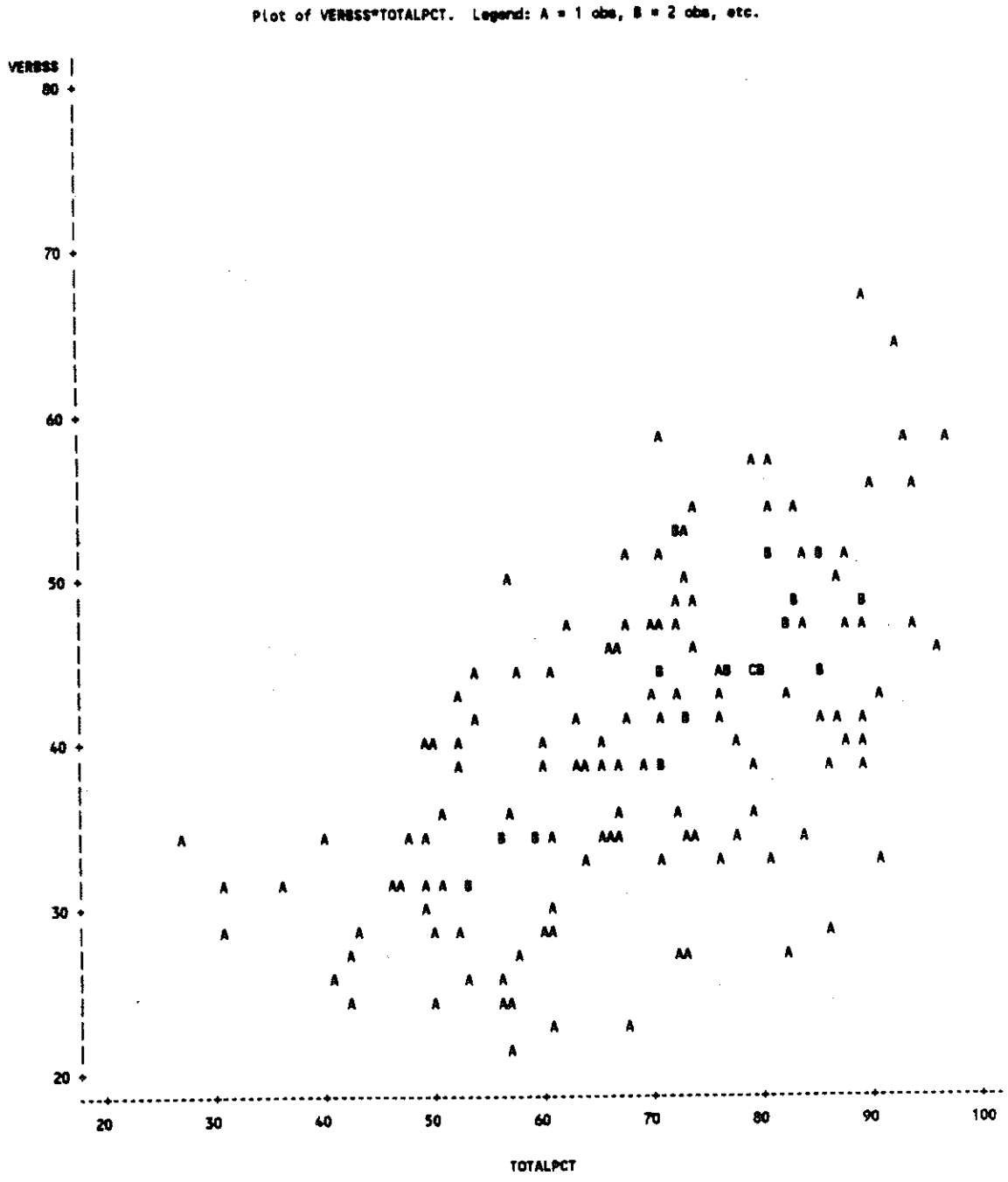
figure 3.3



Note that on the above graph numgrade indicates the end of year numeric classroom grade and totalpct indicates the total percent correct on the Essentials Tests. See Appendix A for more detailed information.

In figure 4 , the y axis represents the verbal PSAT scores and the x axis represents Essentials Tests scores. Once again, when an A appears on the graph that means that one student had scores at that intersection, when B appears two students had scores at that intersection and so forth. See Appendix B.

figure 4



In figure 4, although the relationship between the verbal PSAT scores and the Essentials Tests are not as positive as the relationship between classroom grades and Essentials Tests, nevertheless they form an appropriate line (inclining vertically from left to right) which indicates a strong positive correlation. This again would reinforce the belief that the Essentials Tests are a viable way of evaluating student performance.

Another indicator of the validity of the essentials Tests is the close approximation between classroom grades and Essentials scores. The mean difference for all classes was nineteen points. Teacher 2 and Teacher 3 are, in reality, the same person. This particular teacher held classes at two different schools, which had totally different student populations, nevertheless the difference between the Essentials Tests scores and classroom grades at the first school was thirty four points and at the second school the difference was thirty one points. This seems to indicate two things; a consistency in the test and the impact of classroom instruction on the results of the Essentials Tests. The differential for grades among the rest of the teachers seemed to cluster. The classes of Teacher 1 and Teacher 6 had point differentials of twenty one and eighteen points respectively; and the point spread for Teacher 4 was eight points and Teacher 5 was nine points. All these teachers were at separate locations with distinctively different socio-economic student populations, and yet, they all seemed to perform in a remarkably consistent manner. Once again, two teachers (Teacher 4 and Teacher 5), with separate student populations and disparate teaching styles, had almost exactly the same results, in regard to the difference in points between classroom grades and Essentials Tests scores. And a second set of teachers with less than three points separating their scores.

figure 5

Teacher	1	2	3	4	5	6	7	Total
mean classroom grade	86.7	92.2	84.2	89.2	88.7	89.4	84.5	88.3
mean Essentials Score	65.7	58.0	52.8	80.7	79.0	71.1	40.9	69.3
difference	21.0	34.2	31.4	8.5	9.3	18.2	43.6	19.0

1 is Teacher 1, 2 is Teacher 2, 3 is Teacher 3, 4 is Teacher 4, 5 is Teacher 5, 6 is Teacher 6, 7 is Teacher 7 and Total equals total population. See Appendix C.1 for total population and Appendix C.2 for individual teachers.

Results of the Teacher Surveys.

Teacher surveys were sent out to garner information regarding the emphasis that each teacher placed on the various content areas which were covered on the Essentials Tests (derivations, culture, grammar, comprehension, translation, history and mythology); the preferred style of classroom instruction (lecture, group work, projects, student as teacher, term papers, seminars, worksheets, homework, video, and Socratic method); and methods of evaluation (open note, multiple choice, short answer, matching, translation, oral, true/false, fill in the blanks, analogies, essay, and combination of two or more). There was no response from Teacher 2, Teacher 3 and Teacher 7. Among the teachers that did participate there were marked similarities in all three areas. The figures are represented in percentile, therefore 75% equals three out of four teachers, 50% equates to two out of four teachers and so on.

The first section examined the emphasis which different teachers put on subject area content. The survey was divided up into those areas which are evaluated by the Essentials Tests. In turn, the Essentials Tests are based on those contents areas proscribed by the County of Henrico's Essentials of the Curriculum for Latin II. Those areas are derivations from Latin root words, Roman culture, Latin grammar, reading comprehension, Latin to English translation, Roman history, and classical mythology. The five gradations of responses in this category were : not very important, somewhat important, important, very important, and essential. Although responses did not line up exactly, they usually fell to one side or the other of the median (important). The responding teachers all had very closely related differences between Essentials Tests scores and classroom grades.

In regard to derivations, 75% of the teachers rated as very important or essential; 75 % of the teachers rated culture very important; 100% of the teachers rated grammar as very important or essential; 75% of the teachers rated comprehension as very important or essential; 75% of the teachers rated translation as essential; 50% of the teachers said history was very important; and 50% of the teachers rated mythology as not very or somewhat important. It seems that those instructing agree that the content areas evaluated by the Essentials Tests and the County Essentials for the Curriculum are the content areas on which teachers should be concentrating. See Appendix D for additional information.

Instructional strategies were broken down into the following groups : lecture, group work, projects, student as teacher, term papers, seminars, worksheets, homework, videos, Socratic method, and other. Once again, although there was only one area of complete agreement, responses were weighted either to one side or the other of the median. The question posed was "What type of instructional strategies do you most often employ ?". In five steps responses ranged from never to rarely to sometimes to weekly to daily. Sometimes is considered the median. The one strategy that everyone employed daily was homework. Other strategies heavily favored were lecture (75% weekly or daily), worksheets (75% weekly or daily). Strategies that were either rarely or never employed were projects (75%), student as teacher (100%), term papers (100%), seminars (100%) and videos (75%). Group work and Socratic method were evenly divided. It can be inferred from the surveys that the teachers from the County of Henrico prefer the traditional methods of teaching Latin (homework, lectures, and worksheets), while avoiding progressive techniques such as videos, projects and student as teacher. Seminars and term papers might be viewed as too advanced for the subject level (Latin II).

The third question regarding classroom instruction dealt with methods of evaluation. The categories included : open note, multiple choice, short answer, matching, translation, oral proficiency, true/false, fill in the blanks, analogies, and combination of two or more of the above. Those surveyed were asked what type of test that they most often employed. Choices for response included never, rarely, sometimes, often, and always. With sometimes being the median answer, the respondents were, again, often in agreement. Among the favored modes of testing were translation (100%), combination of two or more of the above (100%).

Also well liked were short answer (75%), fill in the blanks (75%), and essay style questions (75%). Never or rarely used were open note (75%), oral (75%), true/false (75%) , and analogies (100%). These figures seem to indicate several patterns of evaluation. The first, in that 100% of the teachers used translation and 75% of the teachers employed essay style questions, is that these teachers are expecting their students to use their higher order thinking skills (synthesis and analysis). The figures also indicate that a variety of testing formats are used (short answer, fill in the blank, and combination of two or more of the above). Note that more progressive methods of testing (open note, true/false, and analogs) are not frequent testing methods. These results reinforce the impression that traditional methods of evaluation, as well as traditional methods of instruction are being used by this group of teachers.

In analyzing individual teacher responses to the survey as they were compared to the mean scores of corresponding parts of the Essentials Tests, some provocative correlations were found. For Teacher 1, the areas which were rated of greatest importance also received the higher, in relation to other subtest scores, marks. This teacher gave top priority to derivation, culture, grammar, and history. And those very subtests reflected the higher scores (derivatives 76.1, culture 76.9, grammar 60.3 and history 76.9). For Teacher 4, who listed grammar, comprehension, and translation as most important, like results were found. These very same subtests had the higher scores (grammar 80.2, comprehension 86.6, and translation 80.4). While those receiving lower priority received lower scores (culture, mythology and history 76.8 and derivations 80.0). The results for Teacher 5 were somewhat of an anomaly. The areas which were rated to be of the

greatest importance on the survey received the lower scores (grammar 65.0, comprehension 83.5, and translation 77.0), while the areas which were assigned lower priority received the higher scores (derivations 84.0, culture, history and mythology 86.5). Data for Teacher 6 was mixed. Some areas which were given the most emphasis received the better scores (derivations 82.9 and comprehension 78.1) , other areas which were assigned higher priority had lower subtest scores (grammar 58.2 and translation 66.6). See Appendix D for detailed information.

The question was posed to one teacher, "Why did some areas which were given low priority status on the surveys receive high subtest score, while areas which were stressed in classroom instruction receive lower subtest scores ?". The teacher responded that although certain areas are not explicitly stressed, the contents are so interwoven that students pick up on tangent information. For instance, even though derivatives, per se, are not taught at all in the classroom, if a student knows that loqui is the Latin verb for to talk, he can infer that loquacious means talkative. Conversely content areas which are emphasized in classroom instruction may be tested in a format different from the Essentials Tests.

In terms of methods of evaluation, the four most popular among the teachers surveyed were translation (100%), short answer (75%), fill in the blank (75%), and essay (75%). All of the responding teachers use a combination of two or more of the formats. Testing formats rarely or never used were analogies (100%), open note (75%), true/false (75%), and oral proficiency (75%). Interestingly the basic format of the Essentials Tests, multiple choice, was used rarely by Teacher 6, sometimes by Teacher 4 and Teacher 5, and often only by Teacher 1. Does the format of classroom evaluation affect performance on Essentials Tests ?

The final segment of this paper deals with teacher perception of the utility and purpose of the Essentials Tests and teacher attitudes concerning the administration of those tests. Three very different styles of investigation were used in this segment. The first being one in which respondents checked categories which most closely identified their opinions on certain questions. The second section was an open ended response. The third segment was a follow up interview, dealing with questions which arose during the course of the survey.

In the first segment teachers responded to statements regarding their perceptions of the Essentials Tests with answers ranging from (1) strongly disagree, to (2) disagree, to (3) don't know, to (4) agree, to (5) strongly agree. Statement 1 : Essentials Tests are used to evaluate the student's mastery of the language. 100% of the respondents agreed with this assessment. Statement 2 : Essentials Tests are used to evaluate teacher effectiveness. 25 % said that they didn't know, 50 % agreed and 25 % strongly agreed. Statement 3 : I teach the way I do because of the Essentials Tests. 50% strongly disagreed, 25% disagreed, and 25% didn't know. Statement 4 : I teach the way I do despite the Essentials Tests. 50% didn't know, 25% agreed, and 25% strongly agreed. Statement 5 : The Essentials Tests have no impact on the way I teach. 50% strongly agreed and 50% disagreed. Interestingly all the teachers who strongly agreed with this statement were male and all those who disagreed were female.

Responses to this segment tend to indicate that although the responding teachers think that the Essentials Tests is a useful tool in evaluating student mastery of the language, nevertheless there is, at least, a mild animosity towards the Essentials Tests.

It seems that classroom teachers view the Essentials Tests as, at least, a mild inconvenience, and, at worst, a potential instrument to be used them in performance evaluations. It seems that the teachers view the Essentials Tests as being, perhaps, a useful tool for administrative purposes, but of little value to themselves.

In the second section dealing with teacher perception concerning the Essentials Tests consists of several broad open ended questions to which teachers could give subjective opinions. The first question posed was, "Are the Essentials Tests essential ? Why or why not ?" One teacher responded, "To administrators but not teachers." Another expressed an emphatic, "No ! We already give tests and exams during the year. Beyond that there are plenty of state and national tests, in addition, there are achievement and AP tests." A third teacher responded, "No. Low scores can be due to either weak student effort or ineffective teaching, but scores do not tell which is the case.". The most generous of the respondents said, "The tests have improved over the years." The second question posed in this segment was, "What instructional style is most beneficial to your students ?" A general consensus to this questioned among all respondents seemed to be lecture, explanation of grammar in context with the lesson, worksheets and individual guidance, and homework on like material, followed in a reasonable framework of time by a test or a quiz. To the third question, "What can be done to make the Essentials Tests more effective ?" , the responses were more nebulous. One teacher didn't know, another wanted to know what the Essentials Tests were supposed to be testing (standardization of curricula, conscientious teaching, or student ability), a third teacher suggested that if the administration could show teachers how the Essentials Tests could be a useful tool for them, they would get a better response to

both the administration and the development of the tests.

The last phase of the survey consisted of a follow up interview with those participating in the survey. The questions themselves were based either on provocative information in the survey or responses to the open ended questions. One teacher, when asked, "Why do you think students in a certain class, performed better on the culture section than they did on the grammar section, in spite of the fact that the teacher said that grammar was essential and culture was not very important ?" The teacher said, " I would be very surprised if they didn't. Grammar questions are a lot more difficult than culture questions. It really takes a great deal of ingenuity to write a hard culture question." This goes a long way to explain how some scores were diametrically opposed to the results one would expect given the information on the surveys. Another teacher was asked, "Do you prefer traditional methods of teaching (lecture, worksheets, repetitive drills, homework, et. al.) or more progressive methods (group work, open note quizzes, videos, projects) ? And why ?" This teacher responded, "I generally use the traditional method because I think that if learning is mental calisthenics, then Latin is lifting free weights. An enormous amount of mental rigor is needed. The most wonderful thing about the Latin language is that it teaches logic, discipline and the mechanics of language. Everything in Latin is logical and sequential. It is necessary to set a firm foundation, build on that foundation in a methodical way, and eventually one is ready to take a sentence or paragraph apart, analyze it, and reconstruct it in a purely logical manner. Latin is as elegant as Algebra. If it is approached in any other manner, the main benefit, like when a carrot is peeled, is skinned away." The survey showed that the techniques of student as teacher, seminars, and term papers were rarely if ever used in Latin II. One of the

participating teachers, was asked why these methodologies were not used. That teacher responded, "While seminars, term papers and student as teacher are perfectly valid techniques they are too advanced for the Latin II student. In Latin I and Latin II the primary focus should be on learning the fundamentals, figuring out the what role each piece of the puzzle plays, and when you basically know how each piece of language interplays with another, then you can start having some fun with it. At that point, Latin III or more advanced classes, I start to have my students engage in these types of activities."

On the vital question of whether the Essentials Tests were essential, one teacher expressed the opinion that while the tests might be valuable to administrators, they weren't very utile to the classroom teacher. Another thought that the only reason there Essentials Tests was to justify the existence of certain jobs at Central Office. A third expressed the opinion that if classroom teachers were shown some ways to use the results of the Essentials Tests, that they would be more comfortable with their existence.

Conclusions.

The three major questions posed by this paper were are the Essentials Tests valid measurements for program evaluation, how does classroom instruction impact on student performance on the Essentials Tests, and what are teacher perceptions about the Essentials Tests.

In regard to the first question, there seemed to be, save in one case, a very signification correlation between classroom grades and Essentials Tests scores. This seems to indicate that what is tested on the Essentials Tests is very much the material which is being presented in the classroom. It might be interesting to

compare the differential between mean classroom grades and Essentials Tests scores for the same teachers over a period of years to see if those differentials are consistent. If the Essentials Tests scores and classroom grades are roughly equivalent, it seems logical that the Essentials Tests are fairly accurate barometers of what is occurring in the classroom. This hypothesis should be given greater credence due to the fact that the Essentials Tests are constructed by Henrico County teachers in accordance with the Essentials of the Curricula of Henrico County. In addition, although PSATs and the Essentials Tests measure completely different areas in very different ways, nevertheless one would expect to find a positive correlation between the Essentials Tests and PSAT scores, just as one to find a positive correlation between PSAT scores and classroom grades. Once again there is a strong positive correlation between the two sets of scores.

The answer to the second question, what is the relationship between performance on the Essentials Tests, is less clear cut. In some instances the very areas that certain teachers said they emphasized were the very areas in which their students performed best and for other teachers the converse was true. Again it might be interesting to follow individual teachers scores over the years and see if their respective differentials remained constant. The Latin teachers of Henrico County seem to take a traditional approach in classroom instruction, emphasizing the basic, using repetitive drills and focusing on grammar and translation. The Latin teachers seemed to have favored diversified testing formats, stressing mastery of grammar and analyzation of the language. Ironically enough, teachers rarely used the exclusive format of the Essentials Tests, multiple choice.

The third question concerned the perception teachers had of the Essentials Tests. The concensus of opinion seemed to be opposed to the Essentials Tests on

several grounds. The first being that the Essentials Tests are not useful tools for teachers, the second being that the Essentials Tests could be a potential weapon in the hands of a vindictive administrator, and the third being that the Essentials Tests had no impact on classroom instruction. In other words, from an administrative point of view the Essentials Tests could be beneficial, but from an instructional point of view the Essentials Tests could be personally detrimental at worse and a mild aggravation at best. Perhaps the Essentials Tests could be perceived as valuable tools by classroom instructors if they were shown how the Essentials Tests could improve classroom instruction . For example, in what content areas their student performed well and what areas they did not, alternative methods of instruction and evaluation, workshops for exchanges of ideas between same content area teachers.

Acknowledgments.

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Footnotes

1. N.M. Downie and R.W. Heath, Basic Statistical Methods (Harper & Row Publishers, New York, New York, 1987), 103

2. *Ibid.* 94

3. *Ibid.* 94

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Downie, N.M., and R.W. Heath. Basic Statistical Methods. New York, New York : Harper & Row Publishers, 1987

Appendices

Appendix A : Frequency tables for the Essentials Tests. Totalpct = total percent correct; frequency = number of students whose had this score; percent = percent of total population at this score; cumulative frequency = number of students with reported scores; cumulitive percent = percent of total population

Appendix B : Frequency tables for verbal PSAT tests.Same factors as Appendix A

Appendix C : tables for comparison between end of year classroom average and average Essential Tests scores. Numgrade = end of year classroom grade; totalpct = percent correct on Essentials Tests; diff = end of year classroom grade minus Essentials Tests scores. Appendix C.1 is for the total population and Appendix C.2 is by individual teacher.

Appendix D : tables for Essentials Tests (and subtests) and end of year classroom grades by individual teachers. Ex1grade = first semester exam grade; sm1grade = first semester grade; ex2grade = second semester exam grade; crsgrade = end of year grade. For the Essentials Tests subtests - sub1 = derivatives; sub2 = vocabulary; sub3 = culture; sub4 = grammar; sub5 = reading comprehension; sub6 = written expression; sub7 = translation.

