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STRATEGIES TO IMPROVE H.S.P.T. SCORES
IN THE NINTH GRADE MATHEMATICS
CURRICULUM

by
Monifa I. Thomas

A Thesis

Submitted in partial fulfillment of the requirements of the
Master of Arts Degree in Mathematics Education in the
Graduate Division of Rowan University
1998

Approved by

Dr. John Sooy

Date Approved May 7, 1998

ABSTRACT

Monifa I. Thomas, *Strategies to Improve H.S.P.T. Scores in the Ninth Grade Mathematics Curriculum*, 1998, J. Sooy, *Mathematics Education*.

The purpose of this study was to integrate strategies in the ninth grade Mathematics curriculum with a goal of improving High School Proficiency Test scores. This study was designed to meet the needs for the students serviced at Pleasantville High School. Over the past five years Pleasantville High School students have demonstrated erratic behavior on the state mandated HSPT11. Eleventh grade first time test takers have yet to meet the 85% acceptable passing rate for this population. The school district must provide an educational environment where all can learn and find success. This includes preparing students for responsible citizenship, higher levels of education, careers, and passing the HSPT11.

Five Atlantic County high schools were contacted and interviews were conducted. The aim was to see how these schools perform on the HSPT11, what materials these institutions use to improve or maintain their scores, and what factors contribute to their success and failure on the HSPT11.

Upon completion of the literature, related research, and data analysis a 10-step plan of action was developed. This action plan is designed to be utilized during the 1998-1999 academic school year.

MINI-ABSTRACT

Monifa I. Thomas, *Strategies to improve H.S.P.T. Scores in the Ninth Grade Mathematics Curriculum*, 1998, J. Sooy, *Mathematics Education*.

The purpose of this study was to integrate strategies in the ninth grade Mathematics curriculum with a goal of improving High School Proficiency Test scores. Five Atlantic County high schools were contacted and interviews were conducted. The aim was to see how these schools perform on the HSPT11, what materials these institutions use to improve or maintain scores, and what factors contribute to their success and failure on the HSPT11. The conclusion reveals a 10-step action plan to be utilized during the 1998-1999 academic school year at Pleasantville High School.

ACKNOWLEDGEMENTS

I would first like to thank God for the many blessings He has bestowed upon me. Through Him all things are made possible.

I would like to express my sincere appreciation to my parents, Harold and Areda Thomas, and sister Tanika for their encouragement and support. I extend this same gratitude to a host of family members and friends.

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CHAPTER 1

Introduction to the Study

Introduction

At the threshold to the twenty-first century, America continues to put forth a tremendous effort to prepare its youth to become competitive in a global economy. New Jersey, in particular, addresses this issue on a constitutional level, which attempts to implement a state system of “Thorough and Efficient” public schools. In essence, “Thorough and Efficient” education is aimed at ensuring that every child in over six hundred independent school districts in the state of New Jersey receive a quality education regardless of residency.

Increasing standards and requirements for high school graduation on national, state, and local levels have forced many New Jersey school districts to develop more meaningful and challenging curricula that align instruction with performance-based outcome. One of the National Goals 2000¹ states that “All students will leave grades 4, 8, and 12 having demonstrated competency over challenging subject matter..., and [all students will be] prepared for responsible citizenship, further learning, and productive employment...” New Jersey’s plan of action to address this goal is to implement “New Jersey Core Curriculum Content Standards” which incorporates seven academic content areas and career education. To ensure that New Jersey high school students are capable of functioning in the real world they are expected to pass a basic skills examination prior to graduation. This basic skills test, The High School Proficiency Test, presently tests in the areas of Reading, Writing, and Mathematics.

Every New Jersey school district is responsible for preparing its students to meet state requirements. This means giving students quality education that will afford them the opportunity to enter the workforce or pursue higher levels of education.

Background of the Study

The greater issue is preparing this nation's children for a new millenium. A technological advanced society that is constantly changing and information is at the tip of your fingertips. A world where competition is on a global market. Where those who are prepared to meet daily challenges will succeed and those who are not are subject to suffer. On the state level, the mission is to ensure that every New Jersey student who attends a public school receives a "Thorough and Efficient" education. Equal opportunity and education for every New Jersey resident is a must. The question of how to implement Core Curriculum Content Standards must be addressed by each New Jersey school district. It is imperative that every high school graduate be prepared for responsible citizenship, further learning, and productive employment. Part of this includes demonstrating competency on the High School Proficiency Test.

Statement of the Problem

The purpose of this study is to integrate strategies in the ninth grade Mathematics curriculum with a goal of improving High School Proficiency Test scores.

