

The Effects of Homework on Test Scores
and Student Achievement

A Special Project
Presented to
Dr. Gretta Merwin
Heritage University

In Partial Fulfillment
of the Requirement for the Degree of
Master of Education

Corey D. Williams

2010

FACULTY APPROVAL

Effectiveness of Homework on Test Scores and Student Achievement

Approved for the Faculty

_____, Faculty Advisor

_____, Date

ABSTRACT

The purpose of the experiment was to determine whether or not homework was an effective method for increasing test scores. Forty-six students took part in a study in which Class one received in class direct instruction, guided practice and collaborative learning activities. Class two received identical instruction to Class one, however, they were given an intentional homework assignment each night. The students were given the Measures of Academic Progress assessment in the fall as a pre-test. After two quarters of the experiment, the students were given the Measures of Academic Progress assessment again as a post-test. The scores were collected and analyzed to determine if significant growth was made by each class on the Measures of Academic Progress assessment.

PERMISSION TO STORE

I, Mr. Corey D. Williams, hereby irrevocably consent and authorize Heritage University Library to file the attached Special Project entitled, *Effectiveness of Homework on Test Scores and Student Achievement*, and make such Project and Compact Disk (CD) available for the use, circulation and/or reproduction by the Library. The Project and CD may be used at Heritage University Library and all site locations.

I state at this time the contents of this Project are my work and completely original unless properly attributed and/or used with permission.

I understand that after three years the printed Project will be retired from the Heritage University Library. My responsibility is to retrieve the printed Project and, if not retrieved, Heritage University may dispose of the document. The Compact Disc and electronic file will be kept indefinitely

_____, Author

_____, Date

TABLE OF CONTENTS

	Page
FACULTY APPROVAL.....	ii
ABSTRACT.....	iii
PERMISSION TO STORE.....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	viii
CHAPTER 1.....	1
Introduction.....	1
Background for the Project.....	1
Statement of the Problem.....	1
Purpose of the Project.....	1
Delimitations.....	2
Hypothesis or Research Question.....	3
Null Hypothesis.....	3
Significance of the Project.....	3
Procedure.....	4
Definition of Terms.....	4
Acronyms.....	5

CHAPTER 2.....	6
Review of Selected Literature.....	6
Introduction.....	6
The Battle over Homework: Common Ground for Administrators, Teachers, and Parents.....	7
The Homework Myth.....	8
The End of Homework: How Homework Disrupts Families, Overburdens Children, and Limits Learning.....	10
Reliability and Validity of the MAP Assessment.....	10
Summary.....	12
CHAPTER 3.....	13
Methodology and Treatment of Data.....	13
Introduction.....	13
Methodology.....	14
Participants.....	14
Instruments.....	15
Design.....	15
Procedure.....	16
Treatment of the Data.....	16
Summary.....	17

CHAPTER 4.....	18
Analysis of the Data.....	18
Introduction.....	18
Description of the Environment.....	18
Hypothesis/ Research Question.....	19
Null Hypothesis.....	19
Results of the Study.....	19
Findings.....	21
Discussion.....	21
Summary.....	21
CHAPTER 5.....	23
Summary, Conclusions and Recommendations.....	23
Summary.....	23
Conclusion.....	24
Recommendations.....	24
REFERENCES.....	26
APPENDICES.....	27

LIST OF TABLES

	Page
Table 1: Class one Probability.....	21
Table 2: Class two Probability.....	21

CHAPTER 1

Introduction

Background for the Project

The argument over the purpose and effectiveness of homework had been long standing. Professional educators had enthusiastically supported or criticized the practice of assigning homework to students. Some had taken the position that students needed teacher guidance in order to fully understand classroom concepts. With the uncertainty of individual student's home life it was best to separate school and home. Educators who supported homework believed that homework was a vital part of building work ethic and preparing students for the rigors of high school and college. These educators also believed that assigning homework reinforced the concepts taught at school during the day.

Statement of the Problem

In light of differing views regarding the value of homework, this project sought to test the effectiveness of homework on test scores and student achievement in mathematics at the 8th grade level.

Purpose of the Project

The purpose of the project was to determine the effectiveness of assigning homework to 8th grade mathematics students. Based on the results of the project , the researcher intended to share the results with colleagues in the mathematics

department at the researcher's middle school with the intent to develop a comprehensive homework policy.