Appendix A

SAS

TOTALPCT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
27	1	0.6	1	0.6
31	2	1.3	3	1.9
36	1	0.6	4	2.5
40	1	0.6	5	3.2
41	1	0.6	6	3.8
42	3	1.9	9	5.7
43	1	0.6	10	6.3
46	1	0.6	11	7.0
47	1	0.6	12	7.6
48	1	0.6	13	8.2
49	4	2.5	17	10.8
50	3	1.9	20	12.7
51	2	1.3	22	13.9
52	4	2.5	26	16.5
53	3	1.9	29	18.4
54	2	1.3	31	19.6
56	4	2.5	35	22.2
57	4	2.5	39	24.7
58	2	1.3	41	25.9
59	2	1.3	43	27.2
60	3	1.9	46	29.1
61	5	3.2	51	32.3
62	1	0.6	52	32.9
63	2	1.3	54	34.2
64	2	1.3	56	35.4
65	3	1.9	59	37.3
66	2	1.3	61	38.6
67	4	2.5	65	41.1
68	4	2.5	69	43.7
69	1	0.6	70	44.3
70	2	1.3	72	45.6
71	9	5.7	81	51.3
72	7	4.4	88	55.7
73	6	3.8	94	59.5
74	4	2.5	98	62.0
76	5	3.2	103	65.2
77	2	1.3	105	66.5
78	2	1.3	107	67.7
79	6	3.8	113	71.5
80	2	1.3	115	72.8
81	5	3.2	120	75.9
82	4	2.5	124	78.5
83	3	1.9	127	80.4
84	3	1.9	130	82.3
85	5	3.2	135	85.4
86	2	1.3	137	86.7
87	2	1.3	139	88.0
88	3	1.9	142	89.9
89	7	4.4	149	94.3

Appendix B

SAS

VERBSS	Frequency	Percent	Cumulative Frequency	Cumulative Percent
22	1	0.6	1	0.6
23	2	1.2	3	1.8
24	2	1.2	5	3.0
25	2	1.2	7	4.2
26	3	1.8	10	6.1
27	5	3.0	15	9.1
28	2	1.2	17	10.3
29	6	3.6	23	13.9
30	3	1.8	26	15.8
31	3	1.8	29	17.6
32	5	3.0	34	20.6
33	5	3.0	39	23.6
34	10	6.1	49	29.7
35	7	4.2	56	33.9
36	7	4.2	63	38.2
38	6	3.6	69	41.8
39	7	4.2	76	46.1
40	8	4.8	84	50.9
41	4	2.4	88	53.3
42	6	3.6	94	57.0
43	6	3.6	100	60.6
44	5	3.0	105	63.6
45	11	6.7	116	70.3
46	4	2.4	120	72.7
47	11	6.7	131	79.4
48	2	1.2	133	80.6
49	4	2.4	137	83.0
50	3	1.8	140	84.8
51	4	2.4	144	87.3
52	4	2.4	148	89.7
53	4	2.4	152	92.1
54	2	1.2	154	93.3
55	2	1.2	156	94.5
56	2	1.2	158	95.8
57	2	1.2	160	97.0
58	2	1.2	162	98.2
59	1	0.6	163	98.8
64	1	0.6	164	99.4
67	1	0.6	165	100.0

Appendix C.1

SAS

N Obs	Variable	N	Minimum	Maximum	Mean	Std Dev
156	NUMGRADE	156	70.0000000	100.0000000	88.3846154	7.3978737
	TOTALPCT	156	27.0000000	97.0000000	69.3269231	15.0496655
	DIFF	156	1.0000000	58.0000000	19.0576923	11.7595482

Appendix C.2

SAS

---------- TEACHER=1 ----------

N Obs	Variable	N	Minimum	Maximum	Mean	Std Dev
37	NUMGRADE	37	71.0000000	97.0000000	86.7297297	7.5227383
	TOTALPCT	37	40.0000000	87.0000000	65.7297297	12.6285581
	DIFF	37	10.0000000	36.0000000	21.0000000	7.0000000

---------- TEACHER=2 ----------

N Obs	Variable	N	Minimum	Maximum	Mean	Std Dev
10	NUMGRADE	10	80.0000000	98.0000000	92.2000000	4.8944413
	TOTALPCT	10	48.0000000	73.0000000	58.0000000	8.6023253
	DIFF	10	21.0000000	46.0000000	34.2000000	7.9833159

---------- TEACHER=3 ----------

N Obs	Variable	N	Minimum	Maximum	Mean	Std Dev
5	NUMGRADE	5	78.0000000	94.0000000	84.2000000	6.3796552
	TOTALPCT	5	49.0000000	62.0000000	52.8000000	5.2630789
	DIFF	5	26.0000000	35.0000000	31.4000000	3.5777088

---------- TEACHER=4 ----------

N Obs	Variable	N	Minimum	Maximum	Mean	Std Dev
37	NUMGRADE	37	72.0000000	100.0000000	89.2432432	8.5583144
	TOTALPCT	37	60.0000000	96.0000000	80.7297297	8.9865599
	DIFF	37	1.0000000	26.0000000	8.5135135	5.0641530

---------- TEACHER=5 ----------

N Obs	Variable	N	Minimum	Maximum	Mean	Std Dev
11	NUMGRADE	11	70.0000000	98.0000000	88.7272727	8.5801038
	TOTALPCT	11	51.0000000	89.0000000	79.0909091	11.1933422
	DIFF	11	5.0000000	19.0000000	9.6363636	4.1297149

Appendix C.2

SAS

TEACHER=6

N Obs	Variable	N	Minimum	Maximum	Mean	Std Dev
46	NUMGRADE	46	71.0000000	100.0000000	89.4130435	6.4310914
	TOTALPCT	46	49.0000000	97.0000000	71.1521739	11.9591293
	DIFF	46	1.0000000	40.0000000	18.2608696	7.9174485

TEACHER=7

N Obs	Variable	N	Minimum	Maximum	Mean	Std Dev
10	NUMGRADE	10	74.0000000	93.0000000	84.5000000	5.4822947
	TOTALPCT	10	27.0000000	52.0000000	40.9000000	9.2550287
	DIFF	10	30.0000000	58.0000000	43.6000000	9.3950341

Appendix D

SAS

---------- TEACHER=1 ----------

CORRELATION ANALYSIS

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 38
8 'WITH' Variables: TOTALPCT SUB1PCT SUB2PCT SUB3PCT SUB4PCT SUB5PCT SUB6PCT SUB7PCT
5 'VAR' Variables: EX1GRADE SM1GRADE EX2GRADE SM2GRADE CRSGRADE

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
TOTALPCT	38	65.105263	13.037968	2474.000000	40.000000	87.000000
SUB1PCT	38	76.315789	15.669052	2900.000000	40.000000	100.000000
SUB2PCT	38	81.842105	19.292242	3110.000000	20.000000	100.000000
SUB3PCT	38	76.973684	13.583549	2925.000000	50.000000	100.000000
SUB4PCT	38	60.394737	18.540736	2295.000000	25.000000	100.000000
SUB5PCT	38	63.552632	20.563281	2415.000000	20.000000	95.000000
SUB6PCT	38	42.105263	18.032687	1600.000000	0	80.000000
SUB7PCT	38	48.947368	16.239670	1860.000000	20.000000	80.000000
EX1GRADE	38	2.078947	1.495608	79.000000	0	4.000000
SM1GRADE	38	2.789474	1.142730	106.000000	0	4.000000
EX2GRADE	38	1.947368	1.432204	74.000000	0	4.000000
SM2GRADE	38	2.710526	1.063088	103.000000	0	4.000000
CRSGRADE	38	2.815789	1.086906	107.000000	0	4.000000

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 38

	EX1GRADE	SM1GRADE	EX2GRADE	SM2GRADE	CRSGRADE
TOTALPCT	0.86860 0.0001	0.83417 0.0001	0.82676 0.0001	0.85828 0.0001	0.83104 0.0001
SUB1PCT	0.50866 0.0011	0.48381 0.0021	0.49695 0.0015	0.56702 0.0002	0.53038 0.0006
SUB2PCT	0.59431 0.0001	0.59426 0.0001	0.65897 0.0001	0.67242 0.0001	0.62241 0.0001
SUB3PCT	0.66395 0.0001	0.64561 0.0001	0.60286 0.0001	0.64891 0.0001	0.62939 0.0001
SUB4PCT	0.69573 0.0001	0.69287 0.0001	0.69291 0.0001	0.76012 0.0001	0.69440 0.0001
SUB5PCT	0.80352 0.0001	0.75155 0.0001	0.76821 0.0001	0.70357 0.0001	0.71934 0.0001
SUB6PCT	0.65507 0.0001	0.62542 0.0001	0.54858 0.0004	0.59658 0.0001	0.61327 0.0001
SUB7PCT	0.31509 0.0540	0.26445 0.1086	0.22996 0.1649	0.27932 0.0895	0.27964 0.0891

Appendix D

SAS

---------- TEACHER=2 ----------

CORRELATION ANALYSIS

8 'WITH' Variables: TOTALPCT SUB1PCT SUB2PCT SUB3PCT SUB4PCT SUB5PCT SUB6PCT SUB7PCT
5 'VAR' Variables: EX1GRADE SM1GRADE EX2GRADE SM2GRADE CRSGRADE

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
TOTALPCT	9	59.666667	8.093207	537.000000	48.000000	73.000000
SUB1PCT	9	68.888889	23.154073	620.000000	20.000000	100.000000
SUB2PCT	9	92.222222	8.333333	830.000000	80.000000	100.000000
SUB3PCT	9	70.000000	11.726039	630.000000	60.000000	90.000000
SUB4PCT	9	50.000000	11.180340	450.000000	30.000000	65.000000
SUB5PCT	9	58.888889	11.118053	530.000000	35.000000	75.000000
SUB6PCT	9	41.111111	16.158933	370.000000	20.000000	60.000000
SUB7PCT	9	36.666667	13.228757	330.000000	20.000000	60.000000
EX1GRADE	9	3.333333	0.866025	30.000000	2.000000	4.000000
SM1GRADE	9	3.555556	0.726483	32.000000	2.000000	4.000000
EX2GRADE	9	3.333333	0.707107	30.000000	2.000000	4.000000
SM2GRADE	9	3.555556	0.726483	32.000000	2.000000	4.000000
CRSGRADE	9	3.666667	0.707107	33.000000	2.000000	4.000000

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 9

	EX1GRADE	SM1GRADE	EX2GRADE	SM2GRADE	CRSGRADE
TOTALPCT	0.65987 0.0531	0.39685 0.2903	0.30580 0.4236	0.69449 0.0379	0.65528 0.0554
SUB1PCT	0.02078 0.9577	0.11560 0.7671	-0.27994 0.4656	0.04128 0.9160	0.20359 0.5993
SUB2PCT	-0.11547 0.7674	-0.02294 0.9533	0.28284 0.4608	0.39001 0.2994	0.14142 0.7167
SUB3PCT	0.61546 0.0777	0.00000 1.0000	0.00000 1.0000	0.22010 0.5693	0.30151 0.4304
SUB4PCT	0.58095 0.1009	0.53864 0.1346	0.55340 0.1222	0.84643 0.0040	0.71151 0.0316
SUB5PCT	0.43274 0.2447	0.55025 0.1248	0.21200 0.5840	0.70501 0.0339	0.66250 0.0518
SUB6PCT	0.41684 0.2644	0.04732 0.9038	0.51053 0.1602	0.47325 0.1982	0.25526 0.5074
SUB7PCT	0.76376 0.0166	0.34684 0.3605	0.26726 0.4869	0.34684 0.3605	0.40089 0.2849

Appendix D

---------- TEACHER=3 ----------

CORRELATION ANALYSIS

8 'WITH' Variables: TOTALPCT SUB1PCT SUB2PCT SUB3PCT SUB4PCT SUB5PCT SUB6PCT SUB7PCT
5 'VAR' Variables: EX1GRADE SM1GRADE EX2GRADE SM2GRADE CRSGRADE

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
TOTALPCT	5	52.800000	5.263079	264.000000	49.000000	62.000000
SUB1PCT	5	66.000000	11.401754	330.000000	50.000000	80.000000
SUB2PCT	5	90.000000	10.000000	450.000000	80.000000	100.000000
SUB3PCT	5	69.000000	6.519202	345.000000	60.000000	75.000000
SUB4PCT	5	41.000000	16.355427	205.000000	25.000000	65.000000
SUB5PCT	5	45.000000	14.577380	225.000000	25.000000	60.000000
SUB6PCT	5	26.000000	8.944272	130.000000	20.000000	40.000000
SUB7PCT	5	36.000000	23.021729	180.000000	0	60.000000
EX1GRADE	5	1.000000	1.224745	5.000000	0	3.000000
SM1GRADE	5	2.800000	0.836660	14.000000	2.000000	4.000000
EX2GRADE	5	0.800000	1.303840	4.000000	0	3.000000
SM2GRADE	5	2.600000	0.894427	13.000000	2.000000	4.000000
CRSGRADE	5	2.800000	0.836660	14.000000	2.000000	4.000000

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 5

	EX1GRADE	SM1GRADE	EX2GRADE	SM2GRADE	CRSGRADE
TOTALPCT	0.89204 0.0419	0.78348 0.1169	0.86707 0.0570	0.88158 0.0480	0.78348 0.1169
SUB1PCT	0.35806 0.5540	0.41931 0.4822	-0.06727 0.9144	0.04903 0.9376	0.41931 0.4822
SUB2PCT	0.20412 0.7419	0.00000 1.0000	0.57522 0.3103	0.27951 0.6488	0.00000 1.0000
SUB3PCT	0.15656 0.8015	0.18334 0.7679	-0.17647 0.7765	-0.08575 0.8910	0.18334 0.7679
SUB4PCT	0.00000 1.0000	-0.16443 0.7916	0.24619 0.6897	0.03418 0.9565	-0.16443 0.7916
SUB5PCT	0.63013 0.2545	0.61494 0.2696	0.65767 0.2277	0.76696 0.1302	0.61494 0.2696
SUB6PCT	0.91287 0.0305	0.86860 0.0560	0.77174 0.1263	0.68750 0.1996	0.86860 0.0560
SUB7PCT	0.53200 0.3561	0.59705 0.2878	0.38312 0.5244	0.63134 0.2533	0.59705 0.2878

Appendix D

---------- TEACHER=4 ----------

CORRELATION ANALYSIS

8 'WITH' Variables: TOTALPCT SUB1PCT SUB2PCT SUB3PCT SUB4PCT SUB5PCT SUB6PCT SUB7PCT
5 'VAR' Variables: EX1GRADE SM1GRADE EX2GRADE SM2GRADE CRSGRADE

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
TOTALPCT	37	80.918919	9.087165	2994.000000	60.000000	96.000000
SUB1PCT	37	80.000000	19.436506	2960.000000	30.000000	100.000000
SUB2PCT	37	93.783784	10.097126	3470.000000	50.000000	100.000000
SUB3PCT	37	76.891892	10.629581	2845.000000	40.000000	95.000000
SUB4PCT	37	80.270270	12.357294	2970.000000	50.000000	100.000000
SUB5PCT	37	86.621622	11.905534	3205.000000	50.000000	100.000000
SUB6PCT	37	70.540541	17.629827	2610.000000	40.000000	100.000000
SUB7PCT	37	77.297297	15.924937	2860.000000	40.000000	100.000000
EX1GRADE	37	2.756757	1.362298	102.000000	0	4.000000
SM1GRADE	37	3.027027	0.985633	112.000000	1.000000	4.000000
EX2GRADE	37	2.621622	1.138990	97.000000	0	4.000000
SM2GRADE	37	2.945946	1.052667	109.000000	0	4.000000
CRSGRADE	37	3.108108	0.965625	115.000000	1.000000	4.000000

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 37

	EX1GRADE	SM1GRADE	EX2GRADE	SM2GRADE	CRSGRADE
TOTALPCT	0.78372 0.0001	0.79110 0.0001	0.77257 0.0001	0.80681 0.0001	0.80193 0.0001
SUB1PCT	0.30423 0.0671	0.18850 0.2639	0.21331 0.2049	0.25795 0.1232	0.23680 0.1582
SUB2PCT	0.47265 0.0031	0.51976 0.0010	0.39364 0.0159	0.38566 0.0184	0.41272 0.0111
SUB3PCT	0.45468 0.0047	0.52525 0.0008	0.51964 0.0010	0.55554 0.0004	0.53431 0.0007
SUB4PCT	0.64754 0.0001	0.63797 0.0001	0.68835 0.0001	0.68449 0.0001	0.66094 0.0001
SUB5PCT	0.61587 0.0001	0.69648 0.0001	0.69177 0.0001	0.73862 0.0001	0.73336 0.0001
SUB6PCT	0.56079 0.0003	0.52667 0.0008	0.45314 0.0049	0.42072 0.0095	0.50230 0.0015
SUB7PCT	0.64747 0.0001	0.64188 0.0001	0.60057 0.0001	0.67042 0.0001	0.63370 0.0001

Appendix D

---------- TEACHER=5 ----------

CORRELATION ANALYSIS

8 'WITH' Variables: TOTALPCT SUB1PCT SUB2PCT SUB3PCT SUB4PCT SUB5PCT SUB6PCT SUB7PCT
5 'VAR' Variables: EX1GRADE SM1GRADE EX2GRADE SM2GRADE CRSGRADE

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
TOTALPCT	10	78.500000	11.616559	785.000000	51.000000	89.000000
SUB1PCT	10	84.000000	13.498971	840.000000	60.000000	100.000000
SUB2PCT	10	91.000000	8.755950	910.000000	80.000000	100.000000
SUB3PCT	10	86.500000	13.753787	865.000000	50.000000	100.000000
SUB4PCT	10	65.000000	20.138410	650.000000	30.000000	90.000000
SUB5PCT	10	83.500000	14.539219	835.000000	45.000000	95.000000
SUB6PCT	10	76.000000	15.055453	760.000000	50.000000	100.000000
SUB7PCT	10	64.000000	20.110804	640.000000	30.000000	90.000000
EX1GRADE	10	2.200000	1.475730	22.000000	0	4.000000
SM1GRADE	10	2.800000	1.032796	28.000000	1.000000	4.000000
EX2GRADE	10	2.000000	1.490712	20.000000	0	4.000000
SM2GRADE	10	2.800000	1.135292	28.000000	1.000000	4.000000
CRSGRADE	10	2.900000	0.994429	29.000000	1.000000	4.000000

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 10

	EX1GRADE	SM1GRADE	EX2GRADE	SM2GRADE	CRSGRADE
TOTALPCT	0.82315 0.0034	0.90759 0.0003	0.84695 0.0020	0.84250 0.0022	0.88971 0.0006
SUB1PCT	0.56892 0.0861	0.46224 0.1786	0.44173 0.2012	0.27551 0.4410	0.36420 0.3008
SUB2PCT	0.41275 0.2358	0.63892 0.0467	0.51075 0.1314	0.58123 0.0780	0.65080 0.0416
SUB3PCT	0.47626 0.1641	0.57101 0.0847	0.43354 0.2107	0.51946 0.1239	0.58085 0.0783
SUB4PCT	0.87860 0.0008	0.88146 0.0007	0.92529 0.0001	0.85048 0.0018	0.85998 0.0014
SUB5PCT	0.48161 0.1587	0.60676 0.0629	0.51265 0.1297	0.61929 0.0562	0.68012 0.0305
SUB6PCT	0.49010 0.1504	0.65741 0.0389	0.59409 0.0701	0.66306 0.0366	0.63825 0.0470
SUB7PCT	0.71882 0.0192	0.73823 0.0148	0.74125 0.0142	0.62292 0.0544	0.63337 0.0493

Appendix D

---------- TEACHER=6 ----------

CORRELATION ANALYSIS

8 'WITH' Variables: TOTALPCT SUB1PCT SUB2PCT SUB3PCT SUB4PCT SUB5PCT SUB6PCT SUB7PCT
5 'VAR' Variables: EX1GRADE SM1GRADE EX2GRADE SM2GRADE CRSGRADE

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
TOTALPCT	47	71.085106	11.837358	3341.000000	49.000000	97.000000
SUB1PCT	47	82.978723	18.047629	3900.000000	30.000000	100.000000
SUB2PCT	47	84.893617	11.771805	3990.000000	50.000000	100.000000
SUB3PCT	47	78.510638	12.243672	3690.000000	50.000000	95.000000
SUB4PCT	47	58.297872	19.033055	2740.000000	25.000000	100.000000
SUB5PCT	47	78.191489	15.757177	3675.000000	40.000000	100.000000
SUB6PCT	47	47.872340	21.763169	2250.000000	10.000000	100.000000
SUB7PCT	47	65.106383	22.445329	3060.000000	10.000000	100.000000
EX1GRADE	47	3.319149	0.555854	156.000000	2.000000	4.000000
SM1GRADE	47	3.212766	0.749961	151.000000	1.000000	4.000000
EX2GRADE	47	2.765957	1.087733	130.000000	0	4.000000
SM2GRADE	47	3.000000	0.932505	141.000000	0	4.000000
CRSGRADE	47	3.170213	0.816119	149.000000	1.000000	4.000000

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 47

	EX1GRADE	SM1GRADE	EX2GRADE	SM2GRADE	CRSGRADE
TOTALPCT	0.75238 0.0001	0.70316 0.0001	0.67861 0.0001	0.72474 0.0001	0.71630 0.0001
SUB1PCT	0.31491 0.0311	0.17702 0.2339	0.26884 0.0677	0.31001 0.0339	0.18622 0.2101
SUB2PCT	0.32092 0.0278	0.29811 0.0418	0.10837 0.4684	0.17823 0.2307	0.16032 0.2817
SUB3PCT	0.47064 0.0008	0.67449 0.0001	0.52009 0.0002	0.70450 0.0001	0.62421 0.0001
SUB4PCT	0.56617 0.0001	0.49043 0.0005	0.46861 0.0009	0.45319 0.0014	0.49490 0.0004
SUB5PCT	0.70024 0.0001	0.62194 0.0001	0.64065 0.0001	0.67317 0.0001	0.70065 0.0001
SUB6PCT	0.63241 0.0001	0.48119 0.0006	0.56624 0.0001	0.48204 0.0006	0.49818 0.0004
SUB7PCT	0.47639 0.0007	0.50229 0.0003	0.49522 0.0004	0.52971 0.0001	0.55677 0.0001

Appendix D

---------- TEACHER=7 ----------

CORRELATION ANALYSIS

8 'WITH' Variables: TOTALPCT SUB1PCT SUB2PCT SUB3PCT SUB4PCT SUB5PCT SUB6PCT SUB7PCT
5 'VAR' Variables: EX1GRADE SM1GRADE EX2GRADE SM2GRADE CRSGRADE

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
TOTALPCT	7	38.714286	9.196273	271.000000	27.000000	52.000000
SUB1PCT	7	54.285714	15.118579	380.000000	30.000000	70.000000
SUB2PCT	7	55.714286	28.199966	390.000000	20.000000	90.000000
SUB3PCT	7	52.142857	15.507295	365.000000	35.000000	70.000000
SUB4PCT	7	23.571429	13.758114	165.000000	10.000000	50.000000
SUB5PCT	7	35.714286	14.556949	250.000000	20.000000	65.000000
SUB6PCT	7	24.285714	12.724180	170.000000	0	40.000000
SUB7PCT	7	30.000000	17.320508	210.000000	10.000000	50.000000
EX1GRADE	7	0.571429	0.534522	4.000000	0	1.000000
SM1GRADE	7	2.285714	0.487950	16.000000	2.000000	3.000000
EX2GRADE	7	0.571429	0.534522	4.000000	0	1.000000
SM2GRADE	7	2.000000	0.816497	14.000000	1.000000	3.000000
CRSGRADE	7	2.142857	0.690066	15.000000	1.000000	3.000000

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 7

	EX1GRADE	SM1GRADE	EX2GRADE	SM2GRADE	CRSGRADE
TOTALPCT	-0.80889 0.0276	-0.16448 0.7245	0.41171 0.3588	0.00000 1.0000	-0.30765 0.5021
SUB1PCT	0.05893 0.9001	0.03227 0.9452	-0.55979 0.1913	-0.40505 0.3674	-0.70747 0.0754
SUB2PCT	-0.47587 0.2827	-0.13843 0.7672	0.30012 0.5131	0.07238 0.8774	-0.30588 0.5047
SUB3PCT	-0.87609 0.0097	-0.20453 0.6600	0.53140 0.2196	0.39489 0.3806	0.04450 0.9245
SUB4PCT	-0.66371 0.1040	-0.42560 0.3411	0.35614 0.4330	0.07418 0.8744	-0.32602 0.4755
SUB5PCT	-0.48959 0.2648	-0.26816 0.5609	0.58139 0.1710	0.14022 0.7643	0.07111 0.8796
SUB6PCT	-0.17504 0.7074	0.03835 0.9349	0.07001 0.8814	-0.32084 0.4829	-0.46098 0.2978
SUB7PCT	0.00000 1.0000	0.78881 0.0350	-0.36004 0.4276	-0.58926 0.1639	0.13944 0.7656

WHAT INCREASES STUDENT INTEREST IN READING?