Significance of the Problem

Increasing standards and requirements for high school graduation both on local and state levels have forced many school districts in New Jersey, including Pleasantville, to develop more meaningful and challenging curricula that align instruction with performance-based outcomes. Pleasantville High School students have shown

inconsistent test results over the past five years on the state mandated High School Proficiency Test. For a short period, students showed some improvement on High School Proficiency Test scores in all areas. In spite of some positive growth, Pleasantville High School grade eleven students, who are taking the test for the first time, have yet to meet the 85% acceptable passing rate for this population. The following chart² illustrates the percentage of first time grade eleven test takers passing in the areas of Reading, Writing, and Mathematics:

Table 1.1
 HSPT Scores in Reading, Writing, and Mathematics
 for Juniors at Pleasantville High School

Academic School Year	Reading Section	Writing Section	Mathematics Section
1996 - 1997	59.0	81.9	67.0
1997 - 1998	56.9	67.0	58.3

The Pleasantville School District “must provide an educational environment where all can learn and find success”. This includes preparing its students to pass the High School Proficiency Test. Pleasantville’s mission is to prepare its students for institutions of higher learning or the workforce and enable students to become productive citizens who are able to prosper and make contributions in a global economy. The district is responsible for offering an educational environment that encompasses values, citizenship, self-esteem, decision- making skills, good ethics, good character, and well-

rounded academic offerings. These elements are aimed at bettering the quality of life for the students and the communities in which they live.

Specifically in the area of Mathematics, Pleasantville must elevate High School Proficiency Test scores. It is imperative that a diverse course offering schedule be utilized that will effectively correlate Core Curriculum Content Standards in each class. The academic program must focus on developing higher order thinking skills, rather than merely developing basic or rote knowledge. Technology must be implemented in every classroom in order to prepare students for the new millennium.

Limitations

The city of Pleasantville is located in New Jersey approximately five miles East of Atlantic City. Pleasantville is a predominately Black urban area with an increasing number of limited English speaking residents.

The Pleasantville School District is a unique district. Pleasantville is classified as one of the *Urban 30*; a special needs district that receives funding from the state. It services approximately 4,000 students, Pre-kindergarten through grade twelve. The district consists of four elementary schools, one high school, and an alternative program that accepts grades seven through twelve. Pleasantville High School houses nearly 1,000 students from Pleasantville and neighboring Absecon.

This study will be limited to entering ninth grade students. The significance of this group is to start at the grass roots of secondary education. If students are assessed in the eighth grade using Early Warning Test scores they can be placed in courses that offer the most resources the following year. This will have a positive impact on their upper-classman years and High School Proficiency Test scores.

The data collected will be restricted to junior and senior high schools in New Jersey. Junior high school Early Warning Test scores are an indicator of pupil progress and used as a tool to identify students who may require instructional intervention. High schools will be chosen which share some common elements with Pleasantville High School, namely location, population, and/or socio-economic status.

Definitions

The following definitions are taken from “New Jersey School Report Card Secondary 1995-1996³”.

Early Warning Test –Grade 8. The New Jersey Grade 8 Early Warning Test (EWT) is used as a primary indicator for identifying students who may require instructional intervention. Student scores in the highest level (Level I) indicate clear competence in the critical thinking (or higher order thinking) skills; those in the middle level (Level II) indicate at least minimal competence; and those in the lowest level (Level III) are considered to be below the state minimum level of proficiency. Instructional placement for all students is determined only after additional assessment information is considered.

High School Proficiency Test – Grade 11. The New Jersey Grade 11 High School Proficiency Test (HSPT 11) must be passed as one of the requirements for a high school diploma. If a student does not pass one or more test sections, he or she will receive additional instruction and be retested.

Scholastic Assessment Test. The Scholastic Assessment Test (SAT) is a voluntary program sponsored by the College Board to measure students’ development of verbal and mathematical abilities important for success in college.

Advanced Placement. The Advanced Placement (AP) program of the College Board enables students to take college level courses while still in high school.

Procedures

To research this project neighboring schools were contacted and interviews conducted with supervisors and veteran teachers of Mathematics. Mathematics curricula, along with data containing recent scores from both the High School Proficiency Test and Early Warning Test were solicited. The interview questions were designed to help

identify strategies to improve High School Proficiency Test scores in the ninth grade
Mathematics curriculum.

ENDNOTES

¹ Goals 2000

² King, Norman G. Letter to Pleasantville High School Staff. 9 January 1998

³ New Jersey. Department of Education. Pleasantville High School New Jersey School Report Card. Trenton, 1996.

CHAPTER 2

Review of Literature and Related Research

Introduction

In an attempt to implement strategies that will improve High School Proficiency Test scores in the area of Mathematics many issues arise. Some of the issues involve improving instruction, students taking ownership and responsibility in the learning process, as well as teacher expectations. Many students shift the blame when they are not successful in the class or on standardized examinations, such as the High School Proficiency Test. Equally important, teachers must be adequately trained and prepared to teach in an urban setting and to meet the special needs of students that may be present in the classroom. After reviewing the Pleasantville High School Mathematics Curriculum, monitoring eleventh grade High School Proficiency Test Scores, and participating in Math Department meetings it is evident that there is a need for change. Nationwide people are working on the restructuring of Mathematics education and Pleasantville must be a part of this equation. Providing an environment that presents challenges that are both meaningful and attainable, encouraging self discipline, exposing to appropriate learning materials, combined with proper guidance can assist in getting our students ready for the new millenium. These are all factors that are directly related to this research.

