From: John Lee [johnrlee@icanlearn.com]
Sent: Monday, March 08, 2010 5:17 PM
To: What Works
Subject: Recent Review

Dear What Works Reviewers,

I read with interest your recent review of Ritter, Kulikowich, Lei, McGuire, & Morgan (2007) assessing the impact of *Cognitive Tutor® Algebra I* on the math achievement of ninth-grade students in three suburban junior high schools in Oklahoma. During the 2000–01 school year

I have concerns regarding the WWC determination that the Ritter et al. (2007) study of Cognitive Tutor meets evidence standards. This study included 11 control students who crossed over to treatment. These students should have been analyzed as controls through a conventional intent-to-treat (ITT) analysis, but the authors of the study dropped these students from the analysis (according to footnote 2 in Appendix A1 in the WWC Intervention Report for the Ritter et al., 2007 study of Cognitive Tutor). Because the authors did not conduct a proper ITT analysis, the WWC should reconsider its conclusion that this study meets evidence standards. As stated in the WWC Procedures and Standards Handbook (V 2.0): "Any movement or nonrandom placement of students, teachers, classrooms, or schools after random assignment jeopardizes the random assignment design of the study." Clearly, this non-random placement of 11 control students into the treatment condition, and the systematic exclusion of these students from the impact analysis of Cognitive Tutor compromises the integrity of this random assignment study. Because we would expect that the crossover students experienced the same benefit as treatment students, their systematic exclusion from the control group analytical sample overstates the magnitude of the Cognitive Tutor effect, especially in such a small study population of 255 students.Could you please address my concerns and respond back?

Thank you very much,

John Lee

From: WhatWorks
Sent: Tuesday, March 09, 2010 9:39 AM
To: 'johnrlee@icanlearn.com'
Subject: RE: Recent Review (WWCPC 1987)
Dear Mr. Lee,

Thank you for contacting the What Works Clearinghouse (WWC).

We have received your email about the Cognitive Tutor ® Algebra I Intervention Report. The WWC Quality Review Team is reviewing your email and will prepare a written response. The Quality Review Team responds to concerns raised by study authors, curriculum developers or other relevant parties about WWC reviews published on our website. These quality reviews are undertaken when concerned parties present evidence that a WWC review may be inaccurate. When a quality review is conducted, a researcher who was not involved in the initial review undertakes an independent assessment of the study in question. The researcher also investigates the procedures used and decisions made during the original review of the study. If a quality review concludes that the original review was flawed, a revision will be published. These quality reviews are one of tools used to ensure that the standards established by the Institute of Educational Sciences (IES) are upheld on every review conducted by the What Works Clearinghouse.

Thank you,

What Works Clearinghouse

The What Works Clearinghouse was established by the U.S. Department of Education's Institute of Education Sciences to provide educators, policymakers, researchers, and the public with a central and trusted source of scientific evidence of what works in education. For more information, please visit http://ies.ed.gov/ncee/wwc/.

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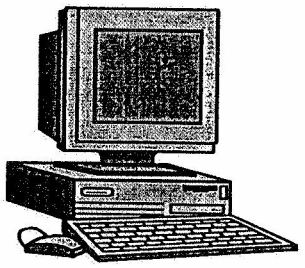
Evaluation of the

I Can Learn

Mathematics Classroom



First Year of Implementation

(2000-2001 School Year)

Prepared by

Christine Kerstyn
Coordinator of Evaluation

John A Hilderbrand, Ph.D., Director
Assessment, Accountability, and Evaluation
Hillsborough County Public Schools
Division of Instruction
Tampa, Florida

The School Board of Hillsborough County, Florida

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Doris Ross Reddick, Vice-Chairman
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Earl J. Lennard, Ph.D.
Superintendent of Schools

Beth Shields
Deputy Superintendent for Instruction

Donnie W. Evans
Assistant Superintendent for Instructional Support

Schools Implementing the

I Can Learn Program
2000-2001 School Year

Dowdell Middle Magnet School

Eisenhower Middle School

Franklin Middle School

Memorial Middle School

Pierce Middle School*(2nd Semester)

Progress Village Middle Magnet School

Roland Park Middle School

Sligh Middle Magnet School

Stewart Middle Magnet School

Van Buren Middle School

Webb Middle School

Williams Middle School

Wharton High School

During the 2000-2001 school year, 11 Title I middle schools in the School District of Hillsborough County implemented the *I Can Learn* Algebra computer program. Selected classes in Algebra, Algebra I Honors, MJ-3, and MJ-3 Advanced were used in a controlled study to evaluate the effect of the program on student achievement. The results from the first year of implementation using achievement data and survey data collected during the 2000-2001 school year are highlighted below.