Delimitations

The researcher taught at a middle school in Southeast Washington, in a rural, predominately agricultural community. The school was located near a nuclear power facility which employed a high percentage of people with higher education degrees. The school was the largest middle school in Washington State with 1,338 students. The student population was split evenly with 50.6 percent of the population male and 49.4 percent of the population female.

The students were made up of a broad range of ethnicities. The population of the researcher's school was made up of 51.6 percent White, 41 percent Hispanic, 3 percent Black, 2.8 percent Asian/Pacific Islander, 0.2 percent Pacific Islander, 2.6 percent Asian, and 0.8 percent American Indian/ Alaskan Native. The researcher's school also had 45.3 percent of the population qualify for Free/ Reduced Lunch (Report Card, 2009).

The school had 85 teachers that taught students in grades 6th through 8th grade. The teachers at the researcher's school averaged 10.4 yrs of experience and 96.3 percent met the qualifications of Highly Qualified as defined by No Child Left Behind.

Hypothesis

Students who received limited homework improved as much or more on the Measures of Academic Progress test than students who received significant amounts of homework.

Null Hypothesis

Students who received limited homework did not improve as much or more on the Measures of Academic Progress test than students who received significant amounts of homework.

Significance of Project

The project had the potential to benefit 8th grade mathematics classes because the project would provide information about the effectiveness of assigning homework. If the hypothesis was proven true then the information could be used vertically by all mathematics Professional Learning Community teams. If the hypothesis was proven to be true then a homework policy could be established. However, if the hypothesis was proven to be false then the information could also be used by the Professional Learning Community teams to give students the necessary practice to maximize success. The project could also benefit the district by providing a study that could be used at any school to see how the population at each school reacted to having more or less homework.

Procedure

At the beginning of the school year the Measures of Academic Progress tests were administered to the 8th grade students in the researcher's mathematics classes. The researcher randomly selected which class received homework. The researcher conducted both classes the same; following the same lesson plan, the same examples, and the same practice problems. The selected class then received additional problems that were taken home as homework. At the end of the semester, the students took the Measures of Academic Progress test again to determine how much the students had grown in their understanding of mathematics from the beginning of the year to the end of the first semester.

Definition of Terms

Adequate Yearly Progress: Adequate Yearly Progress was part of the No Child Left Behind Act which stated every school must improve by a specific percentage each year.

Direct Instruction: With Direct Instruction, students were usually sitting in desks or at tables receiving instructions from a person. The instructions and information were given to the entire class at the same time. Usually the expectations were the same for all students.

Elementary and Secondary Education Act: The Elementary and Secondary Education Act was legislation that was put into effect in 1965 which

guaranteed money to schools to pay for professional development, curriculum, and other necessary educational needs.

Measures of Academic Progress: The Measures of Academic Progress was a standardized test that was given during each semester to measure the progress students made during the school year.

No Child Left Behind: No Child Left Behind was part of the Elementary and Secondary Education Act passed by congress in the year 2000 mandating that all students pass a state standardized test.

Professional Learning Communities: Professional learning Communities were selected groups of teachers who worked together to encourage vertical and horizontal alignment of standards and assessments which helped to promote common assessments and common lesson plans.

Project-Based Instruction: In Project-Based Instruction, students used hands-on projects to learn curriculum instead of lecture.

Acronyms

MAP. Measures of Academic Progress

PLC. Professional Learning Community

CHAPTER 2

Review of Selected Literature

Introduction

Much had been written about the effects of homework on student achievement. Homework had been a major concern for parents in terms of the amount of time the child spent on homework each day and the usefulness of the assignments. Homework had been a major topic of discussion for many schools and school districts as the school reform movement continued to encourage uniformity from school to school and classroom to classroom.

The review of literature included research about the overall benefits of homework during every level of school. Most of the research reinforced the concept that students should receive both instruction and practice in the classroom during the designated time. A common thread was that the practice of assigning homework built useful study habits and organizational skills. The problem was to maintain teacher autonomy without jeopardizing test scores. The author had seen that assigning homework was the only avenue for some teachers to maintain autonomy and teach lessons that went above that commonality, in spite of the new belief in the value of common lesson plans and common assessments.

The Battle over Homework: Common Ground for Administrators, Teachers, and Parents.