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April, 1995

*The views expressed in MERC publications are those of individual authors and not necessarily those of the Consortium or its members.

WHAT INCREASES STUDENT INTEREST IN READING?

BACKGROUND

It was in early November, only nine weeks into a new school year, that I realized, as I had in previous years, I had a group of students who did not want to read literature chosen and assigned by me. We had experienced success only with the October short story unit on those days that students listened to taped versions of the stories. We were to begin Charles Dickens' Great Expectations in mid November and continue its study until Christmas. I realized that the reading goals I had for my ninth graders would not be met unless I discovered a way to motivate my students to read at home and to begin developing reading as a hobby during their own leisure time. Thus, the questions: Given an adolescent group of students with a variety of reading levels and reading interests, how can a literature teacher motivate students to read more during their leisure time? Also, what improves students' reading habits and what instructional techniques make students more receptive to literature? Looking beyond the December Charles Dickens unit, I began thinking of ways I could help my students increase their interest in outside reading.

I reviewed standardized test data for each of the eleven ninth grade students in my first period. Test scores from only eight months earlier showed that six were reading below ninth grade level, four were reading at ninth grade level, and one was reading on an eleventh grade level. Thinking particularly of Bob and Ann whose test scores indicated sixth grade reading levels, I

questioned the success of reading Great Expectations and realized that that unit would be difficult for the students.

Great Expectations was both difficult and frustrating. We used debriefing at frequent intervals of oral reading which allowed for students to learn from each other, but homework reading assignments became problematic as the students read at different rates. Reading deadlines were set, quiz dates announced and opportunities for some quiet in-class reading continued. Bob spent valuable time peering out the window, and Ann looked often at the clock during quiet reading periods. Most others attempted to complete their reading. One formed each word with her mouth; two followed the lines with their fingers, and Logan, who reads on eleventh grade level, stopped reading occasionally to jot down a quick note. I knew they were reading only because of the impending quizzes and tests. Despite my efforts to make the literature activities engaging, the students did not enjoy the novel. They told me frequently! Knowing only that I intended to find a way to improve my first period students' reading habits and that this goal would involve introducing literature not previously planned for my ninth graders, I received permission from my department chair and principal to implement a reading project/study with my first period class of eleven students.

STUDENT PERCEPTIONS

The starting point of my understanding began when I surveyed students in November to find out specifics regarding their comprehension of what literature is

and why they read literature. I discovered that five of the nine students surveyed believe literature to be "a group of stories." Other responses to "What is literature?" included:

"Literature is writing from old others."

"Literature is history."

These students had little understanding of literature beyond literature found in text books. With this in mind I asked if students understood why they read literature. They told me:

"I read literature to build my vocabulary."

"I read to gain knowledge and for fun."

"We read literature because it teaches us things about life."

"Students read because teachers need something for us to do."

Such a variety of responses indicated to me that few of my students were reading with an understanding that they would learn something, and others read because they felt they were made to read. There appeared to be room for improvement in reading habits with most of the students. Changing students' perceptions about reading would be a challenge that I accepted eagerly as I was anxious to have students increase the amount of time they read.

Interested in how my students believed they approach reading, and how they perceive themselves as readers, I asked each to complete the Burke Reading Survey (Appendix I). Several responses revealed why my students read as they

do.

"When you are reading and you come to something you do not know, what do you do?"

Ann: "Skip it."
Logan: "Try to figure it out by context clues."

"Do you ever do something else?"

Ann: "No."
Logan: "Once in a while I get a dictionary."

"Who is a good reader you know?"

Ann: "Logan."
Logan: "All my teachers."

"Do you think you are a good reader?"

Ann: "No."
Logan: "Yes."

Everyone responded that they thought they were good readers except Ann and Bob. Six of the eleven stated that they skip over something they do not understand. The majority believed that students who were having difficulty reading could improve if teachers gave more reading assignments.

There was evidence that most of the students could do a better job monitoring their own reading by defining problem words and/or by reflecting on puzzling information. Perhaps they should learn to write while they read as a means of better understanding what they read. Student perceptions also showed that they believed improvement in reading could be made. With a clearer understanding of my students' perceptions, I realized that changes in their

behavior/participation and my teaching techniques would have to occur if attempts to improve reading habits were to be made.

READING PROJECT

The idea for the reading project had occurred to me during the Great Expectations unit when I wondered had we read something different, would enthusiasm have been greater? The field of adolescent literature has grown tremendously, leaving classroom teachers with difficult choices to make when planning literature units. Many teachers traditionally use only the classics for their literature choices; however, with the growing need to match student interests to reading material, some teachers have begun incorporating more young adult literature into their units. We had just completed a novel about which the students said:

> "It was boring."
> "I didn't understand why the characters acted like that."
> "It was old and serious."

Realizing this, I set out to choose a variety of books for their reading. My students are extremely interested in their relationships with others, their changing bodies, and career paths. They also seem confused about values and are seeking answers. In trying to match their emotional interest to their reading interests, I offered the following:

> Dinky Hocker Shoots Smack! by M. E. Kerr,
> The Member of the Wedding by Carson McCullers,
> The Pigman by Paul Zindel,

Reading Project 6

Are You There God, It's Me Margaret? by Judy Blume,
The Contender by Robert Lipsyte.

Criteria for selecting books was based on these questions:

Will the books be taught in ensuing years?
Have the books been taught at the middle school?
Are the books approximately 160 pages each?
Do the books cover a variety of character id's? ex: gender, race, age.

I received the books from my English department and secured approval of the titles from my department chairman and principal. I told students that they would have an opportunity to replace one low quiz grade for each book completed and that to complete a book, one had to read the book, keep a response journal, and record reading times on a log. I also explained that we would have some opportunities for reading and discussing books in class, but that there would not be any tests. Finally, I announced that they had ten weeks to read as many books as they wanted and that I hoped everyone would participate even though they were not required to do so. I provided composition books in which to write and folders in which to put journals, paperbacks, and logs. Alll eleven students took books.

PRELIMINARY OBSERVATIONS

With my promise of extra credit and knowing that there was to be no test or pressure to read, each student selected for his reading pleasure either Are You There God, It's Me Margaret? or The Contender. I did not inquire about their reading progress until mid-January even though I sometimes reminded them that

reading was an option for their free time. When I asked students to produce their reading folders the first time and many times to follow, two students, Denny and Kirk, did not have theirs. During these mini-lessons that were in addition to my prescribed curriculum, the students and I would do one or more of the following activities with varying degrees of success: group discussion, correlation of plots to students' lives, one-minute student exchanges, journal writing, and project reflection. Although Denny and Kirk did not keep a reading log and seldom wrote in their journals, I knew they were reading because they participated in discussions. Kirk, who obviously enjoyed reading The Contender, was reading less of his assigned World Geography and English work. When asked about making up the missed reading, he indicated that it would be difficult because "it ain't so good as The Contender." However, he finally agreed that his paperback reading would be done after all other homework.

Logan had always seemed a truly independent student, and her independence was reflected in her approach to the reading project. Whenever there was free time, she would read. Just as I had observed her self-motivated note-taking during Great Expectations, Logan also used her journal for several of her own notes about her books. She often volunteered to give plot summaries during discussions. She appeared to be enjoying her book even though I was certain she read mostly for the extra credit.

Very aware of Ann's and Bob's perceptions of themselves as poor readers, I

was surprised to see the patterns that began to emerge. At first Ann seldom wanted to speak aloud about her book, but she consistently recorded her reading times and did journal writings that were prompted by me. She once even asked if she could borrow for the day an extra copy of Are You There God, It's Me Margaret? because she left hers at home. This was a ninth grade student reading on a sixth grade level who failed all of her Great Expectations assignments. Bob had completed Great Expectations with below average but passing grades, and he, too, was reading enthusiastically. "May I trade this in for a new book?" The question came from Bob who stood quietly at my desk. I asked if he did not like the book and he said, "Oh, I finished it, I need another one to read." Bob and Ann, about whom I had worried, were progressing better than other students whose test scores suggested they had more ability. Considering Bob's consistently below average test scores and apparent enjoyment of reading, I surmised that he must simply not test well, perhaps explaining why his achievement test scores were low. I watched him excel during oral activities of the reading project. Ann, too, showed improvement in her participation in written activities. Interestingly, one journal entry revealed, "I am finally reading a book in school that I can understand." Ann and I had discovered her reading related comfort zone. Knowing that she still needed to grow as a reader, I insisted that she often reflect upon what she had read and share her thoughts with her peers. This sharing seemed to strengthen her reading comprehension.

Students enjoyed sharing plot highlights with one another during one minute intervals where after one minute they would switch partners. When selecting a second book, five out of eleven picked books based on their having heard plot highlights during student exchanges. Although students continued reading, they were less consistent in keeping reading logs with the second book than they were the first book. Journal entries also became shorter towards the end of the six weeks; however, one writing activity that students seemed to enjoy was the group production of book review questions. After creating the review tools, each student completed the one(s) developed for his book(s). The students thought it was great to complete student written "tests." The reading project progressed successfully; extra credit earned resulted in higher fourth six-weeks averages for all eleven students, and the books were enjoyed.

CONCLUDING OBSERVATIONS

The most important thing that has come out of this study is an increased awareness of how changes in teaching methodology and student behavior can improve students' reading habits. The eleven students completed a total of eighteen books in their leisure time. How did closely observed students do? Denny, one of my most reluctant reading project participants, completed two books. Logan, my advanced reader, also completed two books. Ann, whose perception of herself as a reader was poor, successfully completed one book. Most astonishing was Bob who proudly completed three books.

As a culminating activity, I surveyed students in order to assess their opinions of the reading project. Survey statements 1-7 (Appendix II) and statements 8-14 (Appendix III) were used to examine students' opinions of my teaching methods and changes in student behavior. Graphed survey results (Appendix IV) show 82% of the students have never participated in a similar reading project. The high percentage of students agreeing with statements 3 and 4 suggests that teachers should allow more time for in-class reading whenever possible. With 45% of the students disagreeing with statements 2 and 7, I tend to think that providing a mixture of classical literature and well-chosen young adult literature would meet the varying reading interests of ninth graders. Agreement with statement 6 was high which indicates that students are receptive to studying literary elements. The teacher simply needs to let students do more of the talking. Almost complete agreement with statement 5 reveals that the inclusion of an extra credit activity in my instruction increased my students' desire to read. I hope that some will continue to read for pleasure in their leisure time without the promise of extra credit.

Graphed results of students' responses to statements 8-14 reflect changes in student behavior/opinions as a result of the reading project. Although most agree that they read young adult literature that they would not have read otherwise, they would have preferred selecting their own titles (statements 8-11). Percentages for statements 9 and 10 reinforce my observations. Students prefer

not to write in journals. More importantly, 91% agreed with statement 12, proving that these students enjoyed reading because the reading was not followed by a test. With 100% agreement to statements 13 and 14, I can conclude that even though students had to read at home, they enjoyed themselves enough that they would read again.

IMPLICATIONS FOR FURTHER STUDY

As a teacher researcher I am always interested in investigating different methods of teaching. I am always asking myself questions about my students' needs and abilities. I think that many teenagers will read more if encouraged to do so and if books are made available. As a leisure hobby, reading must compete with television viewing and computer/video game playing. As a teacher I see the need for incorporating into my instruction reading for pleasure so that perhaps students will choose reading as one of their own leisure activities. Completing the reading project with my students enables my students to freely discuss literature without the threat of occasionally writing about their books, but what they most enjoyed were the oral activities and the self-monitored reading. I know that had a test been the culminating activity, fewer students would have enjoyed the project. Upon project completion I am challenged to develop new approaches for my literature units so that objectives are mastered and reading for enjoyment is promoted.

APPENDIX I

BURKE READING INVENTORY

1. When you are reading and you come to something you do not know, what do you do?

   Do you ever do something else?

2. Who is a good reader that you know?

3. What makes him or her a good reader?

4. Do you think that she or he ever comes to something she or he does not know when she or he reads?

5. Yes---When she or he does come to something she or he does not know, what do you think she or he does about it?

   No---Suppose that she or he does come to something that she or he does not know. Pretend what you think she or he does about it.

6. If you knew that someone was having difficulty reading, how would you help that person?

7. What would a teacher to do help that person?

8. How did you learn to read? What did you or someone else do to help you learn?

9. What would you like to do better as a reader?

10. Do you think you are a good reader? Yes No

Name_____

APPENDIX II

Please respond to the following statements by circling the number that most truly represents what you think. Remember, there are no right or wrong answers. Use the following scale for your answers.

1	2	3	4
STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

Statement 1
The reading project was unlike any other literature activity I have ever completed.
1 2 3 4

Statement 2
This paperback book reading was more entertaining that the literature textbook reading of short stories or a novel.
1 2 3 4

Statement 3
I was motivated to read the paperbacks selected for this project because I was sometimes give time in class to read.
1 2 3 4

Statement 4
I would have appreciated more time in class to do my reading.
1 2 3 4

Statement 5
I was motivated to read mostly because I knew I would receive extra credit.
1 2 3 4

Statement 6
I enjoyed hearing classmates discuss the plots of the books.
1 2 3 4

Statement 7
I liked the books that were available to read in this project.
1 2 3 4

APPENDIX III

1	2	3	4
STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE

Statement 8
I would have preferred to choose my own books for outside reading.

1 2 3 4

Statement 9
I think the class wrote often enough in their journals.

1 2 3 4

Statement 10
Stopping occasionally to write in my journal helped me to better understand the book.

1 2 3 4

Statement 11
The reading project provided me the opportunity to read young adult literature that I would not have read otherwise.

1 2 3 4

Statement 12
I enjoyed reading the paperbacks in this project because I knew I did not have to take a formal test afterwards.

1 2 3 4

Statement 13
I completed most of my reading at home.

1 2 3 4

Statement 14
I would enjoy participating in another reading project similar to this one.

1 2 3 4

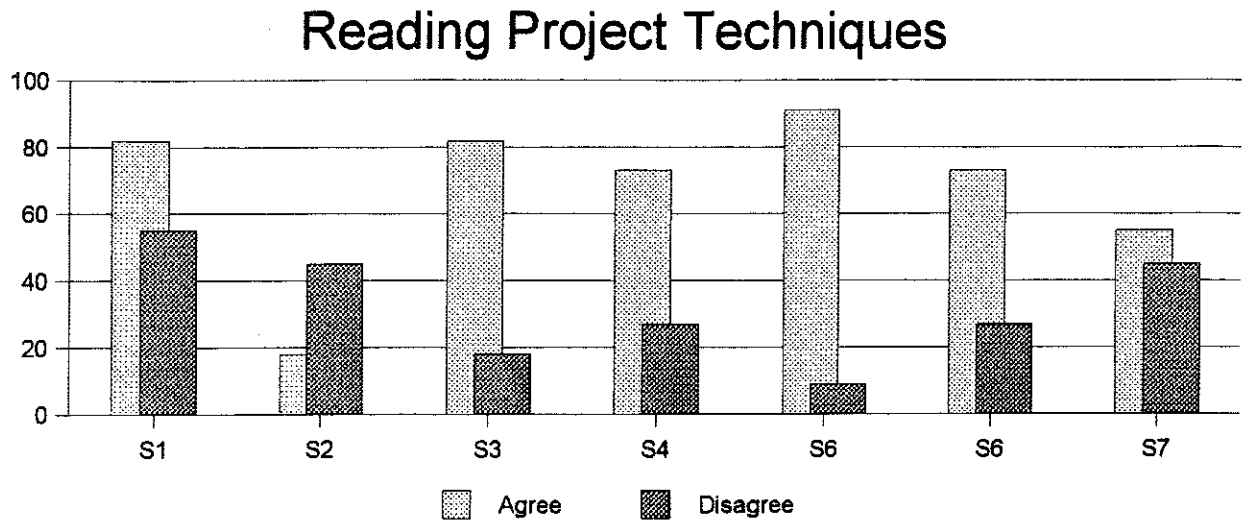

Figure 1. **Teaching Methodology** — Questions 1-7. Percentages show student responses to survey questions regarding teaching methods during the reading project.

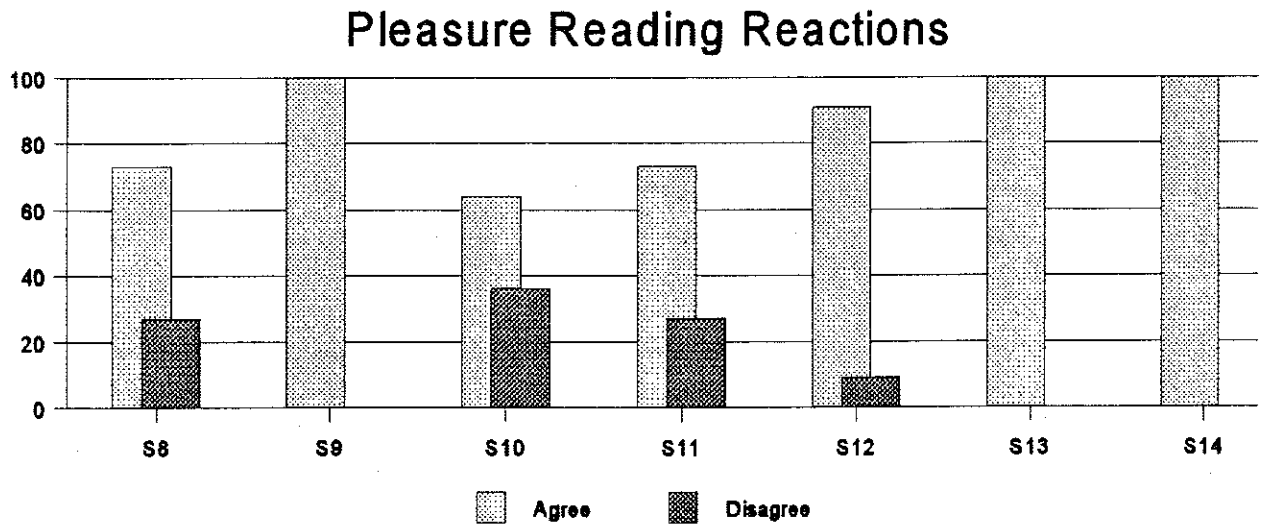

Figure 2. **Student Behavior** — Questions 8-14. Percentages show student responses to survey questions regarding student behaviors during the reading project.

STUDENT AND TEACHER SATISFACTION WITH ELECTRONIC RESOURCES VERSUS PRINTED RESOURCES IN A MIDDLE SCHOOL LIBRARY MEDIA CENTER

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April, 1995

*The views expressed in MERC publications are those of individual authors and not necessarily those of the Consortium or its members.

STUDENT AND TEACHER SATISFACTION WITH ELECTRONIC RESOURCES VERSUS PRINTED RESOURCES IN A MIDDLE SCHOOL LIBRARY MEDIA CENTER

By

Carolyn H. Leatherman, Ph.D.

In 1988 the American Library Association, American Association of School Librarians, and the Association for Educational Communications and Technology published their standards for school library media programs in the book Information Power. One of these standards specified that "The library media center collection includes instructional resources in a variety of formats with appropriate equipment selected to meet the learning needs of all students" (American Library Association, 1988, p. 82). Information Power mandated school library media centers to provide resources from outside the school by electronic means and through interlibrary loan (ALA, 1988, p. 82), as well as stating that "Full automation of library circulation, cataloging, and acquisition functions is being actively planned and implemented" (ALA, 1988, p.83). It stated that users should have access to online databases, and that these and other technological advances will become increasingly available at the local level because of the "broader learning options that these technologies make possible for the individual knowledge seeker and for groups working collaboratively" (ALA, 1988, p. 10).

In July, 1991, President Bush held the Second White House Conference on Library and Information Services (Hopkins, 1992, p. 208). One resolution passed by the delegates was the Omnibus Youth Initiative, which was designed to provide library and information services in school library media centers and public libraries to children and young adults comparable with those afforded to adults (Hopkins, 1992, p.210). One portion of this Initiative, under the School Library Services Title, stated that federal legislation

should be enacted "to design resource-based instructional activities that provide opportunities for students to explore diverse ideas and multiple sources of information" and to "establish grants to provide information technology to school library media centers" (Hopkins, 1992, p. 209). The Partnership with Libraries for Youth Title of these resolutions urged partnerships between public libraries and school library media centers to ensure full information services for children and youth, as well as a national resource-sharing network accessible by school library media centers. Charles E. Reid, Chairman of the Second White House Conference, wrote:

> This Nation stands with the world at a major crossroads. Technological advances present dramatic new information challenges created by the emergence of the Information Age. Decisions made this decade will shape the global information culture into the next century and, to a great extent, the nature of the society in which we will live.
>
> This moment presents the opportunity to build our library and information service institutions into a pathway for new ideas. It is the time to invigorate long-range planning to effect and accommodate change for a future that will combine technological success with human progress.
>
> (Information 2000, 1991, i.)

Being aware of Information Power and the Second White House Conference's mandates, in April, 1993, I presented a proposal to my public school system's School Board for an automated middle school library media center that would include a circulation system, cataloging, networked cd-rom reference resources, and a local area network that would connect every classroom with the media center. The three elementary schools and the single high school in

the system were not automated, so this proposal was made as a pilot project that might later be incorporated into the other schools if it could be made to function efficiently and effectively in the middle school.

Liking the possibilities for more efficient and effective use of resources, as well as the increased learning potential for students, the School Board accepted the proposal. The system's Financial Officer found funding for the project, and the system's Technology Coordinator and I began to make plans to implement the media center automation and the LAN it would support.

The initial equipment purchase included a fileserver, a battery backup, a monitor and keyboard for the fileserver, an eight stack cd-rom player, one administrative PC workstation, eleven student PC workstations, and three printers. None of the workstations were dummy terminals. Additional electrical service was provided for the media center to support this hardware, and wiring and connections were installed in each classroom. Later, one hub was purchased to provide the initial connections to the classrooms. Two classrooms were networked with multimedia computers by the end of calendar year 1994.

I decided to use Follett's "Circulation/Catalog Plus" as the vehicle for media center automation. The Financial Officer purchased this for current media center holdings, and included "Mitinet" for materials not cataloged by Follett. These are subscription services.