Highlights of Formal Study Results: Matched -Pair Classes

1. The mean Semester I Exam raw score for eight (8) classes using the *I Can Learn* program in Algebra I (50.0) was slightly higher than the matched classes using a traditional instructional method (48.8). Similar results were noted at the end of the year using the *FCAT* Math scale score mean for the eight pair of classes. The mean *FCAT* Math scale score for the eight classes using the *I Can Learn* program in Algebra I (351.1) was also slightly higher than the matched classes using a traditional instructional method (345.4).

2. The mean Semester I Exam raw score for eight (8) classes using the *I Can Learn* program in Algebra I Honors (46.1) was slightly higher than the matched classes using a traditional instructional method (45.0). Similar results were noted at the end of the year using the *FCAT* Math scale score mean for the eight pairs of classes. The mean *FCAT* Math scale score mean for the eight classes using the *I Can Learn* program in Algebra I Honors (374.2) was slightly higher than the matched classes using a traditional instructional method (373.1).

3. The mean Cumulative Test raw score for 33 classes using the *I Can Learn* program in MJ-3 (31.4) was slightly higher than the matched classes using a traditional instructional method (30.9). Similar results were noted at the end of the year using the *FCAT* Math scale score mean. The mean *FCAT* Math scale score for 32 classes using the *I Can Learn* program in MJ-3 (298.0) was slightly higher than the matched classes using a traditional instructional method (294.4).

4. The mean Cumulative Test raw score for ten (10) classes using the *I Can Learn* program in MJ-3 Advanced (33.1) was slightly higher than the ten matched classes using a traditional instructional method (32.8). Similar results were noted at the end of the year using the *FCAT* Math scale score mean. The mean *FCAT* Math scale score for the ten classes using the *I Can Learn* program in MJ-3 Advanced (331.5) was slightly higher than the matched classes using a traditional instructional method (326.1).

5. A test of significance for the difference in group means between the *I Can Learn* classes and the traditionally instructed classes in Algebra I, Algebra I Honors, MJ-3, and MJ-3 Advanced indicated that the mean difference between the *I Can Learn classes* and the traditionally instructed classes was not large enough to suggest that one group was different than the other.

Exploratory Study Results: Students Forming the Matched Pair Classes

6. For the sample of students used in the study, the *FCAT* scale score mean was higher for the *I Can Learn* group in Algebra I (351.38), MJ-3 (296.77), and MJ-3 Advanced (332.51) than in the traditionally instructed group in Algebra I (344.46), MJ-3 (293.89), and MJ-3 Advanced (327.40).

7. In Algebra I, over half the students in the *I Can Learn* group (58.3%) scored an *FCAT* Math Level 4 or higher when compared to their peers in the traditionally instructed group (44.6%).

8. In MJ-3 Advanced, about one third of the students in the *I Can Learn* group (36%) scored an *FCAT* Math Level 4 or higher when compared to their peers in the traditionally instructed group (24%).

9. The mean *FCAT* Math scale score for *I Can Learn* students scoring a Math Level 3 or higher in Algebra I (355.9) was significantly higher than the mean for their peers in traditionally instructed classes (349.6), which may be attributed to the effect of the program.

10. The mean *FCAT* Math scale score for *I Can Learn* students scoring a Math Level 3 or higher in MJ-3 Advanced (344.3) was significantly higher than the mean for their peers in traditionally instructed classes (339.7), which may be attributed to the effect of the program..

Highlights of Survey Results

11. Most *I Can Learn* students agreed that using the program makes learning mathematics easy (77.2%) and they liked the way the *I Can Learn* lessons could be completed as fast or as slow as they wanted (86.0%).

12. All teachers agreed that students actively used the workstation for learning.

13. Almost all the teachers agreed (89%) that students were clearly learning mathematics and most teachers were satisfied with the students' progress (72%).

14. A majority of teachers (55.6%) perceive the number of minutes as insufficient to complete at least one lesson in the computer classroom.

15. Inconsistencies between teachers in the method of *I Can Learn* program delivery is evident.

16. A majority of parents (55%) reported being more happy this year than last year about their child's progress in mathematics.