This book, by Dr. Harris Cooper, delved deep into the history of the debate over homework from homework's glory years in the early part of the twentieth century to the 1940s when the philosophy of giving homework was first called into question because problem-solving became the central focus of education. The 1950s brought the launching of *Sputnik*. The country panicked and really pushed the need for students to be exposed to as much rigor within the public school as possible. Homework made another u-turn in the 1960s after the country had a sufficient rival to the Russian space program. Homework was viewed as the culprit in applying too much pressure to students. The added pressure was blamed for the lack of student achievement. In the 1980s and 1990s the view of homework was a direct reaction to the report "*A Nation at Risk*". The need for homework was viewed as the means to better test scores on the growing number of standards-based testing (Cooper, 2007).

The importance of Cooper's book was that the author intimately detailed the different viewpoints on homework and what brought about the change. Cooper also pointed to a curious trend in which the country's view swung about every 15 years. The interesting piece was the fact that, regardless of the decade in which the research was from, it all pointed to the relative ineffectiveness of the

practice of assigning homework. The book demonstrated the points of view about homework of families, teachers and administrators so that each could be empathetic to the other's experiences and what drove each to this position.

The Homework Myth

Author Alfie Kohn attacked the issue of homework relevance from a more personal and emotional side. In the book, the author weighed the options and pointed out that little evidence was shown to promote the usefulness of homework at any level. The author accentuated the fact that all research showed that homework had no effect in the elementary grades, and only gradually proved worthwhile as students moved into the middle and high school years.

The author set out to debunk many of the misconceptions that seemed to fuel the relevance of homework. One of those misconceptions was time. Many educators said that homework filled in for a lack of time in the classroom. The author cited a study done by Stanford University which compared four different reforms that were commonly cited as ways to increase student learning. In the study, an hour of instruction was added each day. Among the other three reforms, added time was found to be the least effective reform for mathematics and the second least effective reform for reading (Kohn, 2006).

Kohn covered ever-rising standards as another culprit in the delusion that homework was an effective method for increasing standardized test scores. Many

educators got into the habit of “killing and drilling” standards with worksheets and busy work to give students exposure to the standards and concepts that they were to be tested on. The inconsistency came from the idea that the standards needed to be increased every couple of years, making it virtually impossible for teachers to just teach the standards for the grade. The teachers constantly had to supplement standards that were missed when the standards were adjusted (Kohn, 2006).

The final misconception that was explained in the book was that homework built character and work ethic in students. Kohn compared this idea to an old Monty Python skit that pointed out the idea that work ethic and character-building were not standards by which we were responsible for teaching. The argument was that we already had too many standards to cover in a year, and why would we add on two more.

The conclusion was that education needed to be focused on qualitative principles that provided students with creative, meaningful educational opportunities that delivered the material and provided students the opportunity to make the necessary connections through practice or project.

The End of Homework: How Homework Disrupts Families, Overburdens

Children, and Limits Learning

The book, written jointly by Buell and Kralovec (2000), talked of the over acceptance of homework during family time by our culture. Students needed time to become well-rounded and self-sufficient in areas besides school. Homework was an ailment to the American family because homework took away students' time to exercise and build social relationships outside of the school setting. Homework inhibited the parent-child relationship because homework engulfed a common time that parents had to interact with their children. Homework could also drive a wedge in the relationship between parents and children as the parent became the enforcer of homework. Enforcer and drill master were not the roles most parents wanted to come home to after an 8-10 hour workday, not to mention the typical nightly house chores.

The fact was that the homework myth had survived much too long and was interrupting family time, that was crucial to healthy development and social skills. The unreasonable part was that unstable families were commonly blamed for under-achievement in academics.

Reliability and Validity of the MAP Assessment

The literature on reliability and validity of the MAP assessment was solely found on the Northwest Evaluation Association website which was the company

that created the MAP assessment. The company defined reliability as “a set of indices of a test’s consistency. This consistency typically refers to performance of the test across time, across forms or across its items or parts” (Northwest Evaluation Association, 2004). Reliability tried to show how the test given to the same set of students twice yielded the same results from the first time the students took the test to the second time over a period of time as determined by the test administrator. The results were stated in terms of a Pearson Product Moment correlation coefficient (r). The administrators were looking for a minimum correlation of .80. A perfect correlation would be 1.00. The Northwest Evaluation Association found the test-retest correlation was greater than .80 for all grade levels except second grade where it dipped slightly below .80, twice showing the test to be reliable based on the Northwest Evaluation Association’s research (Northwest Evaluation Association, 2004).