I decided to purchase several reference resource software packages for LANs to complement the media center's printed resources, to make the collection more current, and to eventually provide each classroom with current, easily accessible reference resources. The Grolier Electronic

Encyclopedia was put on the network. Microsoft Bookshelf, which includes an encyclopedia, dictionary, atlas, almanac, thesaurus, quotation books, and a chronology, was also purchased. Two magazine indexes, Proquest and Middle Search, were added, as was Ebsco's ERIC for teachers' educational research. Later, Virginia View, a careers guidance package, was also included, as was the whole school version of Accelerated Reader. More packages will be included and the ones already in place will be updated as funds become available. Word Perfect, Gradebook, and Test Generator are also under consideration for addition to the LAN.

During the 1993-1994 school year, the first year of implementation of the project and new resources, I became interested in how and why students were using the new resources. Throughout that school year and the next, I held formal lessons with language arts and other classes in how to use the new resources, and spent much time teaching groups and individual students how to find the materials they needed on the computer resources. During these lessons students appeared eager and enthusiastic to use the computers. When allowed to use the computer resources at other times than lesson times, the students often argued about whose turn it was on the computers, waited eagerly for their turn, and complained loudly when a student took more time than others thought necessary to finish a search.

I felt that I was seeing a new enthusiasm in students assigned to do reports, science fair research, and term paper research. I felt that I was noticing students using the computer resources who would have balked at doing report and term paper research in the printed sources, I felt that I was seeing students using the electronic resources first, then using the printed

resources to fill in where the electronic resources left gaps or gave no information.

Wondering whether I was really seeing a change in students' behavior when faced with a report or term paper assignment or whether I was seeing only what I wanted to see, I decided to embark upon a research project that would either verify or negate my perceptions. Therefore, I decided to informally interview and formally survey the students about their feelings and perceptions of the electronic versus the printed reference resources. I decided to interview and survey faculty members about their perceptions of student response to the electronic versus the printed reference resources, also. I decided to ask faculty members if they perceived a change in student behavior and quality of product when using electronic versus printed reference resources. I also decided to use the teacher interviews and surveys to try to ascertain teacher response to student products when using electronic versus printed materials. Therefore, my basic research question involved student and teacher perceptions: 1) do students prefer to use the computer resources, the book resources, or a mixture; 2) why do they say they prefer the resources; 3) which of the sources do the teachers prefer their students to use; 4) why do they prefer this; and 5) do the teachers perceive a change in student behavior toward research, reports, and terms papers since the LAN was implemented.

Early in 1995 I developed surveys for faculty members and students (see Appendices A and B) that would address these issues. The surveys were administered to 65 professional staff members and 951 students. 34 faculty surveys and 500 student surveys were returned.

I began the study by observing and informally interviewing students doing research for reports. Observation showed that many students immediately

went to the computers for material from the Grolier Electronic Encyclopedia. Their second choice was Bookshelf. Middle Search and Proquest were their third and fourth choices. These observations were made during and following formal lessons teaching the use of these sources to all of the students. It appeared that students were choosing the computer sources first, then using the book sources, if they used them at all. Students seemed to use the book sources first when the computer terminals were all in use or when there were problems with the computer system. I observed one student go to the World Book Encyclopedia first, find the article he wanted, look at it, close and put away the encyclopedia volume, and go to the computers. I also observed that many students who might have ordinarily balked at the idea of doing research did the work if they were allowed to use the computer resources, especially if they were allowed to use the computers to obtain all of their information. These observations seemed to hold true for all grade levels and all ability levels.

I also talked to many students, interviewing them informally about their preferences. Most said that they preferred the computer resources, and only used the book resources when the computer terminals were all occupied. Upon asking why, most students interviewed stated that they preferred the computers because they were "fun," "easy to use," and had "more information" that they could access "quicker." Even students who disliked doing reports and other research projects were willing to make the effort if allowed to use the computer resources.

Since I only had time to interview a few students, I decided to develop a survey that would allow me to get feedback from more students in a shorter amount of time. This survey form is found in Appendix A. The survey was

distributed to homeroom teachers to be administered to 346 sixth grade, 303 seventh grade, and 302 eighth grade students. Completed and partially completed survey forms were returned by 135 sixth graders, 155 seventh graders, and 210 eighth graders, for a total of 500 responses from 951 surveys distributed.

In responding to the questions asked, 163 students had a computer at home, while 342 did not: 46 sixth graders did, and 87 did not; 47 seventh graders had computers, while 115 did not; 70 eighth graders did, but 140 did not. Therefore, a majority of students did not have a computer at home.

118 sixth grade students liked to work on computers, while 15 did not. 130 seventh graders liked to work on computers, but 24 did not. 178 eighth graders enjoyed using computers, while 23 did not. Most of the student respondents, 426, did like working on computers, but 62 of the respondents did not. Students who enjoyed working on computers commented that it was "fun," "educational," "easier," "interesting," they could obtain more information, it was a "neat way of learning," it kept them doing something, they could get information more quickly, and that they would need it in the future, among other comments. Students who did not like to work on computers stated that they were "boring," "too complicated," they did not know how to use them well, and that there was no time to use them, among other things.

The survey asked students whether they preferred to use the Grolier Electronic Encyclopedia on the computer or the book encyclopedias. 97 sixth graders, 111 seventh graders, and 161 eighth graders (total 369) preferred the computer encyclopedia. 35 sixth graders, 44 seventh graders, and 40 eighth graders (total 119) preferred the book encyclopedias. Students who preferred the Grolier Electronic Encyclopedia stated that it was faster and easier to

use than the book encyclopedias, that it had more and more recent information, and that it was more fun. Students who preferred the book encyclopedias felt that they were easier to use, they had more information, and that the students could understand the book encyclopedias better. Some of these felt that the book encyclopedias were more comfortable to them than the computer encyclopedia, and that they were not yet used to the computer encyclopedia.

Students also preferred the computer Bookshelf to book resources. The Bookshelf searches eight reference resources at one time: an almanac, atlas, dictionary, encyclopedia, thesaurus, two books of quotations, and a chronology. 72 sixth graders, 105 seventh graders, and 150 eighth graders (total 327) preferred Bookshelf, while 54 sixth graders, 50 seventh graders, and 54 eighth graders (total 158) preferred the book resources. In commenting upon their preferences, students who preferred the computer resources stated that these were easier to use, faster, and more convenient than the book resources because there were fewer places to look, while students who preferred the books stated that these had more information and that they were faster and easier to use than the computer resources. Some of the students who preferred books said that they understood how to use the books better. One student commented on the computer resources by saying, "I am too lazy to look it up and you get it done faster."

Students were also queried on the computer magazine indexes Proquest and Middle Search versus the Reader's Guide To Periodical Literature. Although the computer resources were still preferred by most students (266), the preferences were not so distinct as in the first two categories, because 182 students preferred the Reader's Guide. Again, many students felt that the

computer resources were faster, easier to use, and had more information that the books. Reader's Guide devotees felt the same way about their choice.

I was surprised at the outcome of the question on whether students preferred only computer resources, only book references, or a mixture of the two. 98 preferred the computers, 45 preferred the books, but 339 preferred to use a mixture of the two. The reason most often cited for preferring to use a combination of the two resources was that neither the computer resources nor the book resources contained all of the information necessary, but that they complimented each other and students could obtain the most information possible by using both types of sources.

Students were also asked what they liked best about the computer research resources. Many students answered that they were fun, faster and easier to use, and they had more and more useful information than the reference books. The students liked the idea of being able to print out the necessary information rather than having to take notes, and they liked the fact that the information was all in one place. They did not have to search the shelves to put together information from difference sources. Students also commented on the variety of information accessible and the novelty of the computer programs.

In citing the things they liked least about the computer programs, students stated that there were not enough computers, that they did not have enough time to use the computers, and that the different programs were sometimes complicated and confusing to use because they did not all access information or exit the program in the same way. Students were not always sure of how to access the information they need because of the problems, and this cost them additional time. However, many students felt that they liked

using the computers for research work in spite of the problems they encountered.

In general, the majority of the students responding to the survey liked to use the computer reference resources, and preferred them to the book resources. The majority felt, however, that both types of resources were needed to obtain the most information possible on their research topics. Even many students who stated that they did not like to use computers felt the need to use them in order to obtain additional information for their research papers and reports. One student wrote "I think the computer research resources were a brilliant idea. It may have some faults but good qualities outnumber them by a lot."

The faculty questionnaire can be found in Appendix B. It was distributed to 65 professional staff members and returned completed or partially completed by 34. Nine sixth grade teachers, thirteen seventh, and fifteen eighth grade teachers returned the surveys and did several faculty members working with multiple grade levels; all major subject areas were represented. 21 faculty members had computers at home, but 12 did not.

In answering whether they preferred their students to use the Grolier Electronic Encyclopedia or the book encyclopedias, fifteen teachers preferred their students to use the computer encyclopedia, five preferred them to use the books, and four felt that the students needed exposure to both types of resources. Faculty reasons for preferring the computer resource included the use of technology, that it had more current information, easier and faster access to information, that students enjoyed doing research using it, and that it integrates filmstrips, movies and other visual materials with the text. One teacher only preferred the computer-based material if the students would

read the information and write it in their own words. Another commented that the students are able to find the necessary information on the computer, and many will not look in books because they are convinced that they cannot read adequately. Teachers who preferred their students to use the book resources cited such reasons as the opportunity for students to improve their literacy skills, the need to develop good relationships with books because books are more accessible, and that the book resources have more complete information.

When asked about the computer-based Bookshelf versus the book resources, twelve preferred their students to use the computer information, nine preferred the books, and five stated that their students needed exposure to both. Again, one teacher was concerned about the students reading the information and writing it in their own words. Other comments included the perception that students will use the computer sources when they will not use the books, that the computer resources are more current, they are more rapidly accessible, and that the computer resources are organized logically so that the materials are easily accessible. Faculty members who preferred their students to use the book resources stated reasons such as that this improves the students' self-responsibility skills, it improves their reading skills, the students need to apply the book skills they have been taught, and that the books have more information. In choosing between Proquest and Middle Search versus Reader's Guide, ten teachers preferred the computer resources, eight preferred the books, eight expressed no preference, and two said that students need exposure to both. Comments in favor of computer usage included that students are not intimidated by the computers, organization of the computer materials, ease of use, and fast access to information. Faculty members

preferring use of the Reader's Guide stated that this makes the students do the work and that students need to improve their reading skills. Several of the teachers were not familiar with Proquest and Middle Search.

In responding to the question of whether the faculty prefer their students to use computer sources only, book sources only, or a mixture of the two, no one recommended computer sources only, only one preferred book sources only because it makes the students responsible for getting the information, and 26 preferred a mixture. Four had no preference. Teachers advocating use of a mixture of computer and book resources commented that students need to improve their reading skills, that books should never become obsolete, that all libraries are not automated, that this shows versatility, and that students need to be competent at both. One teacher reasoned that the students know how to use the computer better than the teachers, so they should be allowed to use the computers.

All responders but one felt that student attitudes toward library research had changed since the addition of the computer research tools. Some teachers felt that the students were more willing to do research, they were more able to find the necessary material, it was more exciting for the students, the students enjoy the interaction with computers, that there were more requests to use the library, and that the computer materials were more interesting and their organization was easier to use. Several teachers expressed concerns over students turning in the material printed from the computer as their final product, that students prefer to use the computer rather than reading to find their information, and that students feel that the computer will do the job for them so that the research is easier, but that the finished project may be unsatisfactory.

The majority of the responders (19) also felt that student research reports and papers have changed since the addition of the computer research tools. Three felt they had not, and one teacher responded that he/she did not have enough data to make a valid evaluation. Comments included that students are eager to start, that students love using the computers, students are more likely to hand in papers typed on a word processor or computer, that the information accessed is more current, magazine and newspaper articles are more available, that students complete their work faster, students can get printouts to take home if they run out of time in the library, and that a higher level of materials are being utilized. Some teachers also expressed concerns over a perceived decrease in bibliographic information, more plagiarism, students wanting to submit computer printouts for their papers, a feeling that the information has been "given" to the student rather than them finding it on their own, and one felt that he/she saw less student "input" or "personalization" of the reports submitted.

Generally, the faculty members responding to the survey approved of the wide variety of materials available on the computers. They felt that these materials were up-to-date, convenient, easy to use, faster to access, and more available to students. They liked the use of technology to assist students in learning and the "hands-on" computer experience. They commented that the students become more involved in finding material and related material, and that that adds a new dimension to the research projects. However, teachers also said that there was not enough hardware available, not enough library time for student computer use, that students need to be taught that computers are a <u>tool</u> for learning, that students paraphrase more if they take notes, students neglect the books and only want to use the computers for research,

that too much information is confusing to the students, and that students think that the computers should have all of the answers. Some teachers also expressed the opinions that computers need to be placed in the classrooms, that teachers need computers of their own for administrative tasks, that teachers need more time to learn to work on the computers, and that they do not know enough about them.

In general, teachers appeared to have mixed feelings about the on-line computer research materials versus book sources. They felt that the computer sources motivated students to do research, that they were faster, easier, and more convenient to use, but that students must not lose their ability to use the book sources. Therefore, a mixture of sources was preferable to the teachers. They noted good things about student computer usage, but they also expressed many concerns over it. As one teacher wrote, "I think technology is great and the more we have access to, the brighter we may become. However, I do not like seeing generations grow up who can not do things the 'long' or the independent way, I'm not so sure one area of the mind doesn't regress as others are expanded."

Several observations may be made as a result of this study. The computer resource materials appear to motivate many students to do research work and to learn independently. However, more hardware is needed both in the media center and in classrooms, as is more time for students to work on the computers. The students need more formal and informal lessons in using the computers, and they need more time to practice these skills. Students need to be taught that computers are only a tool for learning and how to use the material they have accessed more effectively. Teachers need to be taught how to use the computer system before it is placed in their rooms. They must have

access to hardware and to administrative programs that will aid them in their daily work. They need to be given time to become as comfortable with computer usage as are their students.

APPENDIX I

COMPUTER REFERENCE RESOURCE
STUDENT QUESTIONNAIRE

Check which one of these applies to you:

Male _____ Female _____

Grade 6 _____ 7 _____ 8 _____

_____ is your language arts teacher.

Do you have a computer at home? Yes _____ No _____
What kind?

Do you like to work on computers? Yes _____ No _____
Why or why not?

When you are doing research in the library, which of these do you prefer to use? Check one.

_____ computer encyclopedia
_____ book encyclopedia

Why?

When you are doing research in the library, which of these do you prefer to use? Check one.

_____ computer Bookshelf
_____ book dictionary, atlas, almanac, thesaurus, quotation book, chronology, etc.

Why?

When you are doing research in the library, which of these do you prefer to use? Check one.

_____ Proquest and/or Middle Search magazine indexes
_____ book Reader's Guide magazine index

Why?

When you are doing research in the library, which of these do you prefer to use? Check one.

_____ computer sources only
_____ book sources only
_____ a mixture of computer and book sources

Why?

What do you like best about the library's computer research resources?

Why?

What do you like least about the library's computer research resources?

Why?

Comments:

APPENDIX II
COMPUTER RESEARCH RESOURCES
TEACHER QUESTIONNAIRE

Male _____ Female _____

Grade level taught 6 _____ 7 _____ 8 _____

Subject taught _____

Do you have a computer at home? Yes _____ No _____
What kind?

Do you access Virginia Pen or other databases?
Yes _____ No _____

If so, which ones?

When your students are doing library research, which of these do you prefer them to use? Check one.

_____ computer encyclopedia
_____ book encyclopedia

Why?

When your students are doing library research, which of these do you prefer them to use? Check one.

_____ computer Bookshelf
_____ book dictionary, atlas, almanac, thesaurus, quotation book, chronology, etc.

Why?

When your students are doing library research, which of these do you prefer them to use? Check one.

_____ Proquest and/or Middle Search magazine indexes
_____ book Reader's Guide magazine index

Why?

When your students are doing library research, which of these do you prefer them to use? Check one.

_____ computer resources only
_____ book resources only
_____ a mixture of computer research resources and book sources

Why?

Do you feel that student attitudes toward library research have changed in any way since the addition of the computer research tools?

_____ Yes _____ No

If so, in what way do you feel the attitudes have changed?

Do you feel that student research reports and papers have changed in any way since the addition of the computer research tools?

_____ Yes _____ No

If so, in what way do you feel these products have changed?

What do you like best about the library's computer reference resources?

Why?

What do you like least?

Why?

Comments:

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WHAT ARE THE FACTORS THAT AFFECT A SUCCESSFUL INCLUSION PROGRAM?

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What Are the Factors That Affect a Successful Inclusion Program?

Inclusion. The word strikes fear in the hearts of regular education teachers. After years of having special education students pulled out of the classroom and taught in separate classroom, here comes a new fad that is going to bring these students and their disabilities back into the regular classrooms. But is it only a fad? This research was designed to probe the effectiveness of one inclusion model and to determine what factor can determine the success of the program for the students and teachers.

My school, Powhatan Elementary School, adopted a full inclusion program in the 1994-5 school year. In this program each of the five special education teachers were responsible for certain grade levels. One special education teacher and instructional aide was assigned to each of the grade levels from kindergarten through the third grade with one special education teacher being responsible for the overload in the second and third grades. The special education teachers worked within the regular classrooms with the special education students and also with the regular education students in a collaborative teaching model. A few special education students were pulled out of the regular classroom for short amounts of time to a learning lab where distractions were minimal. All special education students, the learning disabled, developmentally delayed, the educable mentally handicapped, the emotionally disturbed, and the other health impaired, participated in inclusion. Ten out of twelve regular education teachers volunteered to participate in the inclusion model. At the beginning of the school year all of the special education students were in these twelve classrooms. The most special education students that were in one classroom at that time was six. The class sizes did not exceed 25 students in all.

In the beginning of the school year there were forty-six special education students in a school population of about 1,050 kindergarten through third grade students.

In order to conduct this research the following techniques were used: questionnaires given to parent, regular education teachers, and special education teachers. Three sociograms were completed on one second grade classroom of twenty-four students that included seven special education students.

The sociograms consisted of three different questions to each student individually. The purpose of the sociograms was to determine how well the special education students were integrated into the social and academic life of the class. The following questions were used. Who are the three people you like to play with the most? Who are the three best readers in the class? Which three people would you most like to work with on a project?

In choosing the three people whom they liked to play with the most, by the third choice all of the students in the class were chosen by someone. In the first choice there were nine students who were isolates or who were not chosen by anyone. Three out of the nine or 33% of these isolates were special education students. Notice also, that two special education students chose each other. These two had developed a close friendship from the previous two years of self-contained classes in special education. By the second choice all of the special education students had been selected by someone. By the third choice, two special education students are stars or chosen by the largest number of students, 66% of the stars are special education students! It is clear from this sociogram that the special education students are a vital part of the class and well

entrenched in the social network. The disabilities are irrelevant to this level. In the questionnaires, parents and teachers also noted the positive social benefits to the special education students.

The students chose the best readers carefully. The answers are most interesting. Almost 50% (eleven out of twenty-four) chose themselves as one of the three best readers in the class! No lack of self-esteem here!! On the first choice there seems to be a consensus about the best readers in the classroom. 75% of the students chose one of four students, all of whom are very good readers. Fourteen students were isolates at this stage, 2/7 of these were special education students. By the second choice the number of isolates is down to eight and 1/2 of these are special education students. When the third choice was made the number of isolates was five and 3/5 of these are special education students. Of these three students, two are actually reading on grade level but their oral reading is slow and halting.

The special education student T.B. was chosen by three students as one of the best readers in the class. He has a myriad of educational and physical disabilities as well as a borderline IQ. At the beginning of the school year, he recognized about twenty words. After about six weeks of an intensive reading program he had a remarkable breakthrough that excited the whole class. One morning he randomly picked up a book and began reading. After reading two pages he looked up with wide excited eyes and exclaimed, "I can read! I can read! Just like everybody else!" He spent the day visiting teachers and principals reading to them. When he returned from the principals office with a special certificate he proudly showed it to the class and they watched him trace

the letters on the certificate with his fingers, obviously awed by his new ability, as we all were. The teacher asked him to read his book to the class. They listened to him read without making a sound and when he finished they spontaneously applauded! Since then whenever he reads in front of the class they applaud and tell him "Good job!" They have been every bit as proud of his success as he has been. His reading ability has increased two grade levels and his self-esteem is sky high. His enthusiasm for reading has been infectious and while he is far from the best reader in the class, he is the most improved student and I believe the credit goes to the regular classroom teacher and to the students for providing the motivation for his continued success. That he is perceived and perceives himself as one of the three best readers in the class is a tribute by the students in recognizing that reading ability cannot always be determined by objective testing and that desire and enthusiasm are also very important components to reading.

The first choice for the people to work with on a project left seven students as isolates, two of whom were special education students. By the second choice 1/4 of the isolates was a special education student. This student does have problems in working in a group and he was still left as an isolate by the third choice. In looking at the special education students who were chosen by two or more students, two of these students are not able to contribute much academically, but are still seen as valuable members of the group. Isn't this what we want for all of society? We all want to be in a place where we are appreciated for the gifts that we can bring, whether or not we are the brightest or the most articulate. This classroom mirrors the best of all possible worlds. It is a place where each person has peer friendships, where the best readers are

recognized for academic standards as well as for academic improvement and enthusiasm, and where students are sought out to participate in groups regardless of what type of gifts that person has. This particular classroom definitely has a nurturing environment that has allowed the special education students to succeed beyond the expectations of parents and teachers. The regular education teacher has intentionally created this environment for these fortunate students.

These questions were illuminating in that they showed that the students perceive varying abilities among themselves that are not always true to reality. Even though there are various levels of academic and social skills in this class, the students have not formed cliques nor isolated the special education students. One aspect of inclusion - the social integration of all students into the regular life of the school - is shown to be a success based on the results of the sociograms.

The results of the parent surveys show that the parents are overall pleased with the results of the inclusion program. 5/8 note "some to great improvement" in self-esteem, although 1/4 of the parents stated that their child still felt left out and made negative comments about himself. Thirteen out of sixteen parents noted "some to great" academic improvements. 3/4 of the parents want their child in an inclusive setting next year. The major problems noted by the parents were: (1) their child was being teased, (2) the inability of their child to understand the lessons, and (3) the inability of their child to concentrate in a regular classroom. The top three positive aspects of inclusion from the parents' point of view were: (1) learning to read, (2) improved social skills, and (3) improved self-esteem.