17. The most frequent comment made by parents regarding how the *I Can Learn* program used in mathematics has benefitted their child was *increased comprehension.*

Recommendations

1. Continue to study the *I Can Learn* classes using *FCAT* results for 8th grade.

2. Evaluate the program the I Can Learn program at the high school level.

3. Follow the *I Can Learn* students through the pupil progression plan in mathematics through at least Algebra II.

4. Continue the current effort to define and monitor best instructional practices in the *I Can Learn* classroom.

5. Investigate achievement for *I Can Learn* students across gender and ethnic groups.

6. Commend the *I Can Learn* teachers for their consistent, year-long effort in learning how to facilitate the program and in their dedication to provide students with opportunities to realize their potential.

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Introduction

During the 1999-2000 school year, the District entered into a contract with JRL Enterprises, Inc. to implement the *I Can Learn* program at 12 Title I middle schools and one high school. A classroom, dedicated to the needs of the *I Can Learn* program was prepared at the schools during the latter part of the 1999-2000 school year. In this phase of implementation, the classroom was equipped with appropriate desks, environmental controls, and electrical connectivity to facilitate the program. The three year contract with JRL Enterprises provides each classroom with desks, computer equipment, maintenance and technical help with the hardware, and instructional support needed to implement or facilitate the program.

To study the effect of the *I Can Learn* Classroom, middle school classes using the program were matched to traditionally instructed classes in the District. Eight pair of Algebra I classes, eight pair of Algebra I Honors classes, ten pair of MJ-3 Advanced classes, and thirty-three pair of MJ-3 classes resulted from the matching. These classes were matched as closely as possible on the following variables: instruction time, class mean prior achievement, size of class, percent of students on free and reduced lunch, percent of minority enrollment, and time of day.

There are three parts to this report: the formal study of the matched classes, the exploratory study of students enrolled in the matched classes, and the results from surveys given to students, parents, and teachers. Data for student achievement was collected from Semester I Exams or Cumulative Tests and the 2001 administration of the *FCAT*.

Program Description

The *I Can Learn* Beginning Algebra is a comprehensive math curriculum that is delivered through an interactive, multimedia software. Students are guided through a complete course curriculum of 109 lessons that allows students to work at their own pace. Each student sits at their desk and accesses the software through a number of DVD disks.

The *I Can Learn* Algebra covers 109 compete Algebra lessons. Each lesson follows a five part format. Students are initially given a pretest. A pretest typically contains up to ten (10) quiz questions of varying difficulty. Missing one question on the pretest requires the student to continue in the current lesson to the next step in the lesson format called review. In review, students are presented with pre-requisite material that is necessary to learn the current lesson. In the third step, lesson presentation/guided practice, a cyber-teacher presents concepts and procedures using text, video, graphics and audio. Students practice problems through the use of a notebook and computer interactivity. The cyber-teacher is available to work a problem out so the student can identify errors made in their solutions. The classroom teacher is also available for students when needed to support the activities provided in the software. An assessment of the lesson is through a quiz where the classroom teacher configures the time, the number of questions, and the level of difficulty. A cumulative review diagnoses each student's knowledge on a given group of previous objectives to see whether the student sufficiently understands the concepts. Students who do not have a sufficient understanding are automatically placed back on the identified lesson presentations and guided practice. Comprehensive tests are also included in the assessment program incorporated in the software.

All of the students' assessment activities are recorded in a grade book provided with the software. Classroom teachers monitor students' progress through a series of available reports. They have the opportunity to remediate students using other learning strategies and techniques which elaborate on the computer lessons without disrupting the learning process of other students. After remediation, students begin their learning activities where they left to continue their progression through the curriculum.

Evaluation Purpose and Questions

The purpose of the evaluation of the I Can Learn Algebra Program was to look at student achievement, student and teacher attitudes toward learning and parent perceptions regarding their child's mathematics progress. The evaluation will address the following questions.

1. Is there a difference in academic achievement for students who are instructed with the ICL instructional strategy than for students who are instructed by other instructional methods?

2. What are student's perceptions about their mathematics learning and their attitude about using the computer lab for instruction?

3. What are parents' perceptions regarding their child's progress in mathematics?

4. What are teacher's attitudes toward use of the I Can Learn program?

5. What instructional practices are useful in the I Can Learn classroom?

Evaluation Methodology

In order to study the effect of the program on student achievement, classes in the I Can Learn program were matched to traditionally taught classes on several variables. These classes formed the groups on which achievement differences were evaluated using appropriate statistical analyses. Student achievement data were collected at the end of first semester using semester exam or cumulative tests and at the end of the year using *FCAT* data.

Survey data were collected from students, teachers and parent who were involved with the program. Student surveys addressed the following issues: attitudes about learning, motivation, mathematics attitude, computer attitude, attending school, and attitudes about instruction. Teacher surveys addressed classroom management, administrative support, student discipline, student learning, and professional training. Parents were asked to describe their child's progress this year in mathematics through the survey items.