Review of Literature

The following literature was gathered from the Mathematics Teacher: National Council of Teachers of Mathematics. This portion of the review is presented in chronological order dating back to April 1995.

The article entitled, “Increasing Mathematics Confidence by Using Worked Examples” was significant primarily because of the emphasis of teaching Algebra in an urban setting with at –risk students in the population. According to the author, the use of worked examples helped to increase math confidence. There were a variety of students in the population including learning disabled, average, and above average students. A significant number of these students had seen failure in previous math courses. Using a worked example format to introduce or reinforce various topics in Algebra prompted students to study each example until they understand the topic prior to starting the assigned problems. Following this approach, students were more likely to produce more complete, accurate homework. Some other benefits include: improved performance on exams, English as a Second Language students seemed to learn more quickly and remember the relationship between English words and mathematical symbols. “Many students who would typically wait for the teacher when they ran into difficulty found that they could help themselves. Furthermore, it was challenging to try to understand an example and apply it rather than simply solve a set of problems just to get through the assignment,” according to Carroll.¹

Most Mathematics teachers can attest that many students will benefit from getting extra help to be successful in Algebra I. This idea gave birth to the Philadelphia Algebra Transition Project.² The Philadelphia Algebra Transition Project sponsors a six-week

students has recently completed the eighth grade and is on their way to high school. The summer school program provides meaningful Pre-algebra experiences taught in non-traditional ways. It also emphasizes the importance of good study skills in making the transition from middle school to high school. Parental support is solicited.

Parents/Guardians are requested to attend opening and closing ceremonies and chaperone weekly trips. Parents are also frequently contacted with flyers and a newsletter. All of this is in an effort to maintain and improve parental support as their children move on to high school. Additionally, a post-eleventh- grade student is assigned to each instructor in the position of student-mentor. Their duties include acting as role models, assisting with tutoring, and instructing a lesson. In return, these soon to be high school graduates receive preparation for the SAT test and instruction in the use of the graphing calculator. Teachers have the opportunity to pilot new and innovative activities in the summer program. The experience is further enhanced when the students enter high school and are assigned to the same teacher the he/she had during the summer program. This project helps to make the transition for many students from middle school to high school smoother. Since the Philadelphia Algebra Transition Project began in the summer of 1990, it has shown increasing success with students passing their Mathematics courses. The entire educational community is very pleased with the success of this program.

Pleasantville is a predominately African-American school district. It is necessary to support any effort that will effectively increase the number of students in academic Mathematics courses. Issues of style, curriculum, and expectations must be sought after to create optimum growth. In an article written by Rowser and Koontz³, the authors

claim that many African American students have a relational style of cognition and tend to respond in terms of the whole picture instead of parts. Currently, most pedagogical practices primarily address the analytic style. Most curricula and textbooks do not reveal that many cultures helped to contribute to the development of mathematics. The authors suggest a culture-fair curriculum, which shows the history of Mathematics and the various cultures that have contributed to the field of Mathematics. Additionally, classroom visitations from Mathematicians, Scientists, and Engineers such as the African-American female engineer – test driver who was discussed in the article. This will help to improve performance and build an appreciation for Mathematics by exposing and breaking modern day stereotypes that Mathematicians, Scientist, Engineers are only white males. Lastly, the issue of teacher expectations, not all problems that this particular population experiences in the classroom lie with the students themselves. If students are to be successful in academic Mathematics courses educators must communicate to the students that they have the potential to do well and are expected to work to their full potential.

The remainder of the literature comes from a variety of sources. In an article entitled “Problem-Based Mathematics- Not Just for the College Bound”⁴, the authors suggest that Mathematics is far more important to students when they get to do some real thinking. This is one of the premises of the Interactive Mathematics Program, which is part of a National Science Foundation effort to arrange a comprehensive, standards-based high school Mathematics curriculum. This program replaces the traditional sequence, involves little memorization, integrates traditional material, and uses technology such as the graphing calculator to enhance student learning.

Review of Related Research

The Pleasantville School District has been closely monitoring the progress of its high school students on the High School Proficiency Test. There has been inconsistent growth over the past five years. The erratic performance of passing students has made it difficult to zero in on what specifically needs to be done to improve these test scores. Pleasantville continues in its efforts to meet the state minimum level of proficiency, at 85% for grade eleven students. The clear objective is to get all students to pass all three sections of the test, Reading, Mathematics, and Writing prior to graduation.