The teacher surveys pointed out some weaknesses of our program as well as affirmed the successes. All of the teachers agreed with the basic philosophy of inclusion while feeling that they needed more training in curriculum development and behavior modification techniques. They all noticed definite improvements in social with fewer teachers seeing great academic improvements. Even with the increased social skills, the teachers felt that students with severe behavior problems required too much of their attention and could best be served in another setting. Regular education teachers felt that the maximum number of special education students placed in an regular class should not exceed six and should be much less when sever behavior and/or learning problems are present. Problems became evident in the program when the special education staff began to have scheduling difficulties due to an increased case load, as the year progressed and students in other classrooms were found eligible for special education. Success, in their opinion, is directly related to the amount of time the special education teacher is able to spend in the regular classroom with the special education students.

The surveys of the special education teachers reinforced the findings of increased self-esteem and academic abilities among the special education students. The students for whom inclusion may not be appropriate are those with chronic, severe behavior problems and those highly distractible students. The special education teachers felt that the five most important characteristics in the regular education teachers that will foster success in inclusion are: commitment to inclusion, willingness to try different teaching methods, ability to operate a structured classroom, conscientiously works to maintain a caring and warm classroom environment, and is open to different grading methods.

What have been the conclusions from this study that will effect our inclusion program? First of all, the program will continue next year. The academic and social gains for 96% of the special education students definitely warrant a continuation of the program. But what about the severe behavior problems? These students happened to be labeled emotionally disturbed, but not all of the ED students have exhibited significant behavior problems. Because it is important for students with behavior problems to have good role models and to feel a part of a group, it is crucial for them to be in a regular classroom as much as possible so they, too, will continue to be a part of the inclusion program. However, to answer the need of full time support by the special education staff, we instituted a learning lab that is manned by one of the special education teachers or an instructional aide for all but fifteen minutes of the school day. Any teacher with a special education student may send a special education student to the learning lab to complete work, to cool off, or as an award (ie. to work on the computer). This, in effect, gives every regular classroom teacher with a special education student access to the special education staff all day. We have also, seen the need to carefully select the regular education teachers to insure that there is a warm, caring environment purposely created in which students are encouraged to reach their potential, as well as allowing space for the students that alleviates pressure instead of creating more stress for these fragile students.

Inevitable there will be students who will not be able to make it in a regular classroom for any part of the day because of very severe emotional disabilities. When schools face this dilemma there are several choices: (1) send them to an outside placement which is expensive and may not be the least restrictive

environment for the students, but it solves the immediate problem, (2) have all of the emotionally disturbed students served in a self-contained pull-out program which may answer the need for the most severely disabled, but also pulls out the ED students who would benefit from an inclusive setting, (3) have a self-contained pull-out program for the most severely disabled students which would isolate them to an extreme degree and not allow them any interaction with good role models, and (4) have adequate special education staff that can serve extreme cases, on a partial pull-out basis if needed, without slighting the hours served to the other special education students and regular education teachers. It is just as wrong to say every special education student with behavior problems belongs in a self-contained pull-out program as it is to say every ED student needs to be in an inclusive setting. Special education is committed to serving a student based on his or hers individual needs and school systems need to have programs in place for each student that will best serve that particular student's needs. For inclusion to succeed, the school systems must be willing to make the financial commitment for adequate staffing. It is cheaper to hire another teacher and aide than it is to send a student for outside placement. On paper it may look as if the special education department if over staffed, but in reality, in an inclusive school system, the staff will be serving the students where they can best succeed.

After seeing the academic and social progress of the special education students participating in inclusion versus. a self-contained pull-out program, I will recommend that all special education students spend as much time as possible in a regular classroom and will attempt to plan a program that will give the students and teachers the support they need in order for learning to take place and a

healthy classroom environment to exist. Inclusion should not be taken on without adequate administrative and teacher support as well as an extreme amount of planning. Based on this research, inclusion should be the direction that special education moves toward in order to provide the best academic and social environment for most of our students.

Melba J. Whitaker
Special Education Teacher
Powhatan Elementary School

APPENDICES

Parent Survey

We are asking parents of special education students to complete this survey in order for us to evaluate our special education program and to plan for next year. This year all of our students have spent a large part of the day in regular classrooms with academic reinforcement from a special education teacher. Sometimes this is done completely within a regular classroom and sometimes the students are pulled out and taught in a learning lab where the distractions are minimal. Please answer these questions and return the survey to the school office within a week. There is no need to sign this or identify yourself. Thank you for your time. Melba Whitaker, Special Education Teacher

1. My child has benefitted socially from being in a regular classroom and his/her self-esteem has improved. Circle the number that best describes your feelings.

1	2	3	4	5
Feels left out and expresses negative things about him/herself	Copes with "being different"	Undecided	Some Improvement	A definite improvement with new friends and a better attitude

2. My child has benefitted academically from participating in a regular classroom. Circle the number that best describes your feelings.

1	2	3	4	5
No benefits, no remediation	Not up to my expectations	Undecided	Some academic improvement	Great improvements, Exceeded my expectations

3. I feel the regular education teacher has worked well with my child and provided a positive classroom environment.

YES NO

4. I feel the special education teacher has been able to spend an adequate amount of time with my child, providing extra help as needed in all academic subjects.

YES NO

5. What has been the major problem that you have had to deal with at home that stems from your child being in a regular classroom environment?

6. What has been the most positive aspect of your child's school year that stems from him/her being in a regular classroom environment?

7. I would like for my child to continue to be in a regular classroom and served by the special education within that classroom and would recommend this to other parents. Circle the number that best expresses your feelings.

1	2	3	4	5
No, I would prefer my child to be pulled out of the regular classroom to be taught.	Catch my child up academically and then put him in a regular classroom.	Undecided	Yes, if he/she has the right classroom teacher.	Yes, the social and academic benefits are enormous.

Please feel free to put any other comments on the back of this paper.

Teacher Survey

Please answer the following questions. Return the survey to my box within one week. Do not sign your name, this is a completely anonymous survey. The information from this will be used in a class that I am taking and will also help us in planning a more effective program in the future. Answer the questions according to the majority of your students. Individual problems or successes can be addressed at the end of the survey. Thank you for your time. Melba Whitaker

1. I agree with the basic philosophy of inclusion: that special education students can have a higher degree of academic success by being in a regular classroom where he/she is exposed to good role models and is able to participate in regular classroom activities, with the support of a special education teacher.

1	2	3	4	5
strongly disagree	disagree with reservations	undecided	agree with reservations	strongly agree

2. I have adequate training in adapting curriculum and/or classroom activities for special needs students.

YES NO

3. I have adequate training in behavior modification techniques to deal with the behavior problems of the special needs students.

YES NO

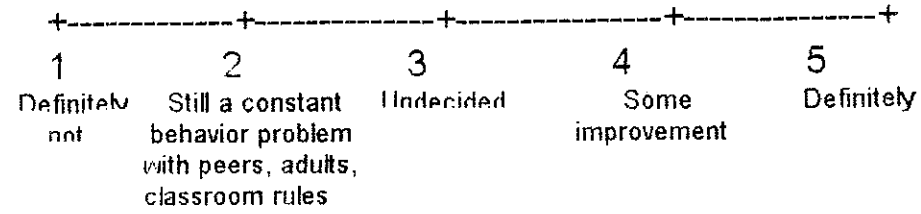
4. I have adequate professional support from the special education staff.

YES NO

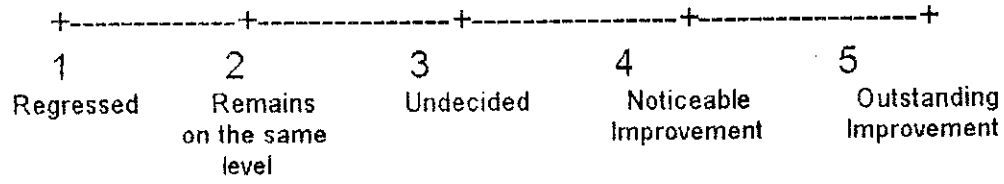
5. I have adequate professional support from the administration of the school.

YES NO

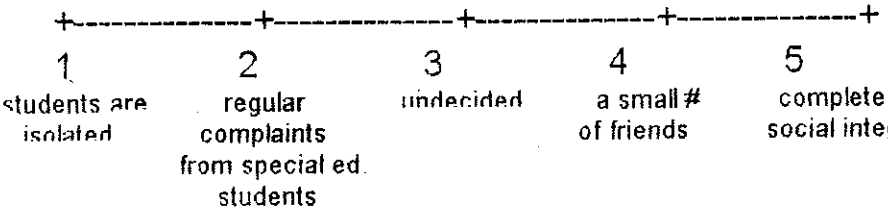
6. The special education students that I have had in my class this year have benefitted socially by being in an inclusion class.



7. The special education students that I have had in my class this year have benefitted academically by being in an inclusion class.



8. The regular education students in my class have accepted the special education students without teasing or ostracism.



9. What is the optimum number of special education students that should be placed in a regular classroom with support from the special education staff? _____

How many special education students do you have this year? _____

10. Have you had any parents (regular education or special education parents) express concern about inclusion and the effects that it will have on the education of their child?_____

_____

Have their concerns been alleviated during the school year? _____

11. What have been the key to the success or lack of success of the inclusion model that you have participated in this year?

12. How has participating in an inclusion classroom changed you professionally?

13. I would participate again and recommend inclusion to other teachers and parents.

1	2	3	4	5
NO	I would not participate and would recommend it only for certain teachers and students	Undecided	Yes, it I can select the teacher and students that I would work with.	YES

14. If you have any additional information that you would like to share, please feel free to do so on the back of this page.

Special Education Teacher Inclusion

Please fill out this survey. The results will be used for a class that I'm taking. They will also help us plan for a better program next year. Answer for the majority of your students. Address individual problems or concerns on the back of the survey. Do not sign the survey. Return it to my box within the next week. Thank you for you time and trouble. Melba

1. My special education students have benefitted socially from being in an inclusion class.

1	2	3	4	5
No change in behavior and following classroom rules	A daily challenge to keep on track	Undecided	Conforms to rules but still has relational difficulties	Greatly improved self-esteem and good relation-ships w/peers and adults

2. My special education students have benefitted academically from being in an inclusion class.

1	2	3	4	5
Lost ground in 1 or more subjects	Held his own	Undecided	Modest improvement	Improved one or more grade levels in one or more subjects

3. I have been satisfied with the way the regular education teachers have treated my students.

YES NO

If no, please explain. _____

_____

4. I have been satisfied with the way the regular education teachers have treated me as a professional.

YES NO

If no, please explain. _____

_____

5. Have you had any regular ed. or special ed. parents express concerns about inclusion?

YES NO

Have their negative feelings become positive as a result of the success of their child during the school year?

YES NO

6. After working with this model, do you feel that there are any students for whom inclusion is not appropriate?

YES NO

If yes, please describe the type of student that might be served best in another special education model.

_____

_____

_____

_____

7. After working with regular education teachers in this model, select from the following characteristics the five most important characteristics that a regular education teacher should have to make inclusion work best. 1 will be the most important and go down to 5 as the least important of the ones you chose.

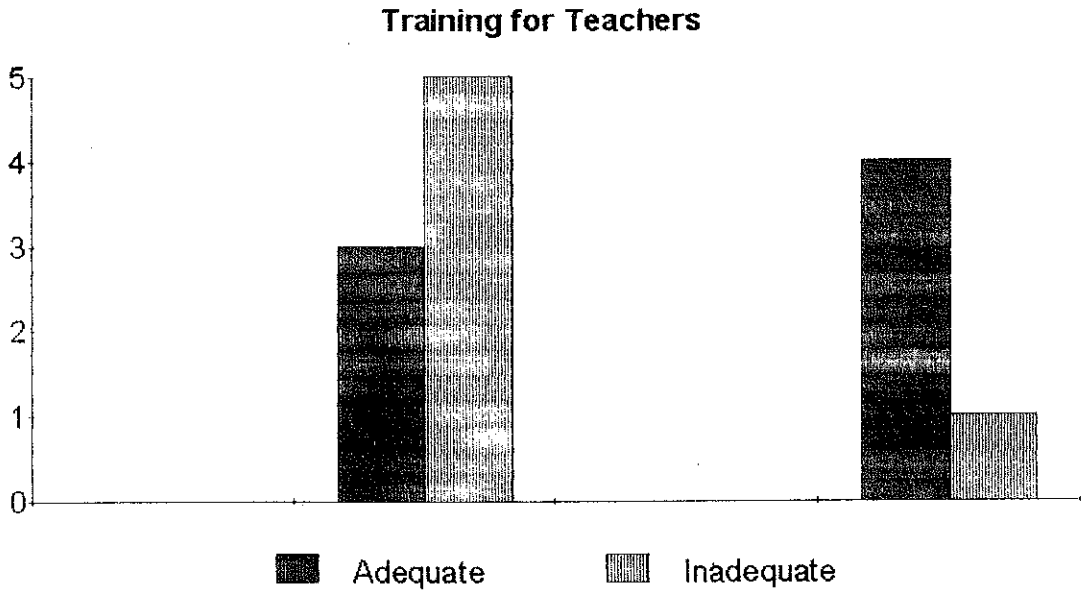
_____ patience
_____ flexibility
_____ enthusiasm for teaching
_____ commitment to inclusion
_____ willing to set aside time for planning
_____ sense of humor
_____ willingness to try different teaching methods
_____ creativity
_____ communicates plans and needs in a timely professional manner
_____ good disciplinarian
_____ operates a structured classroom
_____ conscientiously works to maintain a caring, warm classroom environment
_____ sensitive to your (spec. ed. teacher) needs and teaching methods
_____ pleasant to be around in the classroom
_____ open to various teaching and grading methods
_____ participates in training events
_____ other _____

8. Please feel free to write about any concerns or ideas that have worked well for you this year or that will help next year.

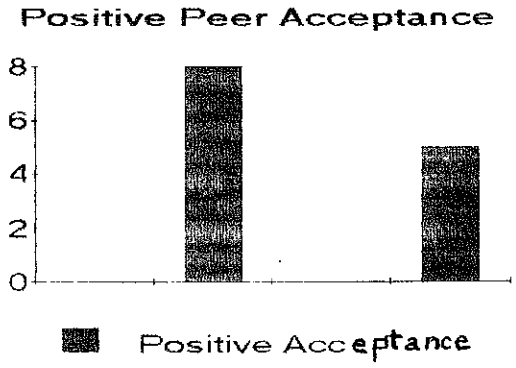
Survey Results

	Reg. Ed. Teachers	Sp. Ed. Teachers	Parents
Agree Philosophy	8	5	14
Adequate Training	3	3	NA
Not adequate Training	5	2	NA
Socially beneficial	8	5	11
Not socially beneficial	0	0	6
Academically beneficial	6	4	15
Not academically beneficial	1	1	3
Positive peer acceptance	8	5	13
Recommend inclusion	7	5	14
Not recommend inclusion	1	0	4

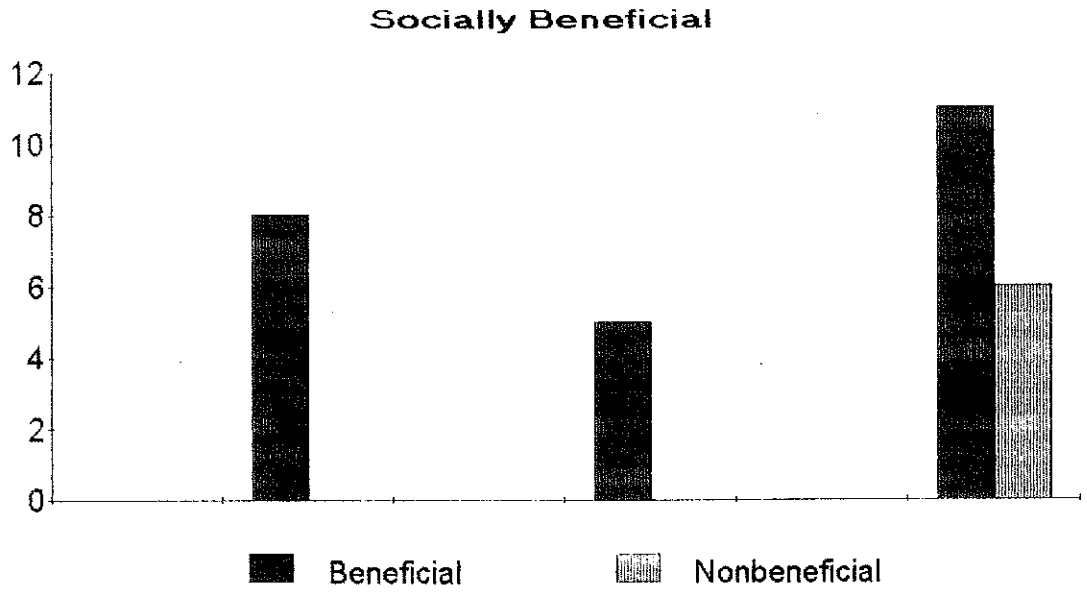
This first chart illustrates the answers that regular education and special education teachers gave to the question concerning whether or not the regular education teachers felt that they received adequate training in curriculum modifications and behavior modification techniques before and during the first year of their participation in an inclusion classroom. The first two bars represent the regular education teachers' responses and the second two bars represent the special education teachers' responses.

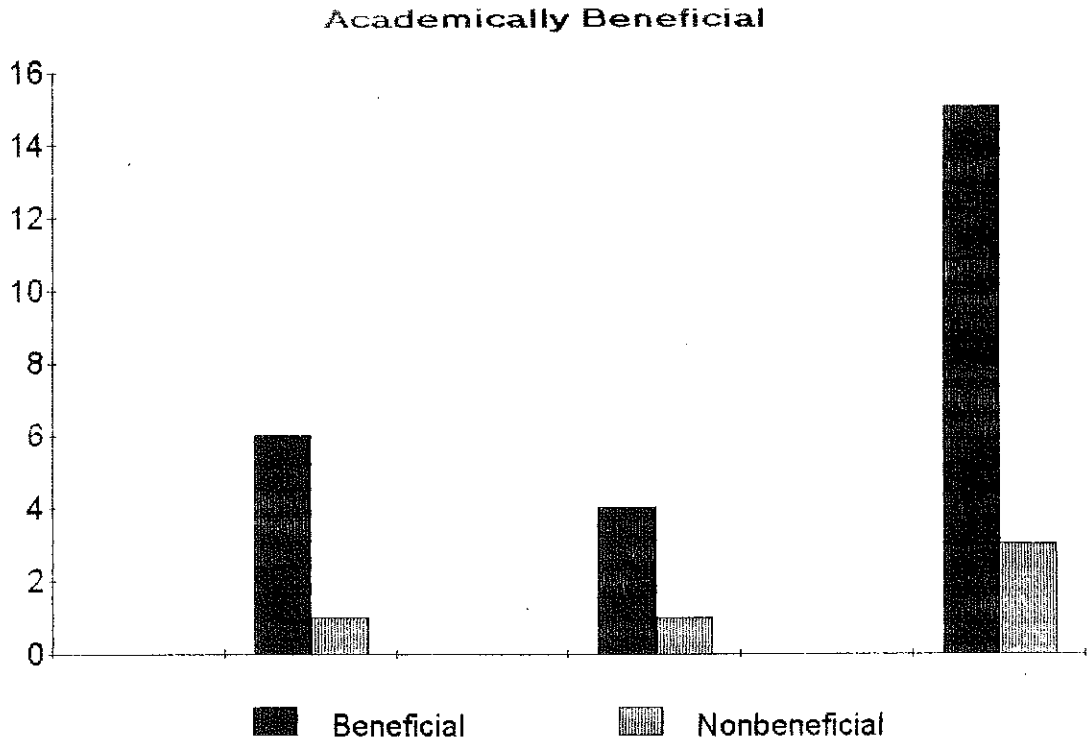


This graph illustrates the answers given to the question about the acceptance of the special education students by their peers within an inclusion classroom. The first bar shows how many regular education teachers observed this peer acceptance within the inclusion classroom and the second bar shows the number of special education teachers who made this observation.

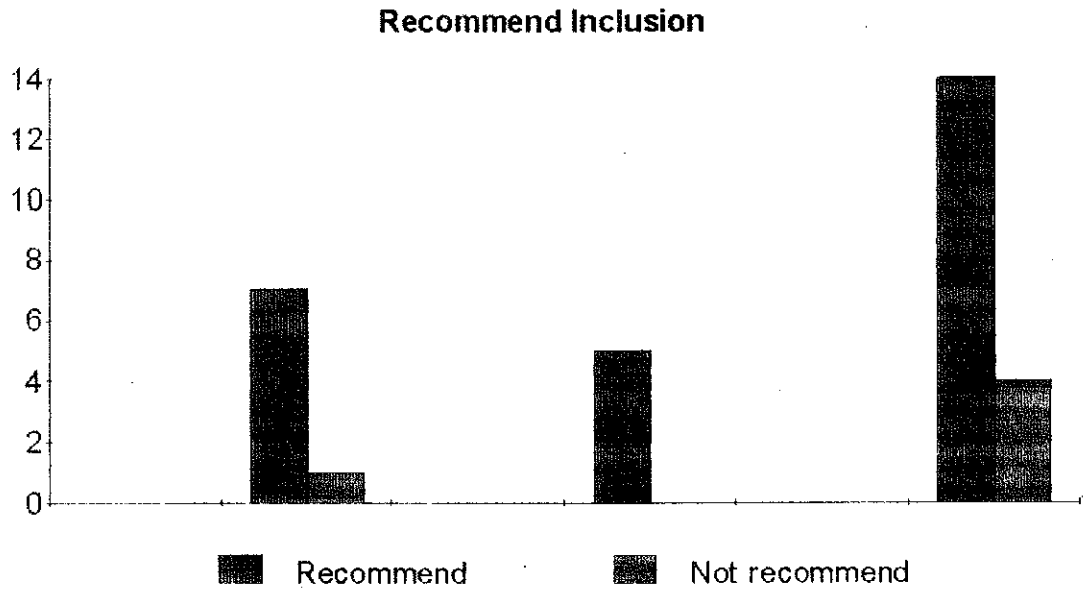


These two graphs illustrate how all of the groups of people questioned felt about the social and academic benefits of inclusion to the special education students. The first two bars present the views of the regular education teachers, the second two bars present the views of the special education teachers, and the last two bars reveal the views of the parents.