Formal Study: *I Can Learn* Classroom
Matched - Pair Design

Sample

Classroom Matching

The students who used the *I Can Learn* classroom were 8th grade students. Their teachers were assigned some combination of the following courses: MJ-3, MJ-3 Advanced, Algebra I, or Algebra I Honors. Students were taught using the computer instructional delivery method during the time allotted for the period at individual schools. The classroom was used to provided data for the analysis in order to study the effect of the computer system on student achievement

Eighth grade classes across 36 middle schools in the District were grouped by period and course. The matching of the *I Can Learn* classes to traditionally instructed classes was done on a number of criteria. The study included regular education students in classes that were intact from the beginning of school year. The classes were matched on the following aggregated data listed by level of importance: instructional time, prior achievement, class size, proportion of minority students, and time of day. Four (4) different time frames are used in middle schools across the District which determine the length of class time used for instructional purposes. A period may contain 45, 50, 80, or 90 minutes depending on the school. Prior achievement is represented by a class mean using the students' previous year's *FCAT* NRT NCE score. These two factors are considered to be influential in explaining student achievement and would have been sufficient if matching between classes was stopped. However, matching continued on the remaining variables as long as there were classes left to compare. The matched classes were similar in class size and likely scheduled during the same time of day. The time of day was divided into two categories: morning or afternoon classes. The percent of African American student enrollments and percent of Hispanic student enrollments were used to compare classes. The following number of matched classes resulted at the beginning of first semester after comparisons took place: Algebra I - 8 matched pairs, Algebra I Honors - 8 matched pairs, MJ-3 Advanced - 10 matched pairs, and MJ-3 - 33 matched pairs.

Teacher Characteristics

Table 1 presents data regarding the certification status of teachers involved in the matched pair study described in the first part of the report. There are about the same number of certified math teachers in each course: Algebra I, Algebra I Honors, MJ-3, and MJ-3 Advanced. About three-fourths of the teachers in Algebra I, MJ-3, and MJ-3 Advanced and half the teachers in Algebra I Honors are certified in mathematics.

Table 1: Certification Status of Teachers in Matched Pairs

Teacher Characteristics			
Course	Class	Math Certified	
		N (Total)	%
Algebra I	ICL	5 (8)	63%
	TRAD	6 (8)	75%
Algebra I Honors	ICL	4 (8)	50%
	TRAD	4 (8)	50%
MJ-3	ICL	23 (33)	70%
	TRAD	20 (33)	60%
MJ-3 Advanced	ICL	8 (10)	80%
	TRAD	7 (10)	70%

Algebra I and Algebra I Honors
Achievement Results

Introduction

Algebra I students must take a semester exam; their score is calculated as a third of their semester average. However, some students may opt to be exempted from the exam by county policy. The policy allows Algebra I students to opt out of an exam either the first or second semester. During the first semester, no more than 10% of the students in any of the 16 classes of Algebra I or 16 classes of Algebra I Honors involved in the study opted to exempt the first semester exam. Semester exams are District created tests and have gone through extensive and rigorous analyses prior to being administered to students. Answer sheets were collected from all matched classes involved in the study. The Florida Comprehensive Assessment Test (*FCAT*) was also used to help compare achievement of students enrolled in computer classes and the traditionally instructed classes. The mean for each class in Algebra I is provided in a table presented in Appendix A, while class means for Algebra I Honors are found in Appendix B. The classroom was used as the unit of analysis.

Semester I Exam Data

Figure 1 shows the results from the first semester exam used to measure student achievement for the eight pair of Algebra I classes and eight pair of Algebra I Honors used in the study. For both courses, the mean is slightly higher for the I Can Learn group of classes than in the traditionally instructed group of classes. A mean difference of 1.2 points exists for the Algebra I classes and a mean difference f 1.1 points exists for the Algebra I Honors classes.