The following table represents the percentages of Pleasantville students passing each High School Proficiency Test 11 section and the overall HSPT11.⁵ In addition, the state average is included to emphasize where Pleasantville stands on a state level.

Table 2.1
A Comparison of October Pleasantville High School
HSPT Scores and the State Average

	Reading Section	Mathematics Section	Writing Section	HSPT (All Sections)
1993-94 (October 1993)				
Pleasantville High School	51.7	42.2	76.7	27.2
State Average	84.4	82.4	92.8	74.6
1994-95 (October 1994)				
Pleasantville High School	60.2	60.2	84.7	48.0
State Average	83.2	84.4	88.5	73.2
1995-96 (October 1995)				
Pleasantville High School	54.8	65.2	86.8	44.2
State Average	83.4	86.2	90.4	75.6
1996-97 (October 1996)				
Pleasantville High School	57.4	66.4	81.4	45.1
State Average	83	85.9	90.5	74.8

In January of 1998, the results from the October 1997 High School Proficiency Test were released. Pleasantville Administration reported that 56.9% passed the Reading

section, 58.3% passed the Mathematics section, and 67% were successful on the Writing section. Again erratic performance of students passing is evident. According to The Press of Atlantic City⁶ only 45.1% of Pleasantville High School juniors passed all three sections of the test.

In the article entitled, “N.J. School Report Cards”, The Press of Atlantic City illustrates the percentage of high school juniors who passed all three sections of the October 1997 HSPT for Atlantic, Cape May, Cumberland, Southern Ocean, and Salem Counties. The scores varied tremendously with Mainland Regional topping the charts at 88% passing all three parts and Bridgeton coming in last with only 43.6% passing all three sections on the test. Superintendents say comparing just test scores among schools isn't really fair. But they agree that the report-card results can be valuable in getting an overview of a school or district, seeing how it's changing from year to year, and looking at how the district compares with others in the state. Millville's Robert Campbell, Superintendent of Curriculum, admits that it is hard to prepare for the HSPT each year given that you have a different group of students as well a new test. Millville has seen some incremental growth over the past few years. Their success is due in part to administration and staff developing programs to help at risk students. One of the programs takes place during the summer session with those students who failed the practice test in the tenth grade. Bridgeton, a special-needs district, emphasizes its low attendance rate of 87.6%. This school is located in an area where nearly half of the adults never graduated from high school. Keeping students in school is a top priority, even though the initial test scores of those with attendance problems contributes to bringing down the entire school average. To help get at-risk students on track remedial services

are infused. Bridgeton has seen a higher percentage of students passing each individual section. At Lacey Township High School, their formula includes treating the HSPT like the SAT, which most students will take more than once. The school offers remedial work and after-school tutorial for those students who are not successful on any part of the test. Mainland, who ranked the highest on the list, had 92.4% pass Reading, 96% pass Writing, and 96% pass the Mathematics section. Even this school, which demonstrates the highest level of proficiency on the test, offers remedial services to those who fail the test.

ENDNOTES

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- ¹ Carroll, William M. "Increasing Mathematics Confidence by Using Worked Examples." Mathematics Teacher 88.4 (1995): 276-279.
- ² Ponez, Sarah. "Philadelphia Algebra Transition Project." Mathematics Teacher 88.3 (1995): 246.
- ³ Rowser, Jacqueline and Trish Koontz. "Inclusion of African American Students in Mathematics Classrooms: Issues of Style, Curriculum, and Expectations." Mathematics Teacher 88.6 (1995): 448-452.
- ⁴ Alper, Lynne, et al. "Problem-Based Mathematics – Not Just for the College Bound." Educational Leadership 53.8 (1996): 18-21.
- ⁵ New Jersey. Department of Education. Pleasantville High School New Jersey Report Card. Trenton, 1993-1998.
- ⁶ D'Amico, Diane and Michelle Darnell. "N.J. School Report Cards." Press of Atlantic City 5 February 1998: 36.

CHAPTER 3

Procedures

Introduction

The purpose of this study is to integrate strategies into the ninth grade curriculum that will improve students' scores on the Mathematics Section of the grade eleven High School Proficiency Test. In Chapter 2, a review of literature provides some information on how to improve test taking skills, build a stronger more successful Mathematics student, and better meet the needs of the types of students serviced at Pleasantville High School. The related research presents the district's history over the last five years on the High School Proficiency Test. There is much work to be done in an effort to improve these scores. To help address this issue five South Jersey high schools, with varying backgrounds, were contacted and interviews were conducted. The aim was to see how these schools perform on the HSPT11, what materials these institutions use to improve or maintain their scores, and what factors contribute to their success and failure on the HSPT11. The following is a review of the procedures used in the discussion of the literature, related research, and the interview procedure.