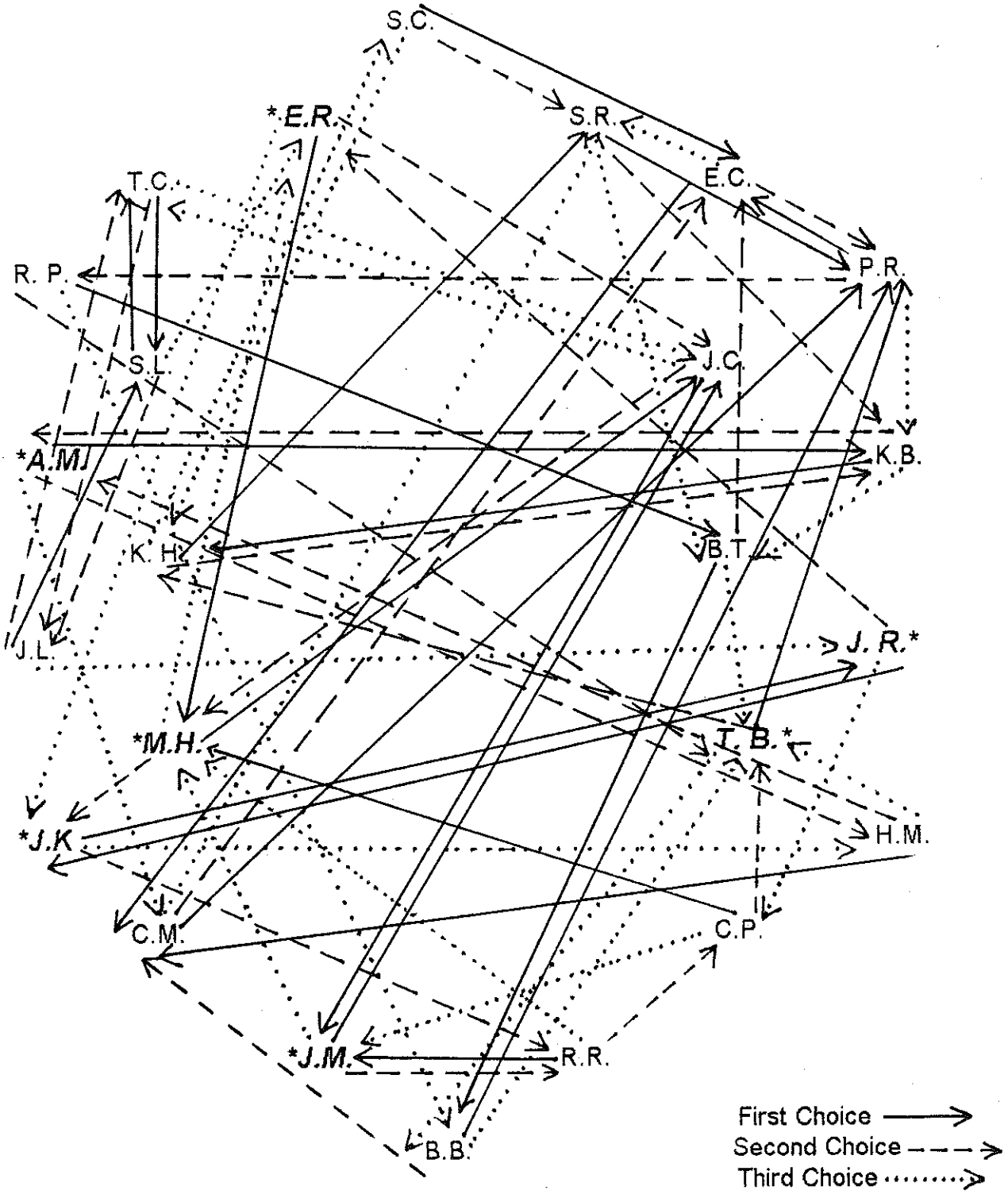

Academically Beneficial
16
14
12
10
8
6
4
2
0
Beneficial
Nonbeneficial

This graph illustrates the answers given by regular education teachers, special education teachers, and parents to the question on whether or not they would recommend inclusion for their students/child next year or to another parent of a special education child. The first two bars represents the regular education teachers, the second two bars represents the special education teachers, and the last two bars represent the parents.



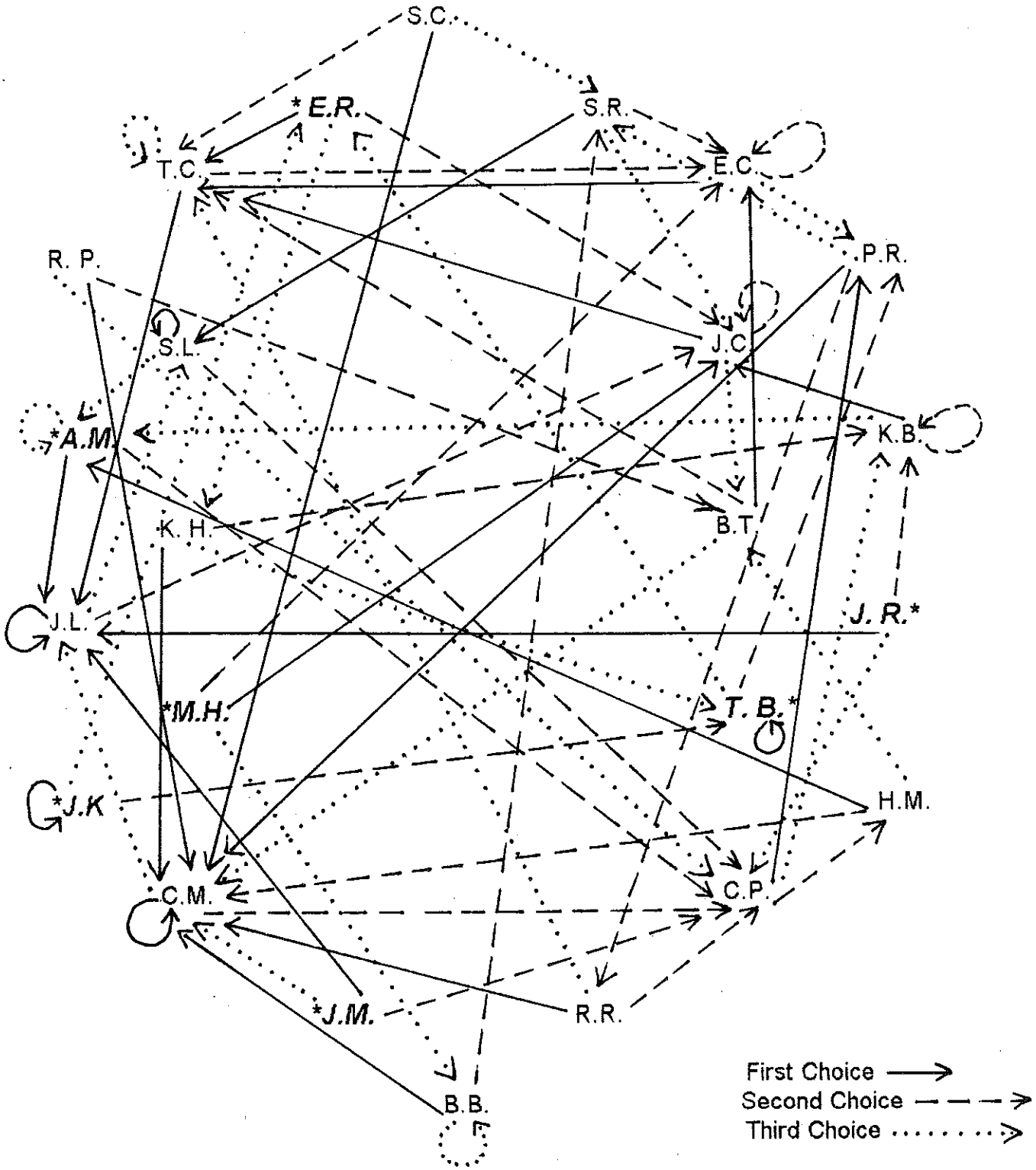
Students answer the question: With which three people do you like to play with the most?

Initials = special education students



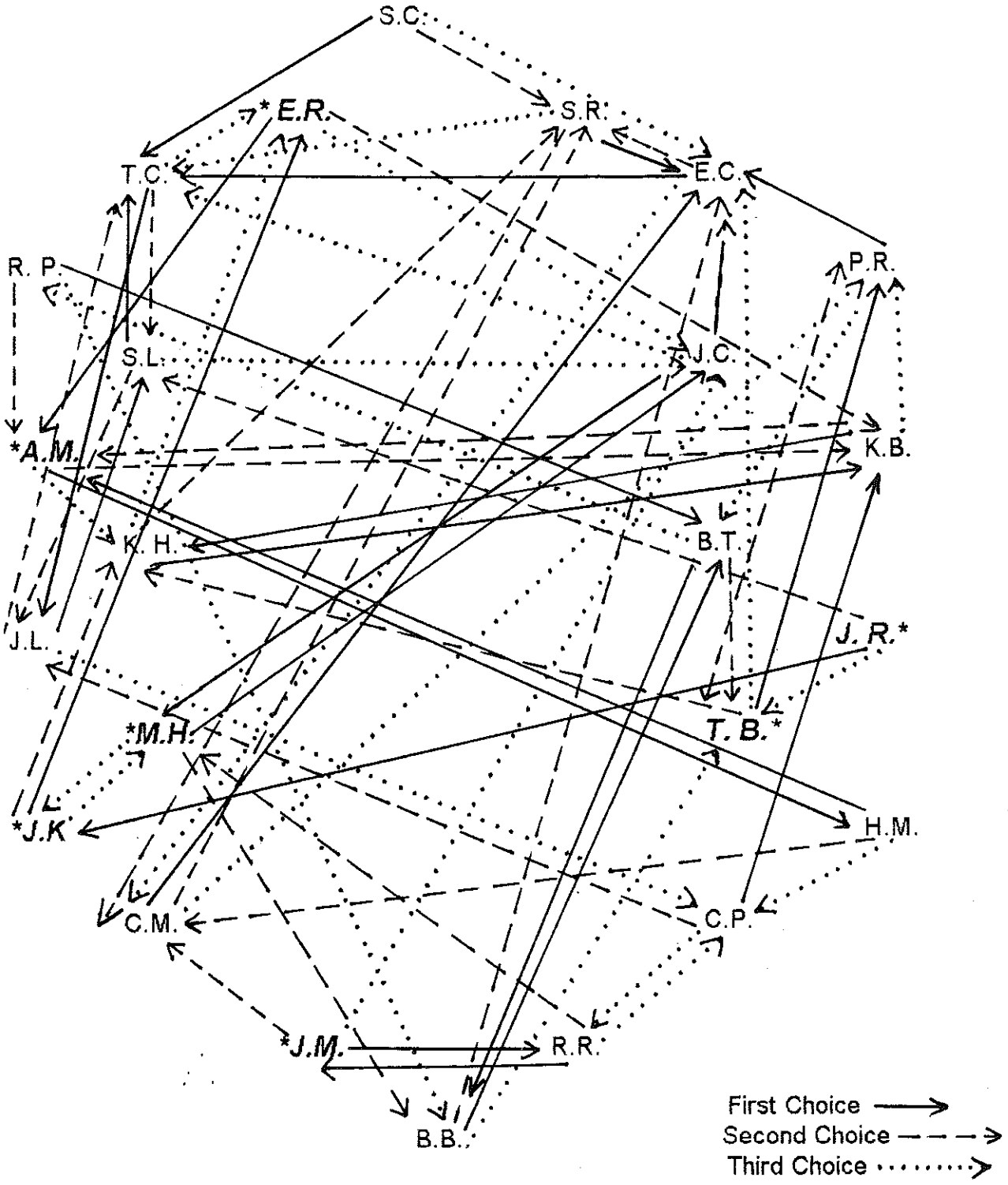
Students answer the question: Who are the three best readers in the class?

***Initials** = special education students



Students answer the question: Which three people would you like to work with on a project?

Initials = special education students



Results of the Sociogram

Question:Which three people do you like to play with the most?

***Special Education Students**

Results from first choice only

Isolates (not chosen by anyone)

S.C.
J. L.
R.P.
R.R.
C.P.
***E.R.**
***T.B.**
***A.M.**
H.M.

Chose Each Other

J.C. and ***J.M.**
***J.K.** and ***J.R.**
T.C. and S. L.

Stars (chosen by more than 4 students)

P. R. - 4

Mid-Range (chosen by 2-3 students)

S. L. - 2
***M.H.** - 2
C.M. - 2
***J.M.** - 2
J. C. - 2
E. C. - 2

Low Range
(chosen by 1 student)

T. C.
K.H.
***J. K.**
B.B.
B.T.
K.B.
S.R.

Results of the Sociogram

Question:Which three people do you like to play with the most?

***Special Education Students**

Results from first and second choice only

Isolates (not chosen by anyone)

S.C.

Chose Each Other

J.C. and ***J.M.**
***J.K.** and ***J.R.**
T.C. and S. L.
***J.M.** and R. R.
C.M. and E.C.
***M.H.** and J.C.
K.H. and K.B.
***A.M.** and K.B.
S.L. and J. L.
E.C. and P.R.

Stars (chosen by more than 4 students)

P. R. - 5
E.C. - 4

Mid-Range (chosen by 2-3 students)

S. L. - 2
***M. H.** - 3
C. M. - 3
***J.M.** - 2
J. C. - 3
T. C. - 2
***A.M.** - 2
S. R. - 2
K.B. - 2
***T.B.** - 2
R. R. - 2
***J. K.** - 2
J. L. - 2
K.H. - 2

Low Range
(chosen by 1 student)

R.P.
B.B.
***E.R.**
C.P.
B.T.
H.M.
***J.R.**

Results of the Sociogram

Question:Which three people do you like to play with the most?

***Special Education Students**

Results from three choices

Isolates (not chosen by anyone)

Stars (chosen by more than 4 students)

***T.B.** - 5
***M.H.** - 5
P.R. - 5

Mid-Range (chosen by 3-4 students)

***E.R.** - 3
C.M. - 4
***J.M.** -3
J.C. - 4
T.C. - 3
K.H. - 3
***J.K.** - 3
K.B. - 4
S.R. - 4
E.C. - 4

Low Range (chosen by 1 or 2 students)

S.C. - 1
***J.R.** - 2
R.P. - 1
B.B. - 2
B. T. - 2
H.M. - 2
S.L. - 2
J. L. - 2
C. P. - 2
R .R. - 2

Chose Each Other

J.C. and ***J.M.**
***J.K.** and ***J.R.**
P.R. and ***T.B.**
T.C. and S. L.
***J.M.** and R. R.
C.M. and E.C.
***M.H.** and J.C.
K.H. and K.B.
***A.M.** and K.B.
S.L. and J. L.
E.C. and P.R.
S.C. and K.H.
T.C. and J. L.
T.C. and J.C.

Results of the Sociogram

Question:Which three people would you like to work with on a project?

***Special Education Students**

Results from first choice only

Isolates (not chosen by anyone)

S.C.
***J.R.**
R.P.
C.P.
S.R.
***T.B.**
C.M.

Chose Each Other

K.H. and K.B.
***M.H.** and J.C.
***A.M.** and H.M.

Stars (chosen by more than 2 students)

T.C. - 3
E.C. - 3

Mid-Range (chosen by 2 students)

K.B. - 2
***A.M.** - 2
B.T. - 2

Low Range (chosen by 1 student)

R.R. - 1
H.M. - 1
***E.R.** - 1
P.R. - 1
***J.M.** - 1
J.C. - 1
B.B. - 1
S.L. - 1
K.H. - 1
J.L. - 1
***M.H.** -1
***J.K.** - 1

Results of the Sociogram

Question:Which three people would you like to work with on a project?

***Special Education Students**

Results from first and second choices only

Isolates (not chosen by anyone)

S.C.
***J.R.**
R.P.
C.P.

Chose Each Other

K.H. and K.B.
***M.H.** and J.C.
***A.M.** and H.M.

Stars (chosen by more than 3 students)

T.C. - 4
E.C. - 5
***A.M.** - 4
K.B. - 4
S.R. - 4

Mid-Range (chosen by 2-3 students)

K.H. - 3
J. L. - 3
***T.B.** - 2
S.L. - 3
***M.H.** - 2
***J.K.** - 2
B.T. - 2
C.M.. - 4

Low Range
(chosen by 1 student)

R.R.
***E.R.**
P.R.
***J.M.**
J.C.
B.B.
H.M.

Results of the Sociogram

Question:Which three people would you like to work with on a project?

***Special Education Students**

Results from three choices

Isolates (not chosen by anyone)

S.C.
***J.R.**

Chose Each Other

K.H. and K.B.
***M.H.** and J.C.
***A.M.** and H.M.
T.C. and J.L. and S.L.
K.B. and ***A.M.**
***J.K.** and ***M.H.**
J.L. and C.P.
E.C. and S.R.
B.B. and B.T
P.R. and ***T.B.**

Stars (chosen by more than 4 students)

T.C. - 5
E.C. - 6

Mid-Range (chosen by 3-4 students)

K.H. - 4
J. L. - 3
***E.R.** - 3
***T.B.** - 4
S.L. - 3
***A.M.** - 4
B.B. - 3
C.P. - 3
C.M. - 4
K.B. - 4
J.C. - 4
P.R. - 4
S. R - 4

Low Range
(chosen by 1-2 students)

R.P. - 1
H.M. - 1
***J.M.** - 1
***M.H.** -2
***J.K.** - 2
B.T. - 2

Results of the Sociogram

Question:Who are the three best readers in the class?

***Special Education Students**

Results from first choice only

Isolates (not chosen by anyone)

S.C.
***J.R.**
R.P.
***M.H.**
***J.M.**
C.P.
B.T.
***E.R.**
K.H.
B.B.
S.R.
R.R.
H.M.
K.B.

Chose Each Other

Stars (chosen by more than 4 students)

J. L. - 5
C.M. - 8

Chose Him/herself

S. L.
C.M.
J. L.
***T.B.**
***J.K.**

Mid-Range (chosen by 2-3 students)

T.C. - 3
J.C. - 2

Low Range
(chosen by 1 student)

S. L. - 1
E.C. - 1
***A.M.** - 1
P.R. - 2
***J.K.** - 1
***T.B.** - 2

Results of the Sociogram

Question:Who are the three best readers in the class?

***Special Education Students**

Results from first and second choices only

Isolates (not chosen by anyone)

S.C.
***J.R.**
R.P.
***M.H.**
***J.M.**
***E.R.**
K.H.
B.B.

Chose Each Other

T.C. and E. C.

Stars (chosen by more than 4 students)

T. C. - 5
E.C. - 5
J. L. - 5
C.M. - 8
J. C. - 5

Chose Him/herself

S. L.
C.M.
J. C.
***T.B.**
***J.K.**
J. L.
E.C.
K.B.

Mid-Range (chosen by 3-4 students)

K.B. - 3

Low Range
(chosen by 1-2 students)

S. L. - 2
H.M. - 1
***A.M.** - 1
P.R. - 2
***J.K.** - 1
***T.B.** - 2
R.R. - 1
B.T. - 1
S.R. - 1

Results of the Sociogram

Question:Who are the three best readers in the class?

***Special Education Students**

Results from three choices

Isolates (not chosen by anyone)

S.C.
***J.R.**
R.P.
***M.H.**
***J.M.**

Chose Each Other

Stars (chosen by more than 4 students)

T.C. - 6
E.C. - 5
J.L. - 6
C.M. - 10
J.C. - 5

Chose Him/herself

S.L.
C.M.
J.C.
T.C.
***J.K.**
J.L.
E.C.
K.B.
***T.B.**

Mid-Range (chosen by 3-4 students)

K.B. - 4
S. R. - 3
***T.B.** - 3
S.L. - 3
***A.M.** - 3
C.P. - 3

Low Range
(chosen by 1-2 students)

R.P. - 2
H.M. - 1
***E.R.** - 2
K.H. - 1
***J.K.** - 2
B.B. - 2
R.R. - 1

TO THIS WE'VE COME: SURVIVING BEHAVIORALLY CHALLENGED STUDENTS

Valerie Golightly
Muriel Miller Branch
Thompson Middle School
Richmond, Virginia

Virginia Commonwealth University
April, 1995

*The views expressed in MERC publications are those of individual authors and not necessarily those of the Consortium or its members.

"How Does A Smaller Student/Teacher Ratio Affect the Behavior and Academic Performance of Seventh Grade Underachievers?"

Muriel Branch
Valerie Golightly

During the first weeks of school, Valerie became concerned that she might not be able to adequately meet the needs of her seventh period students in the regular classroom. She realized that because the students had so many other things going on in their world, school was not their number one priority. The first few observations of this class revealed that students had unusual needs, abilities, and patterns of behavior.

Picture this. A thirteen-year-old girl named Carrie crawls through the library on her hands and knees instead of completing her research. Eve and Edward roll around on the floor wrestling during class, fighting over a pencil. Edward, in a fit of anger, throws a desk across the room. In order to have his way, Howie throws a temper tantrum and refuses to do his class work. He sits in a corner and pouts. Priscilla swings her book bag and hits a boy across the back because he said something to her in a previous class.

Very early on, we playfully dubbed them "Bee-Bee's Kids" after the movie by that same name. Their lack of self-control gave them the perfect profile for the label. Consequently, Valerie's seventh period reading class emerged as the subject of our investigation. We decided to team up to see if we could develop some teaching strategies that might help these students become more successful.

After several more observations of students as they checked out books and worked in learning centers in the media center, we asked ourselves and each other, "How in the world did these kids get to the seventh grade without knowing how to comprehend what they read and how to follow directions?" The challenge was to figure out ways to help them. Both of us wondered what part, if any, the environment affects performance. Is it because 7th period comes after lunch and physical education? Is it the high concentration of students with such varied, and in some cases, extreme behavioral and academic problems? Is it the time of day? Is it the subject matter that they are rejecting? It appeared that it just may have been a combination of all these factors.

Valerie conducted a number of written-informal surveys with eighteen students to determine where their interests lay. One of the questions was, "What is your favorite subject?" Ten responded that their favorite subject was physical education because they got to run and play. Four said reading. Three said math, and one said social studies. Among those subjects they liked the least were math, with seven students not liking math because, "It is too hard." or because, "It's too much work." Six students said they didn't enjoy social studies because, "It's boring." Two didn't care for science. One student said English because of the compositions he had to write.

Another informal interview was questions dealing with things that Valerie thought might affect the behavior and or grades of her students. On several days, Valerie logged in her journal that the majority of her students did not eat a well-balanced lunch. Many ate ice cream sandwiches, cakes, and strawberry shortcake bars instead of their lunches. Only a few actually ate the entrees, and even fewer ate the offered vegetable or drank the juice. The majority drank chocolate milk.

We suspected that eating habits may have some bearing on their performance. We also had the suspicion that the more sugar and junk students ate, the more hyper they would become. For instance, Sammy is calm in his morning classes, according to his teachers, but in the afternoon he can't seem to control his need to blurt out in the middle of a lesson. Eve, another rambunctious young lady, has been eating cake, cookies, and popsicles for lunch. She can barely stay seated during her sixth and seventh period classes.

The more we observed these students, the more we wondered about the bearing home environment and parental expectations may have on their performance and behavior. At this point, we thought that maybe environment was our major theme. We began to define environment to include time of day, home, subject matter, lunch and all those things in the environment which influence learning and behavior. Now, we thought we had a really refined question. "What influence does environment have on the performance and behavior of seventh grade underachievers?"