The company defined validity as “the better a test measures what it purports to measure, the greater its validity is said to be” (Northwest Evaluation Association, 2004). The company used the concurrent validity method to determine the validity of the MAP test. The concurrent validity method took an established test which used a scale other than the MAP RIT scale and compared the two tests using a Pearson Product Moment correlation to see how well the two tests compared. Again, the correlation the administrators were looking for was

.80. The company stated at the end of the validity statement that correlations with tests that included more performance test items would generally have lower correlations (Northwest Evaluation Association, 2004).

Summary

The idea of homework as an effective tool to improving achievement for all students was disproved repeatedly. As states tried to appease the federal government with high-stakes testing, teachers felt the pressure of these tests along with students. The researcher also found that ever-increasing standards and changing curriculum left teachers with not enough time to cover all of the material. The realities of the lack of time led many teachers to use a strategy that was easy to justify as a good teaching strategy.

Research showed that homework created a barrier between families and students. Homework was not bringing on the expected results of higher levels of achievement, therefore more homework was given, or the students were chastised for not being motivated. The research showed that the reason behind the decline in achievement levels came from student practice with no guidance. Therefore, student assessment failure was not the student's fault. Students needed the opportunity to experience independent practice of a new skill, however, the students needed to have a rescue rope that will help them stay on the correct track.

CHAPTER 3

Methodology and Treatment of Data

Introduction

In June 2009, a discussion developed between the researcher and a colleague over the effectiveness of homework in improving test scores. This conversation stemmed from a PLC mathematics meeting which was aimed at developing common lesson plans and formative assessment as a means to ensure that all students received like instruction and were given the opportunity for success. The discussion turned to a debate when the subject of homework was brought to the table. The researcher allowed all colleagues to share their viewpoints and then decided to do an experiment aimed at determining whether or not intentional homework would, indeed, help students do better on assessments.

In October of 2009, the four mainstream classes of the researcher took the MAP assessment. From the results of this assessment, two classes were selected at random and the results from each class tested for a significant difference. Once the two classes were selected, both classes were taught the exact same curriculum and given the exact same in-class practice and daily work. The one difference was that one class was given a separate and intentional homework assignment at the end of every class period. The other class was left to the in-class practice and

daily work alone. The idea of the researcher was to take two similar classes and see if a healthy dose of homework would affect student achievement based on the MAP assessment which was taken in early April of 2010.

Methodology

To measure the effectiveness of the intervention, students' MAP assessment scores were analyzed using a quantitative approach. A quantitative approach allowed the researcher to see if there was a significant growth in scores. The t-test was used to determine which class had the most significant growth.

Participants

The 47 students who participated in the study came from a large Washington state school district in Eastern Washington. Of those students, 12 came from middle-class Caucasian families, five came from lower socio-economic Caucasian families, 16 came from middle-class Hispanic families, eight came from lower socio-economic Hispanic families, two came from upper-middle class African-American families, two came from middle class Asian-American families, and one came from a middle class Russian family. Fourteen students came from single parent households. Fifteen came from two parent households where both parents worked. The rest of the students came from a two parent household where only one parent worked. All of the students were in the

mainstream 8th grade mathematics course, and had varying levels of mathematics interest and skill levels.

Instruments

The MAP assessment was given in October, 2009. From this assessment, the researcher was able to determine the classes that were most alike for the experiment. The NWEA recorded the data and placed the data in an organized report for easy viewing. Scores were viewable on the NWEA website and a copy of all scores was sent to the school's administration for quick access viewing.

The homework experiment was administered during quarter two and quarter three of the 2009/2010 school year and had 47 participants. The MAP assessment was given again in April, 2010. Once again the data was recorded and placed in an organized report for viewing. At this point the researcher gathered data for each student and organized it in a table.

Design

The pre-test/post-test strategy was used to collect the quantitative data for the study. The pre-test gave a picture of where the students were performing before the intervention. The post-test gave the second data point allowing the researcher to determine if there was a significant increase in the test scores.

Procedure

Students were placed in the researcher's mainstream mathematics class at the beginning of the school year. All of the researcher's students took the MAP assessment and the scores from each class were analyzed and two classes were selected based on similarity. The classes were then designated as Class one and Class two. Class one received instruction, practice, and in-class assignments. Class two received the same instruction, practice, and in-class assignments, however, they also received deliberate and intentional homework assignments in addition. The two classes were given the same lesson and assessments. The two classes followed the same pacing chart for the second and third quarters.