Literature and Research

The review of the literature was almost entirely limited to articles dating back to 1995 from the Mathematics Teacher. This journal was chosen because of its gained respect and usefulness amongst teachers of Mathematics. Articles were selected that

targeted improving student performance on standardized tests and arousing student interest in Mathematics with an emphasis on minority students as well as students in urban settings. Pleasantville has experienced and continues to deal with a high failure rate amongst ninth grade students in the Mathematics classroom. Increasing student performance in the Mathematics classroom is a major area of concern and for this reason relevant information was provided in this study. Additional resources were utilized that stressed the issues named above.

To illustrate student performance, the related research presents a table entitled “A Comparison of October Pleasantville High School HSPT Scores and the State Average”. This table dates back to 1993 and shows the erratic performance of the HSPT 11 scores. “The New Jersey School Report Card” was also helpful in retrieving HSPT information about other New Jersey school districts. The goal is to see how other schools are doing and possibly get useful information to help improve Pleasantville High School scores.

Sample Population

The sample population in this study is limited to high school Mathematics teachers and supervisors in the southern New Jersey area. Five high schools from Atlantic County (see Appendix A) were selected with various backgrounds and contacted for interviews.

Development of the Interview Questions

The possible interview questions evolved during reading and discussion with colleagues. These questions were developed and presented to a jury of Mathematics educators. The jury method was used to validate the interview questions. The jury offered their comments and suggestions for revision. The original text with fourteen

questions was revised to twelve with the objective of focusing on the issues and keeping the interview down to an approximate twenty minutes in length (see Appendix B). The questions were designed to get information concerning: a general profile of the district, Early Warning Test and High School Proficiency Test scores, course selection for ninth grade students, and materials used to promote success on the HSPT.

Interview Procedure

Each person to be interviewed was contacted in person, explained in detail the purpose of the study, and asked to participate. If they agreed, a tentative date was scheduled to perform the actual interview. The interviews were scheduled during a two-month period from February through April 1998. The Mathematics teacher/supervisor was visited in the afternoon at his/her school. The interviews were taped using a recording machine and tape. Each question was read aloud once off record before the taping so that the individual could gather his thoughts. Then the tape recorder was turned on and the question repeated. This process was repeated until the interview was complete. One interviewee chose not to be recorded and in this case the information was written rather than recorded.

CHAPTER 4

Analysis of Data

Introduction

The purpose of this study is to integrate strategies into the ninth grade curriculum with a goal of improving student's scores on the Mathematics Section of the grade eleven High School Proficiency Test. In an effort to accomplish this goal five Atlantic County high schools (see Appendix A) were contacted and interviews conducted. The purpose of each interview was to gather information that will determine what factors help to contribute towards success and failure on this examination. An emphasis was placed on what each school does to ensure success on the examination and how they implement their programs in an attempt to maximize achievement. The interview consisted of twelve questions (see Appendix B). The questions were designed to get information concerning: a general profile of the district, Early Warning and High School Proficiency Test scores, course selection for ninth grade students, and materials used to promote success on the HSPT.

Analysis of Data

The data collected will be discussed in the order in which each question was presented during the interview. To begin, a brief profile of each school is necessary to determine what commonalities each school shares with Pleasantville High School and

each other. A description will also be resourceful in expressing with what conditions each school deals. Each school that participated belongs to Atlantic County.

School A is part of a K-12 district located in Atlantic City and services approximately 2,100 high school students. The students range from welfare to very affluent, which come from sending districts. School A, is a District Factor Group A (socio-economic rating), like Pleasantville School District. It is a poor district that receives funding from the state.

School B services approximately 2,400 students, grades K through twelve. It is a poor district, District Factor Group A, which again, like Pleasantville, receives funding from the state. School B is located in a rural area found in the Western Corner of Atlantic County.

School C is a ninth through twelfth grade school district. The building houses eleven hundred thirty students. The students cut across socio-economic levels, but the District Factor Group is FG, which maintains that the majority of the students are upper-middle class. School C is in a suburban area that filters in students from three communities.

School D's population is nearly eleven hundred fifty students. It is one of two high schools in the district. The students serviced are classified as middle to lower class. School D is located in a suburban area. The district factor group is CD.

School E is in the same school district as School D. This high school is the larger of the two and functions with one thousand five hundred students. Similar to School D, School E is located in a suburban area and services a community ranked in District Factor Group CD.

For the eleventh grade population, those students taking the High School Proficiency Test, School A much like Pleasantville does not meet the state standard on the exam. Schools B, D, and E have attained moderate success according to the state average. School C has achieved outstanding success and maintains one of the highest ratings of students taking and passing the High School Proficiency Test in grade eleven in Southern New Jersey.

In general, High School Proficiency Test Scores for each school were consistent. Each school experienced only slight variations over the past few years. No school reported the same type of erratic performance that the students at Pleasantville High School have demonstrated.