We focused on those things in the environment over which we had control. We looked at

and changed some of our teaching strategies. We pulled small groups of students away from the larger group. We tried videotaping their completed projects. We tried encouraging them to work in groups and in learning centers.

One of the instructional strategies we used was to allow students to choose their own groups. The students were quiet and all groups except one got some work done. One student, who has been referred to the Child Study Committee, spent the entire time working on a poem. It was the FIRST time all school year that she has worked quietly. She was proud of her poem. The Child Study Committee oversees the placement of students with special needs and circumstances. The psychologist, social worker, school nurse, grade-level principal, parent, and guidance counselors, and other specialists serve on this committee.

Learning centers were used as another strategy, and students did seem to respond more enthusiastically to this type of instruction. Muriel noted, "Students had difficulty settling down to a task. Some had to be spoon fed. However, once they were told that their completed projects would be videotaped, their work habits and concentration improved."

When reviewing her journal, Valerie noticed that the majority of her entries centered around the poor behavior of eight distinct individuals: Eve, Edward, Dennis, Carrie, Howie, Neil, Priscilla, and Sammy. So we narrowed our observations to just those students.

On one occasion, the class was asked to write the words to their favorite songs. Out of the eight, Valerie was amazed that seven of the above students could remember the words to the songs, yet they couldn't remember directions, definitions, or the information in the textbooks. "At this point, I was excited because I knew that they [students] were capable of retaining learned information for extended periods of time," Valerie noted.

During the first three weeks of December and the first week of January, Muriel administered a computerized learning styles assessment to each student. She wanted to use this assessment because she had seen several teachers, especially exceptional education teachers, use it effectively. In addition, one of the assistant principals swears by it. The decision to use this form of assessment turned out to be a good one because it gave us more than just raw data. It listed suggested activities and strategies for each of the students. It became for us an IEP (Individualized

Education Plan) of sorts. So, in addition to having a clearer idea about how these students learn or prefer to learn, we now had suggested strategies to meet their needs. We learned that at least half of the class prefer to learn individually. A real surprise was that the overwhelming majority were auditory learners.

*See Figure 1 next page.

Valerie began modifying her instructional strategies to include more oral work. She read stories out loud to the students. They were interested and attentive. The students also began taking oral quizzes at the beginning of class. This method improved quiz grades. Another benefit of oral quizzes was realized in how much more quickly students got on task.

The results of the assessment also showed that the eight students who we had previously identified as needing "special" or individualized help were similar in their preferences for learning, yet their behavior was quite dysfunctional. In observing this subgroup, we noticed that they had difficulty staying focused and staying on task. These students also had difficulty completing assignments.

Although there was some similarity in their behaviors, the causes were different. Neil has been identified as learning disabled. Edward has been hospitalized for emotional disorders. Carrie appears to be a fetal alcohol or drug syndrome baby. Priscilla has recently experienced the divorce of her parents and is having difficulty accepting a new male figure in the household.

* See Figure 2 next page.

Thanks to the guidance of Carl, Jon and members of the class during one of our class meetings, we were able to sift through the potpourri of variables to eliminate those which pulled us away from a central question. Armed with their suggestions, we reformulated our question to its current state, "How does a smaller student/teacher ratio affect the behavior and academic performance of seventh grade underachievers?"

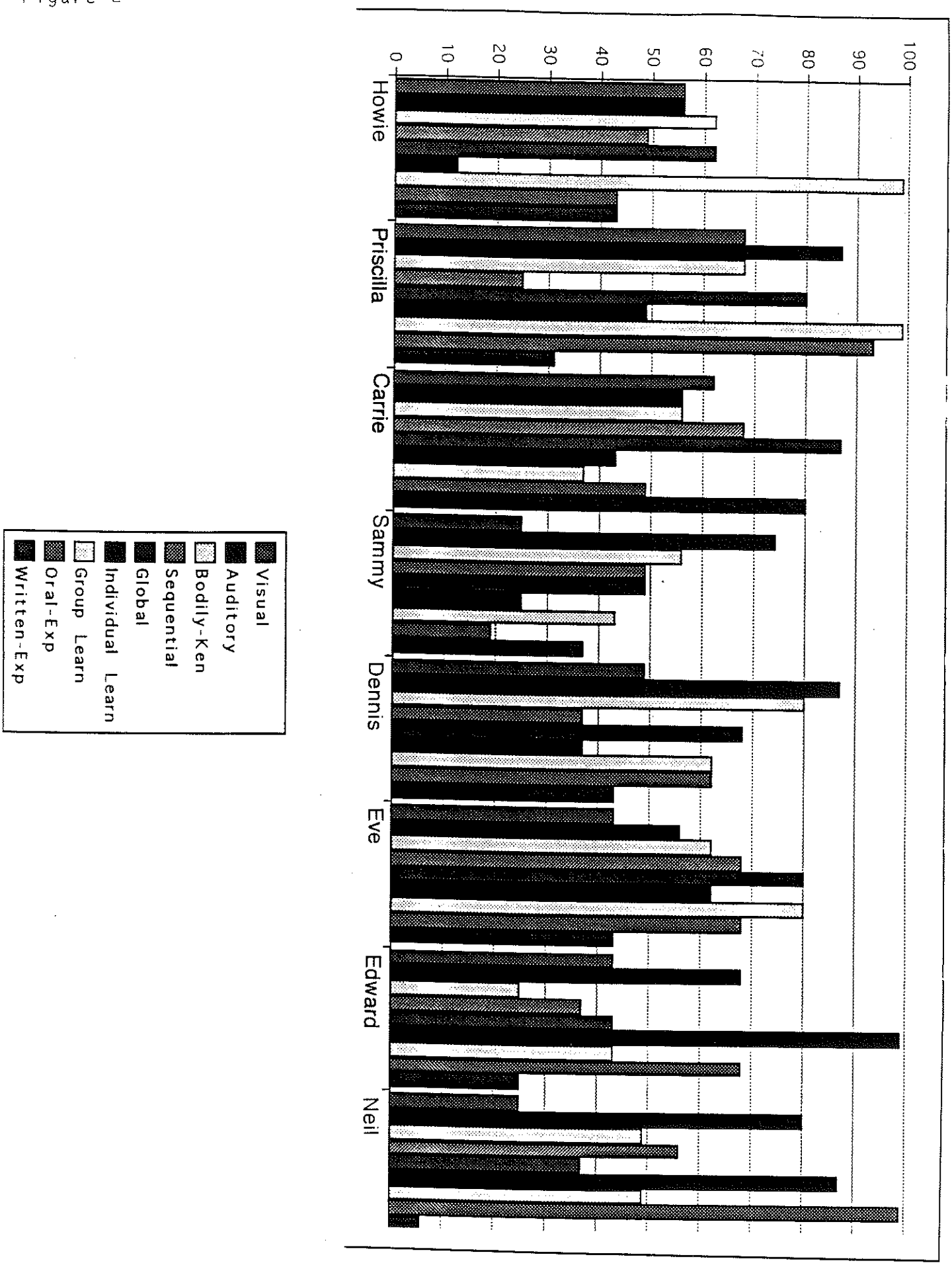
We began to take a more careful look at the needs of individual students. This one needs this, this one needs that. This seemed an appropriate time to include other teachers, especially male teachers, as facilitators and role models.

We decided to have Kevin, the violence prevention coordinator, help us. During the first

Figure 1

	Avg	Student Distribution 0-32%	33-65%	66-100%
Visual	56%	2	12	7
Auditory	62%	1	11	9
Bodily-Kinesthetic	62%	2	12	7
Sequential	53%	3	12	6
Global	62%	0	11	10
Individual Learner	63%	4	7	10
Group Learner	61%	1	12	8
Oral-Expressiveness	60%	1	11	9
Written-Expressiveness	53%	3	11	7

Figure 2


0
10
20
30
40
50
60
70
80
90
100
Howie
Priscilla
Carrie
Sammy
Dennis
Eve
Edward
Neil
Visual
Auditory
Bodily-Ken
Sequential
Global
Individual Learn
Group Learn
Oral-Exp
Written-Exp

couple of classes that Kevin conducted, our monsters turned into angels. Three teachers were present and actively involved in their learning. They stayed seated and raised their hands when asking and answering questions. Valerie wrote in her journal, "Where was this coming from? They were actually polite."

Several of the students complained about Kevin's approach, saying, "He tried to be funny but really was not." and "Mr. H. is evil and watches me all the time." They grumbled because they were actually fighting the structured nature of his lessons. The presentations were both oral and active. At the same time, the students were required to exhibit tremendous self control. They had to think by themselves and answer with appropriate responses.

Muriel observed, "Students were as attentive as I've ever seen them. He [Kevin] drew them into the presentation by involving them in the scenarios."

We began to wonder. Was it Kevin? Was it the new face? Was it the different classroom climate? Was it the structure? Was it the fact that there were three teachers in the room?

As we changed the learning environment to include additional teachers, we observed some improvement in behavior and time on task. We were clearly moving away from the past and into the present, taking one day and one success at a time.

One of the latest efforts at testing the smaller teacher/pupil ratio theory were two whole-class exercises conducted by the lone teacher, Valerie. Students were able to follow directions but had difficulty completing the assignment. The second activity was a thinking exercise involving vocabulary words. The students seemed to do best on the thinking exercise where they didn't have to write as much.

Valerie noted in her journal, "They ran me crazy with questions about their worksheets. Many would get upset and holler out because they thought I should be attending to their needs first. I tried to explain that others had asked questions before them and I would answer the questions in the order they were asked. I heard a lot of comments such as, "Come answer my question first.' I need help more that she does.' 'Me first, me first.' I was very happy, however, because the majority of the students stayed seated most of the class period which is one of the things we have been working on."

The next day we divided the class into two groups. Ten students went to the media center to work with Muriel. The others stayed with Valerie. Of the ten students sent to Muriel, three are in our "special" group. Of the three, only Eve lacked self-control and was unproductive. Neil came in unprepared but settled when given pencil, paper and the appropriate book from which to find information. Dennis was very resistant to doing any work. However, when he found that Muriel was not going to debate the issue of why the project had to be completed, he began to work. Others of the group worked well.

Muriel was not surprised at the way this group performed because she had worked with them in small groups before. From Muriel's perspective, the smaller the group, the better the students work. They stay focused longer, and they are more likely to complete tasks.

To further substantiate our theory about the benefits of a smaller teacher/pupil ratio, we asked Ann, a non-biased researcher/educator, to interview selected students. She was given a list of ten open-ended questions. (See appendix) The results of her interviews indicated that these students did prefer to work with smaller groups.

From the onset, she observed things about these students that we have noticed all year. For example, she described Edward as a student who appeared "disconnected" throughout the interview. "He had what could be the most charming green eyes, but when he came into the room, he turned off the lights behind them, sat down, and put his head on the table. He maintained eye contact with me throughout, but it was eye contact through what seemed to be a blank stare."

She described Priscilla as "personable and loquacious." She spoke very freely and openly about her work. "Her conversation gave evidence of her self-knowledge and her level of comfort and security with herself and others. She was carrying around a brief-case sized book bag that appeared to be heavy and filled with books because it 'bonked' when she let it down [dropped it] on the floor before she sat down."

"It was hard when Ms. G. worked with the whole class because the students get loud," Sammy commented. Howie said he preferred working with two or three students because with that small number of kids, "they don't talk, so we can work." The majority of these students responded that class would be better with two teachers. Priscilla said she like having more than

one teacher because there were more teachers to answer questions. "If you want a personal answer, there's a teacher [available]."

Another reason given to Ann during the interview was that it's good to have more than one teacher so that students can have something explained in two different ways. Two students, Dennis and Edward, actually said that it's a questions of which teachers, not the number of teachers in the class.

We had enough data from our observations, informal surveys, the CAP SOL Learning Styles Assessment, and student interviews to have more than a hunch these underachievers work best individually or in small groups. From student responses to interview questions and from our own observations, we believe strongly that a smaller teacher/pupil ratio is most beneficial to students such as those in seventh period reading. They enjoy having more than one teacher work with them.

We also learned that this very "needy" group of students is more apt to complete tasks when given individualized, oral directions. They **need** the personal attention. A perfect example was the day Muriel gave directions to the entire class about how to construct name cards. She had to stop, patiently demonstrate and give instructions a second time. Then she and Valerie worked individually with those students who didn't understand.

"Stop, take a deep breath and say it again." This, we believe, is one of the greatest lessons we've learned from working with these students. It is certainly one which we can use with similar classes.

Although a smaller student/teacher ratio helps, the overriding factor in maintaining discipline with the students in seventh period reading is a well-structured classroom environment because, while these students are individual learners, they are not independent learners.

Appendix

Questionnaire (Valerie and Muriel-Thompson Middle School)

1. Which activities do you like the most? What is it about these activities that you like?

2. Which activities do you like the least? Why don't you like these activities?

3. Which do you prefer? One teacher, two teachers, three teachers. What is it about having this amount of teachers that makes you feel this way?

4. How many students do you like to work with? What makes you more comfortable working this way?
   A. 1 - 2
   B. 3 - 5
   C. 6 - 10
   D. whole class

5. How do you go about figuring out how to complete an assignment?
   A. What steps do you take first?
   B. How do you know when you're done?

6. What do you like best about small group work? What makes a group work well together?

7. What do you like best about working together with the whole class?

8. What do you like the least about working together with the whole class?

9. Did you complete your Time Capsule? Why or why not?

10. What did you like best about the work Mrs. Branch, Ms. Golightly, and Mr. Hart did with you?

11. What do you want to learn in school?

>>>>>> COMPUTERIZED ASSESSMENT PROGRAM : STYLES OF LEARNING <<<<<<

Howie

School : Thompson Middle Scho
Date : 12-20-4

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                                0%              33%             66%             100%
=============================================================================
Visual.....56% |.........................#.....................
Auditory.....56% |.........................#.....................
Bodily-Kinesthetic.....62% |.............................#.....................
Sequential.....49% |.......................#.....................
Global.....62% |.............................#.....................
Individual Learner.....12% |.....#.....................
Group Learner.....99% |.....................#..
Oral-Expressiveness.....43% |.....................#.....................
Written-Expressiveness...43% |.....................#.....................
=============================================================================
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Preferred Areas:

GROUP LEARNER - PREFERENCE TO STUDY AND WORK IN A GROUP

1. Use small group techniques such as; discussions, Circle of Knowledge, panels, and brainstorming
2. Use laboratory teams in Science.
3. Be involved in simulating what is being learned.
4. Use teams-games and tournaments.
5. Structure need for goal interdependence.

>>>>>>>>> COMPUTERIZED ASSESSMENT PROGRAM / STYLES OF LEARNING <<<<<<<<<

Priscilla

School : Thompson Middle Scho
Date : 12-20-4

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                              0%            33%            66%            100%
=============================================================================
Visual.....................68% |.....................................#.....
Auditory...................87% |.........................................#...
Bodily-Kinesthetic.........68% |.....................................#.....
Sequential.................25% |...........#.....................................
Global.....................80% |.........................................#.....
Individual Learner.........49% |.........................#.....................
Group Learner..............99% |.............................................#..
Oral-Expressiveness........93% |...........................................#....
Written-Expressiveness.....31% |..............#..................................
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Preferred Areas:

GROUP LEARNER - PREFERENCE TO STUDY AND WORK IN A GROUP
1. Use small group techniques such as; discussions, Circle of Knowledge, panels, and brainstorming
2. Use laboratory teams in Science.
3. Be involved in simulating what is being learned.
4. Use teams-games and tournaments.
5. Structure need for goal interdependence.

ORAL EXPRESSIVE - DESIRE TO SPEAK TO A GROUP
1. Make oral reports.
2. Use panel discussion and debates.
3. Put thoughts on cassettes.
4. Participate in class discussions and lectures.
5. Participate in Science Fairs and Olympics of the Mind.

AUDITORY - PERCEIVING THE SPOKEN NUMBER AND WORD
1. Use tape recorders, records and radio.
2. Be involved in classroom lectures and discussions.
3. Practice or review out loud.
4. Participate in oral reports, debates, and plays.
5. Talk through problems.

GLOBAL - PROCESSING BY UNDERSTANDING THE WHOLE
1. Have general overview of lesson prior to presentation.
2. Involve fantasy, humor and appeal to emotions.
3. Experience whole story and then take it apart.
4. Use skimming techniques.
5. Have drawings, graphs, pictures, and imaginative words in stories or descriptions.

VISUAL - PERCEIVING THE WRITTEN NUMBER AND WORD.
1. Use task cards, films, filmstrips and other such visual materials.
2. Take notes in class.
3. Work problems on the chalkboard and on paper.
4. Use workbooks and notebooks.
5. Use imagination and think in pictures.

BODILY-KINESTHETIC - INVOLVING ALL SENSES IN THE LEARNING PROCESS
1. Use plays, pantomime, debate and other such action activities.
2. Use task cards, electroboards and learning circles.
3. Use cereal, spaghetti or cut out letters when learning new words.
4. Have abacus, chisanbop and cuisinaire rods when doing math.
5. Use rhythm when learning lists.

>>>>>>>>> COMPUTERIZED ASSESSMENT PROGRAM / STYLES OF LEARNING <<<<<<<<<

Carrie

School : Thompson Middle Scho
Date : 1/6/95

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                                0%              33%             66%             100%
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Visual.....62% |.............................#.....................
Auditory...56% |...........................#.......................
Bodily-Kinesthetic.....56% |...........................#.......................
Sequential.....68% |.....................................#.................
Global.....87% |.............................................#.......
Individual Learner.....43% |...................#.............................
Group Learner.....37% |................#................................
Oral-Expressiveness.....49% |.....................#.........................
Written-Expressiveness...80% |.........................................#.........
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Preferred Areas:

GLOBAL - PROCESSING BY UNDERSTANDING THE WHOLE
1. Have general overview of lesson prior to presentation.
2. Involve fantasy, humor and appeal to emotions.
3. Experience whole story and then take it apart.
4. Use skimming techniques.
5. Have drawings, graphs, pictures, and imaginative words in stories or descriptions.

WRITTEN EXPRESSIVE - DESIRE TO DO WRITTEN WORK
1. Use written reports, essay exams and journals.
2. Be involved in Young Authors and other such writing programs.
3. Use lecture note taking.
4. Wait 5-10 seconds after a question is asked, to provide time to think.
5. Provide for creative writing experiences.

SEQUENTIAL - PROCESSING STEP BY STEP
1. Provide and develop outlines.
2. Have missing words in stories or descriptions.
3. Use phonetic methods for language.
4. Break stories and descriptions into small parts.
5. Use crossword puzzles, skill exercise and worksheets.

>>>>>>>>> COMPUTERIZED ASSESSMENT PROGRAM / STYLES OF LEARNING <<<<<<<<<

Sammy

School : Thompson Middle Scho
Date : 12-20-94

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                                0%            33%            66%            100%
=================================================================================
Visual.................25% |.........#.....................................
Auditory...............74% |.....................................#.....
Bodily-Kinesthetic.....56% |.........................#.....................
Sequential.............49% |.......................#.........................
Global.................49% |.......................#.........................
Individual Learner.....25% |.........#.....................................
Group Learner..........43% |...................#...........................
Oral-Expressiveness....19% |.......#.......................................
Written-Expressiveness...37% |...............#...............................
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Preferred Areas:

AUDITORY - PERCEIVING THE SPOKEN NUMBER AND WORD
1. Use tape recorders, records and radio.
2. Be involved in classroom lectures and discussions.
3. Practice or review out loud.
4. Participate in oral reports, debates, and plays.
5. Talk through problems.

Non-Preferred Areas:

VISUAL - PERCEIVING THE WRITTEN NUMBER AND WORD.
1. Read materials that are fun.
2. Write out all math computations.
3. Pay close attention to colors and shapes.
4. Practice using number lines, computers, flashcards and other such visuals.
5. Closely observe and draw familiar objects such as trees, plants and houses.

INDIVIDUAL LEARNER - PREFERENCE TO STUDY AND WORK ALONE
1. Show and tell things that have been completed alone.
2. See how something is done and then practice doing it alone.
3. Work alone in such things as drawing, collecting things or writing.
4. Participate in study skills programs.
5. Imagine doing something alone.

ORAL EXPRESSIVE - DESIRE TO SPEAK TO A GROUP
1. Discuss things which are familiar.
2. Reassure students verbally.
3. Assist in understanding of self and improve self concept.
4. Look for opportunities for peer interaction.
5. Read aloud written reports.

>>>>>>>>> COMPUTERIZED ASSESSMENT PROGRAM / STYLES OF LEARNING <<<<<<<<<

Dennis

School : Thompson Middle Scho
Date : 1/5/95

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                                0%            33%            66%            100%
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Visual.....................49% |.....................#.....................
Auditory...................87% |.........................................#.....
Bodily-Kinesthetic.........80% |.......................................#.......
Sequential.................37% |................#................................
Global.....................68% |..................................#.............
Individual Learner.........37% |................#................................
Group Learner..............62% |..............................#.................
Oral-Expressiveness........62% |..............................#.................
Written-Expressiveness.....43% |....................#...........................
================================================================================
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Preferred Areas:

AUDITORY - PERCEIVING THE SPOKEN NUMBER AND WORD
1. Use tape recorders, records and radio.
2. Be involved in classroom lectures and discussions.
3. Practice or review out loud.
4. Participate in oral reports, debates, and plays.
5. Talk through problems.

BODILY-KINESTHETIC - INVOLVING ALL SENSES IN THE LEARNING PROCESS
1. Use plays, pantomime, debate and other such action activities.
2. Use task cards, electroboards and learning circles.
3. Use cereal, spaghetti or cut out letters when learning new words.
4. Have abacus, chisanbop and cuisinaire rods when doing math.
5. Use rhythm when learning lists.

GLOBAL - PROCESSING BY UNDERSTANDING THE WHOLE
1. Have general overview of lesson prior to presentation.
2. Involve fantasy, humor and appeal to emotions.
3. Experience whole story and then take it apart.
4. Use skimming techniques.
5. Have drawings, graphs, pictures, and imaginative words in stories or descriptions.

>>>>>>>>> COMPUTERIZED ASSESSMENT PROGRAM / STYLES OF LEARNING <<<<<<<<<

Eve

School : Thompson Middle Scho
Date : 1/11/95

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                              0%              33%              66%              100%
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Visual.....................43% |.....................#.............................
Auditory...................56% |...............................#.....................
Bodily-Kinesthetic.........62% |.................................#...................
Sequential.................68% |.....................................#.............
Global.....................80% |.........................................#.........
Individual Learner.........62% |.................................#...................
Group Learner..............80% |.........................................#.........
Oral-Expressiveness........68% |.....................................#.............
Written-Expressiveness.....43% |.....................#.............................
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Preferred Areas:

GLOBAL - PROCESSING BY UNDERSTANDING THE WHOLE
1. Have general overview of lesson prior to presentation.
2. Involve fantasy, humor and appeal to emotions.
3. Experience whole story and then take it apart.
4. Use skimming techniques.
5. Have drawings, graphs, pictures, and imaginative words in stories or descriptions.