In October, 2009, all students in the school took the MAP assessment. Forty-seven of the researcher's students were selected making up Class one and Class two. Students were taught using direct instruction, student discovery, collaboration, and common assessments. In April, 2010, all students were given the MAP assessment again and the results were compiled to determine if the students made gains and if so, were the gains significantly different between Class one and Class two.

Treatment of Data

Each student's MAP assessment score was placed into the t-test portion of the STATPAK (2007) computer program which calculated the sample's t-score.

Summary

To answer the question of homework effectiveness and whether homework caused a student to grow more than a student who received no homework, a quantitative study was undertaken. Two classes, Class one and Class two, were pitted against one another. One received intentional, nightly homework while the other was only required to do the in-class skills practice. The data was collected, organized, analyzed, and reported answering the project hypothesis.

CHAPTER 4

Analysis of Data

Introduction

A pre-test/ post-test comparison of Class one and Class two was used to analyze the effectiveness of homework on student achievement. After the data was collected, it was organized and analyzed using the STATPAK (2007) computer program. The researcher used the information to determine if the hypothesis was accepted or rejected.

Description of Environment

The chosen middle school had 1,300 students, nearly half of the middle school students in the district. The middle school had approximately 458 8th graders; this number represented eleven-twenty-fifths of the total 8th graders in school district (*Report Card, 2009*).

The researcher had 108 of the 8th graders from the chosen middle school in mathematics class. From the 108 students, the researcher chose two classes, which were made up of 47 students, to participate in the experiment. The experiment was conducted to determine the effect that homework had on test scores. Test scores were the measure of student achievement.

The MAP assessment was conducted in the chosen middle school's only computer lab. The test was taken in relative silence, with students being able to

take as much time as they needed to finish. Students were fresh and eager to take the test as the test was the first test of the testing season. Most students finished the test with little effort or discomfort.

Hypothesis

Students who received limited homework improved as much or more on the Measures of Academic Progress test than students who received significant amounts of homework.

Null Hypothesis

Students who received limited homework did not improve as much or more on the Measures of Academic Progress test than students who received significant amounts of homework.

Results of the Study

After the post-test, the data was collected and organized in a table to help the researcher determine if homework made a difference in performance on the MAP assessment. The results for Class one went as follows: Of the 20 students, 14 scored higher in the post-test than in the pre-test. Five scored lower in the post-test than in the pre-test. One student scored the same on the post-test and the pre-test.

Class two had similar results. Of the 26 students who took the test, 20 scored higher on the post-test than in the pre-test. Three scored lower on the post-test than on the pre-test. Three scored the same on the post-test and the pre-test.

When the data from the study was placed in the STATPAK (2007) computer program, the mean average, standard deviation, degrees of freedom, and the t-score were calculated. After entering the scores in the computer program, the researcher found the t-score to be 2.25 for Class one and 3.77 for Class two. The researcher then took the t-score and used Table A.4: Distribution of t and concluded that Class one's $2.25 < 2.539$ at the .02 level and that Class two's $3.77 > 3.725$ at the .001 level (Gay & Airasian, 2003). Table 1 shows the results of Class one's probability. Table 2 shows the results of Class two's probability.

Table 1: Class one Probability

Test	N	Mean	Standard Deviation
Pre	20	225.35	10.52
Post	20	228.45	10.67
df = 19	t = 2.25		p < 0.02

Table 2: Class two Probability

Test	N	Mean	Standard Deviation
Pre	26	224.96	13.30
Post	26	229.31	10.57
df = 25	t = 3.77		p < 0.001

Findings

After the two classes took their post-test, the results were analyzed and the researcher found that both classes had made significant growth. The growth for Class one was less than the growth for Class two, with Class one having a t-score of 2.25. The probability of significance was less than two-hundredths level showing significant growth on the MAP assessment. Class two had a t-score of 3.77. The probability of significance was less than one-one-thousandth level showing significant growth on the MAP assessment. Therefore, the hypothesis was accepted and the null hypothesis was rejected.

Discussion

The researcher was confident that the experiment would support the hypothesis as the classes were very similar in grades and assessment scores. Class one had shown the most improvement on classroom assessments, and the two classes had been very similar in terms of quarterly grades. This experiment was effective in proving that true independent practice solidified understanding, however that independent practice did not have to come from homework.

Summary

After the students from Class one and Class two took the pre-test and post-test for the MAP assessment, the results were analyzed using the STATPAK

(2007) computer program and organized in a table. The probability of the effectiveness of the experiment had different results. Class one had a probability of significant growth below the two-hundredth level. Class two had a probability of significant growth below the one-one-thousandth level. With a probability so low, it showed that both classes had made significant growth regardless of having homework or not. Homework was proven not to be an effective method of ensuring that students achieved.