Course offerings for ninth grade students are an important element in preparing students for the High School Proficiency Test. Pleasantville offers Pre-Algebra, Algebra, and Geometry in the ninth grade Mathematics curriculum. Students who score in levels II and III on the Early Warning Test are placed in the Pre-Algebra course, this happens to be the majority of freshmen population. These students will also be placed in HSPT Lab, which meets daily during a regular class period. Here students are given additional remediation and exposed to test taking skills. Students who score in level I are scheduled for Algebra I, this number is very small. Three years ago, Pleasantville started a program with the elementary schools that allows a selected group of students to take Algebra I. If the children are successful in this course they receive credit for Algebra I and enter Geometry in their freshmen year. Freshmen students, regardless of academic talent, will not have the opportunity to take an honors Mathematics class. This is primarily the result

of a large population in need of remediation, limited Mathematics teaching staff, and increasing student body.

Unlike Pleasantville, honors courses are available for freshmen students in the Mathematics Department at each school studied. The following is a list of school course offerings for ninth grade students. Courses that have different names but cover similar topics are grouped together in the table. It is evident that the Basic Skills courses tend to have varying names, but generally reviewed junior high school materials and exposed students to Algebra and Geometry concepts.

Table 4.1

9th Grade Course Offerings

TITLE/ SCHOOL	Pre-Algebra Found. of Math Integrated Math I Transitional Math	Algebra I A Found. of Algebra	Algebra I	Geometry	Algebra II
School A	X		X	X	
School B	X		X	X	
School C	X		X	X	X
School D	X	X	X	X	
School E	X		X	X	

Four out of five schools, or 80%, reported that Early Warning Test scores do not affect course selection. Some of the reasons given for EWT scores not affecting placement are:

- the student could have had a bad day during the administration of the EWT
- eighth grade Mathematics teacher recommendations
- parents have the right to override student placement
- EWT scores are returned after schedules have been made for entering high school students.

School A was the only school who did place students according to EWT results. This method is synonymous with Pleasantville's system. In School A, those students who score in level III on the EWT are scheduled for either Foundations of Algebra I or Algebra I. These students will also have an additional Mathematics course entitled Test Prep Math.

One hundred percent of the participating schools expose ninth grade students to test taking skills inside the regular Mathematics classroom. This includes open-ended questions and questions from old HSPTs to address each cluster. Some schools provide additional services in Math Labs or Test Prep courses for those students who score low on the EWT. As mentioned previously, School A schedules those students who score in level III in an additional class, Test Prep. Schools C and E also place low level EWT scorers in an additional remedial course or Math Lab. Schools D pulls students in need of remediation from study halls at least three times a week to help meet the needs of students. This program is entitled Math Camp, here students are able to work at his/her

own pace via computer assisted skills bank. School B does not offer any additional services outside of the regular Mathematics class.

Over the past five years School A reported that EWT scores were slowly eroding. Schools B and D EWT scores show improvement. School C, which has the greatest success on both the EWT and HSPT of the five schools, reported that their scores remain constant. School E did not have this information available at the time of the interview.

Several factors contribute to both success and failure on the EWT. The most prevalent reported factors that contribute towards failure are:

- elementary teachers, especially those who do not like and/or are not certified in Mathematics may not give sufficient time to the study of this subject in the classroom, “teachers teach to their strengths”
- observations have shown that some elementary teachers are teaching Mathematics incorrectly
- transient population
- attendance (you can’t teach students unless they are there)
- lack of parental involvement and support

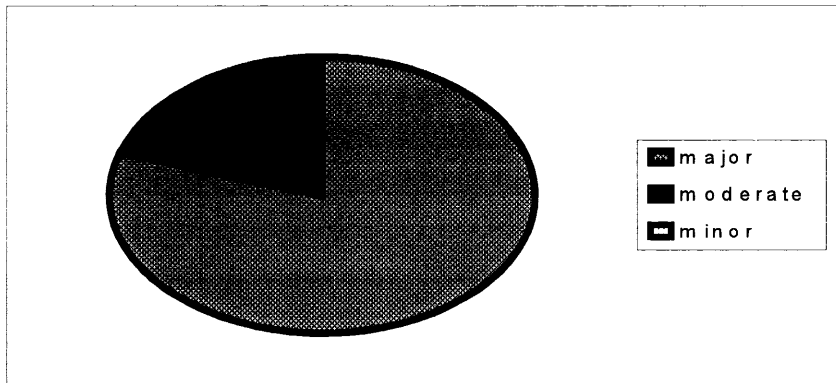
The most common attributions to successful EWT scores:

- dedication and determination of staff
- strong curriculum that is aligned with Core Curriculum Content Standards
- integrated Mathematics program starting from junior high school level through high school
- communication between middle school and high school Mathematics staff

The purpose of the eighth grade Early Warning Test is to identify students who may require instructional intervention before the grade 11-exam administration. Each interviewee was asked to determine how effective the EWT is, major, moderate, or minor, as an indicator of success on the High School Proficiency Test.