GROUP LEARNER - PREFERENCE TO STUDY AND WORK IN A GROUP
1. Use small group techniques such as; discussions, Circle of Knowledge, panels, and brainstorming
2. Use laboratory teams in Science.
3. Be involved in simulating what is being learned.
4. Use teams-games and tournaments.
5. Structure need for goal interdependence.

SEQUENTIAL - PROCESSING STEP BY STEP
1. Provide and develop outlines.
2. Have missing words in stories or descriptions.
3. Use phonetic methods for language.
4. Break stories and descriptions into small parts.
5. Use crossword puzzles, skill exercise and worksheets.

ORAL EXPRESSIVE - DESIRE TO SPEAK TO A GROUP
1. Make oral reports.
2. Use panel discussion and debates.
3. Put thoughts on cassettes.
4. Participate in class discussions and lectures.
5. Participate in Science Fairs and Olympics of the Mind.

>>>>>>>>> COMPUTERIZED ASSESSMENT PROGRAM / STYLES OF LEARNING <<<<<<<<<

Edward

School : Thompson Middle Scho
Date : jan 10 1995

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                                0%            33%           66%           100%
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Visual.....................43% |.....................#.............................
Auditory...................68% |.....................................#.............
Bodily-Kinesthetic.........25% |...........#.....................................
Sequential.................37% |.................#...............................
Global.....................43% |.....................#.............................
Individual Learner.........99% |.................................................#..
Group Learner..............43% |.....................#.............................
Oral-Expressiveness........68% |.....................................#.............
Written-Expressiveness.....25% |...........#.....................................
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Preferred Areas:

INDIVIDUAL LEARNER - PREFERENCE TO STUDY AND WORK ALONE
1. Use computers, tape recorders and VCR's.
2. Have a quiet place to study and learn alone.
3. Use workshop way and other learning center approaches.
4. Use programmed learning and instructional packages.
5. Use match and flash cards, vocabulary and test question envelopes.

AUDITORY - PERCEIVING THE SPOKEN NUMBER AND WORD
1. Use tape recorders, records and radio.
2. Be involved in classroom lectures and discussions.
3. Practice or review out loud.
4. Participate in oral reports, debates, and plays.
5. Talk through problems.

ORAL EXPRESSIVE - DESIRE TO SPEAK TO A GROUP
1. Make oral reports.
2. Use panel discussion and debates.
3. Put thoughts on cassettes.
4. Participate in class discussions and lectures.
5. Participate in Science Fairs and Olympics of the Mind.

>>>>>>>>> COMPUTERIZED ASSESSMENT PROGRAM / STYLES OF LEARNING <<<<<<<<<

Neil

School : Thompson Middle Scho
Date : 1/6/95

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                                0%            33%           66%           100%
=============================================================================
Visual.....................25% |..........#.....................................
Auditory...................80% |.....................................#.........
Bodily-Kinesthetic.....49% |.....................#.....................
Sequential.................56% |.............................#.....................
Global.....................37% |................#.....................................
Individual Learner.....87% |.....................................#.....
Group Learner..............49% |.....................#.....................
Oral-Expressiveness.....99% |.................................................#..
Written-Expressiveness...6% |..#.....................................
=============================================================================
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Preferred Areas:

ORAL EXPRESSIVE - DESIRE TO SPEAK TO A GROUP
1. Make oral reports.
2. Use panel discussion and debates.
3. Put thoughts on cassettes.
4. Participate in class discussions and lectures.
5. Participate in Science Fairs and Olympics of the Mind.

INDIVIDUAL LEARNER - PREFERENCE TO STUDY AND WORK ALONE
1. Use computers, tape recorders and VCR's.
2. Have a quiet place to study and learn alone.
3. Use workshop way and other learning center approaches.
4. Use programmed learning and instructional packages.
5. Use match and flash cards, vocabulary and test question envelopes.

AUDITORY - PERCEIVING THE SPOKEN NUMBER AND WORD
1. Use tape recorders, records and radio.
2. Be involved in classroom lectures and discussions.
3. Practice or review out loud.
4. Participate in oral reports, debates, and plays.
5. Talk through problems.

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HOW DO WE HELP OUR STUDENTS BECOME MORE RESPONSIBLE?

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Virginia Commonweatlh University
April, 1995

*The views expressed in MERC publications are those of individual authors and not necessarily those of the Consortium or its members.

Originally we had two completely different questions from the questions you will see discussed in this paper.

Laura's question was: "Using various activities within the classroom, how can I help motivate my at risk students"?

Carol's questions was: "How do I get teachers to realize the benefits of a flexible Library Media Center schedule"?

After much discussion between the two of us, our focus began to change as we became more involved with "The Teacher's As Researchers Project".

We will take you from the beginning, to the middle, to what will be the beginning of an end.

We first began thinking about this question at the beginning of the year when we were getting exposed to various technological opportunities. We started thinking about different ways to instruct our students. We used these two components to draft a question concerning motivating at risk students. As we began to doing different activities, we realized our focus needed to switch from motivation to responsibility.

We began by sending students, in small groups, to the Media Center and teaching them beginning research skills. We soon became aware of the fact that they were motivated to do research, however, they were lacking in responsibility by not being on task, not completing assignments, getting easily distracted by each other , not working cooperatively, and not truly realizing the reason for being in the Media Center.

In order to change the students' perception of the Media Center, we began to implement different strategies. We began by teaching students how to effectively use the materials housed and how to behave in small group or independent settings. Simultaneously, we initiated new approaches to classroom responsibility.

Thus our question shifted from student motivation to student responsibility. We began to make the connection between the classroom and the Media Center.

In the beginning, we also targeted four students who were representative of the

different learners within the classroom. However, as we implemented our various activities and strategies, we found that we were getting a more objective view by looking at the class as a whole.

We discussed our initial observations and impressions with each other and found that we had very similar experiences within the two settings, (classroom and Media Center). We found that students were still coming into both settings not fully understanding what was expected of them. Even though we had a set structure or routine, students were not displaying the behaviors we were hoping to see. Many of the students were not returning homework, they were not completing assignments, they continued to have a negative attitude if they were questioned about an inappropriate action, whether behavior or learning oriented. Students were easily distracted by one another and many were not respectful of each other. They had no concept of completing a task within a given time frame, their listening skills were in need of improvement, and many of them did not feel they had to participate in classroom activities.

One of the assessments we began to use was a classroom observation sheet (Appendix A) used to record student participation and behavior during a particular class activity. The observation sheet included the following information:

a. all student names
b. a system of checking student participation
c. documenting correct or incorrect responses to specific questions
d. group setting; whole group, small group, cooperative, or independent
e. the behaviors displayed
f. a space for comments

As we began to use the classroom observation sheet, the students began to realize we were recording "evidence" and became more conscientious of their behavior. In order to get a more objective view of the students, several observers were

asked to participate by recording their observations during various class activities. After an initial observation period we then explained the class observation sheet. The beginnings of class improvement began to take place.

A weekly assessment by the students was designed to receive student responses to various questions. The students were asked the following questions:

1. What did you like?
2. What didn't you like?
3. What would you have changed?
4. How could you have improved your learning this week?
5. How could Mrs. Woodle have improved her instruction?
6. Which day do you feel was your best day? Why?
7. How much did you feel you participated in daily activities?
8. How do you feel you followed class procedures? (Appendix B)

Using these questions we obtained student responses in three different ways: self assessment, a home interview, and interviews with Mrs. Ann Allen. The students were given this weekly assessment to complete for several weeks. They were never told why or for what purpose.

Included in our various activities, we implemented a behavior modification plan - "Home Court" . (Appendices C1, C2, C3). The purpose of Home Court was to assist the students in making the connection between behavior and learning. The students designed the five (5) basic rules and together with the teacher came up with the idea of receiving technicals. Technicals are given when students are not demonstrating third grade responsibility. These technicals carried over from the classroom to the Media Center. This came as a shock! As Home Court evolved, the students began to realize that we were assisting them to become responsible learners.

After implementing the above activities, it was then time to hold a class meeting and explain to the students what we were doing through the weekly assessment. In

the class meeting students were asked to predict class responses. We then showed them their responses question by question. (Appendix D). Students were then asked to generate ideas on how their weekly assessments could change or become more accurate and more reflective on what was actually occurring in the classroom.

Mrs. Allen came back and did a follow up interview about the class meeting and its concept. The responses which Mrs. Allen received were positive as well as conducive to the responses which were being reflected in the classroom and the Media Center. (Appendix E.)

From the class meeting, morning meetings were begun which helped students focus on their responsibilities for the day. During these meetings students were asked, "What are you going to work on today?" Their responses varied according to the area of behavior each student felt s/he needed to improve. At the end of the day students were asked to self evaluate. They showed "thumbs up" for good, "thumbs sideways" for OK, and "thumbs down" for needs improvement. We found that the students became more honest with each day.

Students were becoming joint participants in all approaches to their own learning and behavior with our assistance. They were beginning to see a partnership evolve.

In the Media Center, students realized they were being observed as well. They began to take part in commenting on the activity and self assessing, along with the Media Specialist. (Appendix F). After they made their comments, she would tell them if she agreed with them or not and why. From this a conversation about what had taken place during the activity occurred. This allowed students to realize that part of their learning responsibilities included their behavior away from the classroom as well. A definite sense of being more focused on work and participation was beginning. Informing our students about what was happening in daily events and evaluations gave them a wider picture and the purpose of responsibility. Students were becoming

joint participants in all approaches to their own learning and behavior with our assistance. They were beginning to see a partnership evolve.

Now we think we have the data that shows that students were becoming more responsible. The first and most recent weekly assessment show that responses have become more focused and reflective.

From the first weekly assessment, we saw one and two word responses, some students copied from a neighbor, and responses were not necessarily reflective of the week's activity but that of a particular day. On the most recent weekly assessment students were more individualized, more truthful, and more reflective of the entire week. Some students had begun to write complete sentences and explanations for their responses. Answers about what they liked and didn't like tended to be about the activity which proved them to be more successful. Listed below are examples of responses from five students who range from better than average to below average in classroom performance:

The question: What would you have changed?

1st student - 1st assessment: nothing

2nd assessment: I would have changed working in the Test Best books instead of working out on the chalkboard. I would have even did better with my behavior.

Interview: We could work in groups. I would change that.

2nd student - 1st assessment:

nothing

2nd assessment:

I would have changed the way that we did math.

Interview: The way we did math groups instead of independent. I like to work with others. It's easier.

3rd student - 1st assessment:

I was going to change my answer on the test.

2nd assessment: My behavior

Interview: My behavior because I can get upset about little things like playing. I get in trouble when I am playing and I should be working.

4th student - 1st assessment: Behavior.

2nd assessment: Behavior in the cafeteria (time out table).

Interview: (Not interviewed because of being LD resourced)

This evidence helps us come to the following conclusions:

Overall the students are becoming focused on their behavior and how their behavior affects their learning. Consistently the students tell us that if they followed classroom rules, paid attention, and listened better, then their learning could have improved. These comments show that they are linking behavior and learning.

Even though our students are not necessarily where we would like them to be at this point, we have to remember "that patience is a virtue". We also realize that to be truly effective this plan would have to be initiated from the first day of school and followed consistently each and every day. This has been a learning experience for us as well as our students. As we continue to implement within our present settings, we realize that some modifications will be necessary to meet the needs of our students as each individual becomes ready to grow and take responsibility in the learning process.

At the same time that this process was being followed, Mrs. Taylor began a Math Portfolio Assessment plan.

Two of my duties as an assistant principal are to coordinate and monitor the instructional program. One method used to see how well students have mastered required skills is to review report card grades each nine weeks. After collaborating

with teachers to investigate why the same students consistently receive poor grades, we tend to reach the usual conclusions: lack of parental involvement, lack of student interest in school work, failure of students to complete homework and class assignments, and the failure of teachers to vary their delivery of instruction to meet the needs of all learners.

I decided to erase all of the barriers which prevent student success from my mind and accepted each one as a given. I came to the realization that there had to be a more effective way to get students to improve their grades.

My research question came into focus: If students are given clearly defined procedures to become responsible for their learning, would the students' grades improve in Math?

I used a Math Portfolio as a tool to teach students how to be responsible for monitoring their progress in Math. Each student was administered a diagnostic test including all the skills they should master in the third grade. They were told to complete only the examples they knew how to do and leave all the other examples blank if they were unsure of the answers. Using the results of the test each student was given clear directives as to how s/he should be responsible for mastering all of the Math skills.

The following steps were used to explain the use of the Math Portfolio:

1. Each student received a Portfolio containing his/her diagnostic test and a weekly assignment form. (Appendix G)

2. The students were instructed to locate the problems they either did not complete or did not know how to complete.

3. They were given oral directions to explain to their parents how the Portfolios would be used. (Appendix H)

It was the responsibility of the student to complete each assignment given on the weekly assignment form.

They were given a list of people (parents, relatives, teachers, administrators), to ask for assistance, if needed. It was stressed that it was the student's responsibility to seek help, if needed.

Each student knew it was his/her responsibility to return the assignment form, signed by a parent or the person who assisted with the assignment.

4. Parents responded by indicating how clearly the explanation was orally given to them concerning the use of the portfolio.

With the exception of only two students, the remainder of the class returned his/her portfolios regularly and began to take ownership for completing assigned task. The results were positive, and we began to observe the following:

1. Parental involvement improved with math assignments.
2. Students knew exactly which math skills they needed to improve.
3. Math instruction was individualized for students.
4. Seventy-five percent of the students improved their math report card grades.
5. Students was responsible for completing math assignments.

My interest in this project continues. The results affirmed my belief that if students are given clearly, defined procedures, they will become responsible for their learning and show improvements in their overall academic progress. I plan to expand the project to include grades 3 - 5 at the beginning 1995- 96 school year.

APPENDIX A

TEACHER OBSERVATION SHEET

Student Name	?	✓	X	Setting	Performance	Comments
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

KEY:

? - Asks questions
✓- Responds correctly to direct question
X - Responds incorrectly to direct question

W - Whole group
P - Paired
SG - Small group
I - Independent
C - Cooperative Group

VG - Very Good
OK - Fair
NI - Needs improvement

APPENDIX A

TEACHER OBSERVATION SHEET

Student Name	?	✓	X	Setting	Performance	Comments
1						
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23						
24						
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APPENDIX B
WEEKLY STUDENT ASSESSMENT

NAME_____ WEEK OF _____

1. What did you like?

_____
_____
_____

2. What didn't you like?

_____
_____
_____

3. What would you have changed?

_____
_____
_____

4. How could you have improved your learning this week?

_____
_____
_____

5. How could Mrs. Woodle have improved her instruction?

_____
_____
_____

6. Which day do you feel was your best day?_____
Why?_____
_____
_____

7. How much do you feel you participated in daily activities?

8. How do you feel you followed classroom procedures?

APPENDIX C1

HOMECOURT ADVANTAGE

Dear _____,

You are now on *Homecourt.* Being on *Homecourt* is an honor and a privilege. On *Homecourt* you can consider yourself safe, secure, and among friends. To be a member you have to follow certain rules. The rules are:

1. Have all materials, supplies, and assignments ready.
2. Keep your hands, feet, and other objects to yourself.
3. Say polite and respectful comments to one another.
4. Participate in classroom activities.
5. Follow all other class and school rules.

You are expected to follow these rules at all times. We are a team and everyone is a team player. Team members work together to achieve success. I will be your coach. I will teach and assist you in every way possible. All of us will be the officials. We will work together and make sure that everyone is successful.

I am asking that you read this carefully. Once you sign this contract, you agree to be a *Homecourt* player.

Welcome to the team!!!

Sincerely,

Coach Woodle

APPENDIX C2

HOMECOURT TECHNICAL

Dear Coach Woodle and Fellow Teammates,

Today I could not follow rule number _____. This rule states that:

_____.

In order to continue to be a team player I am going to do the following:

_____

_____

_____

_____.

Sincerely,

_____

Student's signature

APPENDIX C3

HOMECOURT TECHNICAL II

Date _____

Dear _____,

Today at school I

_____1. did not return homework.

_____2. disrespected my teacher.

_____3. disrupted the class several times.

_____4. used an inappropriate voice.

_____5. was involved in an argument.

_____6. did not follow directions.

_____7. was unable to follow cafeteria rules.

_____8. did not start or finish my work on time.

_____9. did not return important papers.

____10. did not have school supplies.

These are the supplies I need:

_____

____11. had a bad attitude.

____12. did not put forth any effort to learn.

____13. _____

Child's signature _____

Teacher's signature _____

Parent's signature _____

Please return

APPENDIX D

ASSESSMENT CHART FOR CLASS MEETING

1. What do you like? (x = number of students responding)

Solar System xxxxxxxx	Planetarium xxxxx	Outside x
Multiplication xxxxxxxxxxx	Telling Time xxxx	Measurement w/rulers xxxxx
Math xxxxxxx	Problem solving xxxxxxxxxxx	Adding x
Math homework xx	Vocabo xxx	Language xxxx
Vocabulary xxxx	All xx	Test taking skills xx

2. What didn't you like?

Nothing xxxxxxxxxxxxxxxxxxxxxxxx	Behavior xxxxxxxxxxx	Science xxxxxxx
Science Homework x	Vocabo x	Multiplication xx
Telling Time xxxx	Social Studies xxx	Reading x
Problem of the day xxx	Test xx	Math xxxx
Nouns xx	Field trip x	Stuff thrown away x

3. What would you have changed?

Nothing xxxxxxxxxxxxxxxxxxxxx	Group work xxxxxx	Behavior xxxxxxxxxxxx
Room arrangement xxxxx	Science xxx	Writing on board xxx
Overhead xxx	Homework xxx	Math xxx
Attitude xx	Procedures xx	Journal xx
Independent x	Language x	Other people playing x

4. How could you have improved your learning this week?

Listen and follow rules xxxxxxxxxxxxxxxxx		Do good xxxxxxxxxx
Do all homework xxxxxxxx	Nothing xxxxxx	Math xxxx
More reading xxx	Quiet xx	Finishing work on time xxxx
Stay in seat xx	Do more xxx	Ask questions xx
Multiplication xx	Show accomplishment xx	Attitude xx

5. How could Mrs. Woodle have improved her instruction?

Nothing xxxxxxxxxxxxxxxxx	Go outside xxxxxx	People on chalkboard xxxxx
Group work xxxx	Independent work xxx	Play around room xxxx
Math xx	Listen more xxx	Teach more/repeat xxxx

6. Which do you feel was your best day? Why?

Monday xxxxxx	Spelling bee, family visited, new school, Math, pizza, Music (sang, played instrument
Tuesday xxxxxxxx	Valentine's Day, activities, more work
Wednesday x	Extended Day
Thursday xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	PE, Art, Early dismissal, Launch Box, didn't get talked to
Friday xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	Field trip, half day, Math Buzz, Free Friday, cursive
All x	Did all work
No day x	people steal

7. How do you feel you followed classroom procedures?

Great	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx been good, did all work, improved, got an A
OK	xxxxxxxxxxxxxxxxxxxxxxxxxxxx didn't get along, wasn't doing good, name called
Sad	xxx broke rules, attitude

8. How much do you feel you participated in daily activities?

Great	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx helped group,raised hand
OK	xxxxxxxxxxxxxxxxx listened, no participation, didn't finish writing, time up, thinking
Sad	x

TEACHERS AS RESEARCHERS

Interviewer's Comments Summer Hill March 7 & 22, 1995

On two occasions, March 7th and March 22nd, the interviewer administered Ms. Woodle's "student reflection" questionnaire individually to students in her third grade class. From the students' responses to the questionnaire items, it was obvious that:

- the students really do like their teacher very much.
- they are aware that their behavior interferes with their learning.
- they are aware that their behavior results in reprimands from their teacher.
- they like learning activities which include movement, action, and verbalizing ideas with other students.
- they like math, art, and physical education.
- they like to "get along with" others in their class.
- they "go with the flow" -- if one or more of the students in the class "acts up," others are likely to join in, even though they know what the results will be. Conversely, if one of the leaders behaves well, others will copy that model (see comments in the next paragraph).
- they all want to do well in school, and no one wants to get an "alert."

The first part of the March 22nd session was spent in "de-briefing" the class about their class meeting. During this meeting, which had taken place one or two days previously, Ms. Woodle and Ms. Hartsoe showed the students a graphic representation of their answers to the "reflection" questionnaires.

The entire class was most well-behaved during the de-briefing session. All but one or two students participated in the discussion. Each had something to contribute about what s/he had learned from the class meeting. Every student seemed anxious to behave well (to impress the interviewer?) -- they all raised their hands and waited to be called on before contributing. They expanded the discussion by "building on" ideas already contributed by their classmates.

The students who participated in the individual interview sessions on the 22nd seemed much more verbal than those in the individual sessions on the 7th (Perhaps because the interviewer was more familiar? They'd decided that the interviewer was "ok"? As a result of the class meeting, they were really thinking about their learning?). On the 22nd, it was easy to obtain responses to the questionnaire items. The students expanded on their answers without needing prompting and the interviewer "took dictation ."

APPENDIX F

TEACHER OBSERVATION SHEET - MEDIA CENTER - SKILLS

Student	Name	?	✓	X	Setting	Performance	Comments
1							
2							
3							
4							
5	F	✓	X		SG		Good/Good - stayed with group
6							
7							
8	M	✓			SG		Good/Fair - not always on task
9							
10							
11							
12							
13							
14							
15	F	✓			SG		OK/OK - not with group, distracted
16							
17							
18							
19							
20	M	✓	X		SG		OK/OK - talking, turning around
21	M				SG		Sad/Sad - not paying attention
22							
23							
24	M		X		SG		Sad/Sad - attitude when not correct
25	F	✓			SG		OK/OK - talking, not paying attention

KEY:

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OK - Fair
NI - Needs improvement

Checklist for MATH - Grade 3

Name _____ Date _____

Task: _____

_____

_____

_____

Behavior	Observed POOR TO EXCELLENT 1 2 3 4

PORTFOLIO PRESENTATION FORM FOR PARENTS

Student Name _____

Presented To _____

Date _____

Parents:

Please allow your child to give you the Math Portfolio presentation. S/he is to explain how the portfolio is to be used to help him/her master the third grade math skills. After your child finishes his/her presentation, take a few minutes to complete this form and return it to the teacher.

Did your child

_____explain how the Math Portfolio will help improve his/her math skills?

_____explain that s/he is responsible for taking care of the portfolio and not losing it?

_____give you the names of everyone who will assist him/her with math assignments?

_____explain how you will help him/her with his math?

Did you understand your child's explanation during the oral presentation? How good is his/her ability to communicate?

_____

_____

_____

Parent's signature _____