CHAPTER 5

Summary, Conclusions and Recommendations

Introduction

Homework had been a focus for many educators as a tool to ensure student achievement and improve assessment scores. Test scores had become the sole indicator of achievement and success for schools and school districts. The pressure to get students to perform on state assessments had put pressure on educators and administrators. Giving more homework was the easiest and most efficient method used to elicit students to be responsible for learning.

Summary

The purpose of the study was to determine if a healthy dose of homework was an effective method of practice to ensure higher test scores. The researcher used the MAP assessment to test growth over the 2nd and 3rd quarter. The researcher predicted that having nightly homework in one class would not result in growth greater than that of a class that received only in-class practice.

All students received ninety days of direct instruction. Each class had identical instruction and each class participated in the same in-class activities. Class one only had homework if they did not finish the in-class practice problems, and even then an adjustment was usually granted. Class two had intentional homework nightly in addition to the in-class practice and activities.

The researcher used a t-test for the design method. The researcher chose forty-six students for the experiment and used the students' pre-test and post-test scores to determine significant growth on the MAP assessment. The probability of significance was calculated to be below the two-hundredth level showing significance in growth of assessment scores.

Conclusion

After analyzing the data, the researcher calculated the probability of significance using the t-test. Both Class one and Class two had made significant growth on the MAP assessment showing that homework did not make a difference in growth. Intentional homework was not an effective method to increase student assessment scores.

Recommendations

Based on the conclusions from the study, the researcher suggests a t-test analysis be done on Class one and Class two's WASL assessment scores. If the results are the same, the researcher would conclude that the experiment stands as proof that homework is ineffective. If the results are different, the researcher would suggest that the experiment be duplicated with a fresh set of students using the MAP.

The researcher further recommends that this study be shared with PLCs so that informed homework policies can be implemented. The researcher believes

that this experiment shows that intentional homework is not an effective method of teaching and thus should be monitored so as not to waste the family time of students.

The ultimate goal of the study was to show that homework was not an effective method of reinforcement. Student learning should take place in the classroom and reinforcement should take place under a teacher's guidance. The study demonstrated that both classes saw similar levels of improvement even though one class participated in roughly 30 hours of additional reinforcement time. Therefore, this study concludes that homework is not an effective use of the students' time.

REFERENCES

- Buell, J., & Kralovec, E. (2000). *The end of homework: How homework disrupts families, overburdens children, and limits learning*. Boston: Beacon Press.
- Cooper, H. (2007). *The battle over homework: Common ground for administrator, teachers, and parents*. Thousand Oaks, CA: Corwin Press.
- Gay, L., & Airasian, P. (2003). *Educational research: Competencies for analysis and application*. Columbus, OH: Merrill Prentice Hall.
- Kohn, A. (2006) *The homework myth*. Philadelphia,: First Da Capo.
- Northwest Evaluation Association. (2004). *Reliability and validity estimates*. Retrieved October 12, 2009, from <http://www.nwea.org/assets/research/NWEA%20Reliability%20%20Validity.pdf>
- STATPAK. (2007). Retrieved April 8, 2010 from <http://www.prenhall.com/gay>
- Report Card*. (2009). Retrieved April 21, 2010, from <http://reportcard.ospi.k12.wa.us/summary.aspx?schoolId=740&OrgType=4&reportLevel=School&year=2008-09>

APPENDICES

Table 1: Class one Student MAP Scores

Student	Fall 2009	Spring 2010
1	229	232
2	229	233
3	227	230
4	231	239
5	226	231
6	231	237
7	224	226
8	232	232
9	223	224
10	232	239
11	216	212
12	232	226
13	215	208
14	234	232
15	213	220
16	235	245
17	208	222
18	236	228
19	197	208
20	237	245

Table 2: Class two Student MAP Scores

Student	Fall 2009	Spring 2010
1	220	221
2	225	233
3	226	224
4	224	223
5	227	229
6	224	229
7	229	229
8	223	224
9	229	232
10	222	228
11	230	230
12	221	222
13	230	222
14	220	229
15	231	236
16	214	222
17	231	236
18	213	224
19	233	233
20	212	224
21	252	253
22	199	209
23	238	242
24	188	210
25	241	250
26	247	248