Figure 4.1

EWT as an Indicator of Success on the HSPT



No school responded minor, 20% reported moderate at best, and 80% indicated that the EWT is a major element in pointing out deficiencies among students.

School A has set its goal at meeting the state standard for the HSPT. The school intends to accomplish this goal through Test Prep classes and a combined effort of all teachers to improve scores. School B recently met and surpassed its goal set for the HSPT so they will continue in their efforts to meet the state minimum level of proficiency. School C, which has the highest percent of students passing all three sections of the HSPT during the October 1997 administration of the test in Atlantic County, has set its

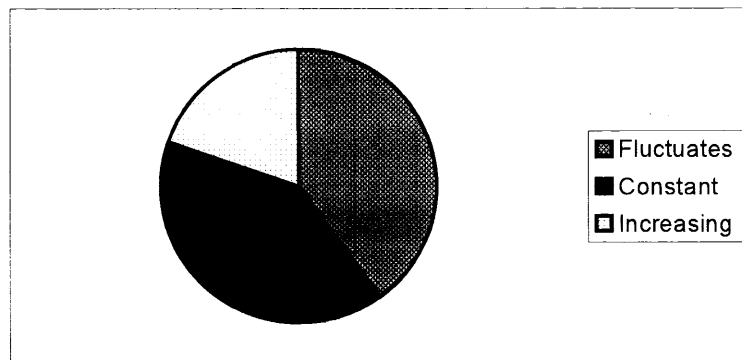
goal at 100% of grade 11 students passing the first time around. They will work at this by reviewing areas of weakness when results are returned and putting open-ended questions on every test. School D also wishes to accomplish all students passing this examination the first time around. More incorporation of HSPT skills in every classroom, “you almost have to teach to the test”. School E is focused on increasing test scores. A priority is keeping the number of students in Math Labs at ten per class. It has also been proposed that Mathematics and Science teachers will coordinate their curriculum to address similar concepts at the same time.

Over the past five years the following trend has been observed with eleventh grade students passing the Mathematics section of the High School Proficiency Test the first time around:

Figure 4.2

Trends for First Time HSPT Math Test Takers

Achieving a Passing Score



The crutch of the study lies at the heart of the last interview question “What suggestions might you offer to improve student performance on the Mathematics section of the HSPT?” These recommendations are in addition to the programs that are already in place at each school that were discussed in detail in this chapter.

The school identified as being below the state standard suggested:

- Get students to take the test seriously
- Improve student attendance in school
- Have students only slightly below, at, or above where they should be when they enter high school (students are coming in with weak skills)

Those schools that have moderate success on the High School Proficiency Test propose:

- Give entering students a Basic Skills Math Test to identify areas of deficiencies
- Decrease class sizes where students need more one to one attention
- Improve upon system in place and stop pointing the finger
- Make teachers available to students three days per week during activity periods
- Teachers should be concerned and knowledgeable about HSPT clusters
- Commitment of the staff to infuse open-ended questions on a regular basis
- Include open-ended questions on all Mathematics exams including mid-terms and finals

The school with outstanding success offers the following advice:

- Get parents to take an interest and get actively involved in their children’s education

- Strong curriculum that aligns itself with National Council of Teachers of Mathematics Standards and Core Curriculum Content Standards
- Present students with higher order thinking skills that reflect EWT and HSPT clusters
- Identify students as early as grade five to take more advanced Mathematics courses such as Pre-Algebra the following year

CHAPTER 5

Summary, Conclusions, and Recommendations

Introduction

In an attempt to improve the quality of education for the students of Pleasantville High School it is necessary to take a look at the High School Proficiency Test which is used as an indicator of how each school in the state of New Jersey measures up. It is the purpose of this study to implement strategies into the ninth grade Mathematics curriculum with a goal of improving scores on the High School Proficiency Test. Related research and literature were consulted to offer concrete evidence as to what type of methods can best meet the needs of the students serviced at Pleasantville High School. In addition, interviews were conducted with five neighboring high schools to see what system each has in place and their performance on the exam. A combined effort offers numerous suggestions for attaining the goal of improving Mathematics scores on the High School Proficiency Test.

Summary of Findings

When completing the study several issues arose that require special attention. Some of the data collected was not included in the study, as the issues would require further consideration and research. However, the information presented in this study offers solid strategies for improving student performance on the Mathematics section of the High School Proficiency Test.

The following findings must be in place for optimum growth and success. The curriculum must be strong and aligned with both NCTM and Core Curriculum Content Standards. Getting parents involved in their child's education will create a strong bond between the home and school and provide a strong support system for the student. Upon entering the ninth grade, students must be at least on grade level. During the first few weeks of the academic school year all freshmen students should take a Basic Skills test to identify areas of strengths and weaknesses. This information should be shared with the parent and teacher to provide a plan that will best meet the needs of the students. The elementary and high school teachers will have greater success if they coordinate their programs and work together to create an individualized plan for each child to make a smooth transition from one facility to the next. Attendance is crucial. You can't teach a child and give him/her the necessary tools to be successful on the examination if he/she is not in school. Mathematics teachers must have high expectations of their students, present material in a clear and detailed manner, expose students to test taking skills and incorporate open-ended questions on a regular basis in every class. Only those students with a handicap or score in level III on the Early Warning Test should be scheduled into a Basic Skills or Transitional Mathematics class. These students should also have an additional Test Prep class designed to give individualized attention in a small class setting. Math Labs should be available to all students at least three times per week during study halls, activity periods, or after school.

Conclusions

The data collected allows for Pleasantville to set both short term and long term goals. The short-term goal must be reasonable and consist of a few elements. This goal

should be attainable during the course of a two-year period. A long-term goal would require greater consideration of the data and a continued effort to duplicate the process with other schools. This should include visitations to schools and classroom observations.

As for strategies to include in the Pleasantville Mathematics curriculum to improve scores on the High School Proficiency Test the following plan of action should be considered. This action plan is designed to be utilized during the 1998-1999 academic school year.

1. The ninth grade curriculum should eliminate Pre-Algebra and offer Algebra IA/B (Algebra course designed to cover Algebra over two semesters), Algebra I, Geometry, and Test Prep
2. Strengthen curriculum and align with NCTM and Core Curriculum Content Standards
3. solicit more parental involvement
4. eighth grade teachers should make recommendations to be considered by the Mathematics Dept. for student placement the following year
5. Entering ninth grade students should take a Basic Skills Exam during the first week of school. The results should be shared with the parent or guardian, student, and teacher. This will assist in describing areas of strengths and weakness for the child to better meet his/her needs.
6. Mathematics Department should include an honors program
7. Math Labs should be available at least three days a week during study halls, activity periods, or after school for all students

8. Those students who score in level III on the EWT should be scheduled in an additional Test Prep class
9. Infuse open-ended questions weekly in every Mathematics class and include this type of question on every quiz and examination
10. Incorporate technology into daily lesson plans

These ten steps are feasible and should be correlated, managed, and assessed by a Mathematics Supervisor. The Supervisor should be available to all teachers, provide assistance and materials, as well as demonstrate lessons regularly. It will take a combined effort to get Pleasantville High School students to perform better on the High School Proficiency Test. Teachers must raise their expectations and make a commitment to preparing our students for the test, a career, higher levels of education, and the new millenium.

Recommendations

A considerable amount of information was attained in this study. A serious consideration should be given to replicating the study on a greater scale. If this were to be done, the interview process would not be as effective and a questionnaire could be developed in its place to accumulate data. This process can also be repeated every three to five years as a follow up and to identify current trends. A longitudinal study is appropriate for this study in an effort to follow trends and update data. An additional recommendation is to solidify the interview questions in an attempt to avoid general answers and prevent the interviewee from responding with lengthy answers that do not directly pertain to the question. Lastly, in an effort to improve High School Proficiency

Test scores, the Pleasantville School District should take this study into consideration as the study was designed for the district to help prepare students for the new millenium.

APPENDIX A

Southern New Jersey High Schools

who Participated in the Interview

School A	Darryll Ramsey	Teacher	Atlantic City High School
School B	Dennis Gallo	Supervisor	Buena Regional High School
School C	Dan Kortvlesy	Supervisor	Mainland Regional High School
School D	Charles Lockwood	Supervisor	Oakcrest High School

APPENDIX B

Interview Questions

1. Provide a brief description of your school district (location, population, socio-economic status, etc.).
2. Provide a brief profile of your high school HSPT 11 scores.
3. What Mathematics courses do you offer your ninth grade students?
4. Do Early Warning Test scores affect course selection, if so how?
5. How are ninth grade students exposed to HSPT test taking skills?
6. What remediation is offered to those students who score in Levels II and III on the EWT?
7. Over the past five years are EWT scores on average increasing, decreasing, or constant?
8. How would you explain past successes and failures on the EWT? What factors do you believe contribute to success/failure on the EWT?
9. How effective is the EWT, major, moderate, or minor, as an indicator of student success on the HSPT?
10. What goal(s) have been set for the HSPT? How does your school intend to accomplish this goal(s)?
11. Over the past five years, what trend has been observed with eleventh grade students passing the Mathematics portion of the High School Proficiency Test the first time around?
12. How would you explain past successes and failures on the Mathematics section of the HSPT? What factors do you believe contribute to success/failure on the HSPT?

What suggests might you offer to improve student performance on the Mathematics section of the HSPT?

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