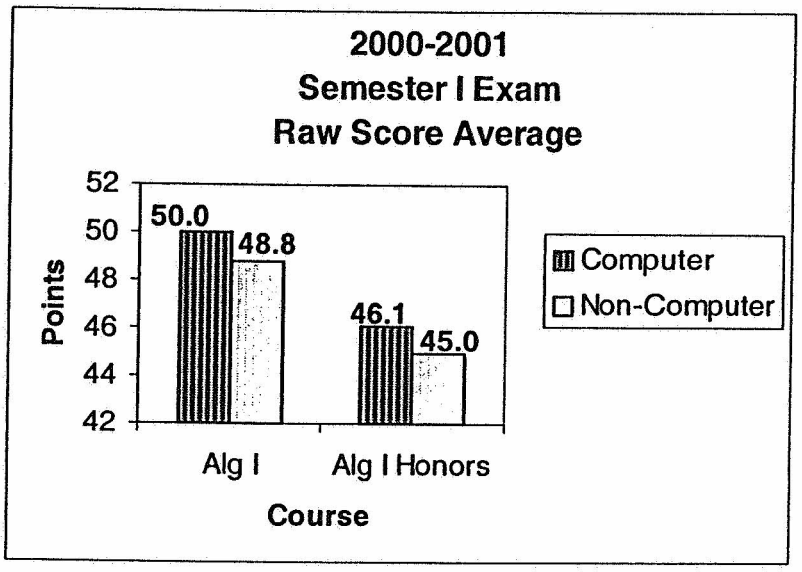


Figure 1 Semester Exam Class Mean for Algebra I and Algebra I Honors

FCAT Data Results

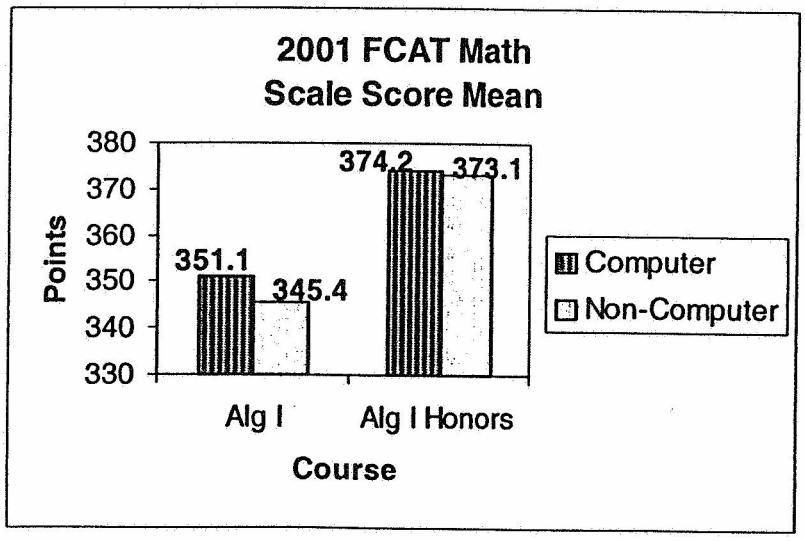


Figure 2: *FCAT* SSS Scale Score Class Mean for Algebra I and Algebra I Honors

Figure 2 on the left, presents the results of the classes involved in the study using another measure of student achievement. The Florida Comprehensive Assessment Test (*FCAT*) was administered in February of 2001. The scale score from the criterion referenced test, the *FCAT* Math Sunshine State Standards (*FCAT* Math SSS) was used to measure student achievement in the matched classes in the study. The class mean FCAT Math scale score in the *I Can Learn* group was higher than the class mean for the traditionally instructed group of classes. A 5.7 scale difference occurred between the groups of classes matched in Algebra I and a 1.1 difference occurred between the groups of classes matched in Algebra I Honors.

MJ-3 and MJ-3 Advanced
Classroom Results

Introduction

MJ-3 students are given a cumulative test at the end of each semester. Although every student is required o take the Cumulative Test, each school has the option of determining how the grade may be used in the overall assessment of the student. The MJ-3 Cumulative Test and the MJ-3 Advanced Cumulative Test are District created exams and have gone through extensive and rigorous analyses before test administration. Answer sheets were collected from all the pairs of matched classes involved in the study and class means are used to make comparisons. Thirty-three (33) matched pairs were used for the Semester I Cumulative Test raw score analysis, however, 32 pairs were left for the *FCAT* analysis used in the study. The same ten pairs of MJ-3 Advanced classes were used for both analyses. The means for each class in MJ-3 can be found in a table presented in Appendix C, while the class means for MJ-3 Advanced are found in Appendix D.

Semester I Cumulative Test Data

For both courses, MJ-3 and MJ-3 Advanced, the mean for classes using the *I Can Learn* program averaged slightly higher than the mean for the traditionally instructed classes As shown in Figure 3, a difference of 0.5 exists between the means of the *I Can Learn* classes and the traditionally instructed MJ-3 classes. A difference of 0.3 exists between the *I Can Learn* group mean and the traditionally instructed group in MJ-3 Advanced.

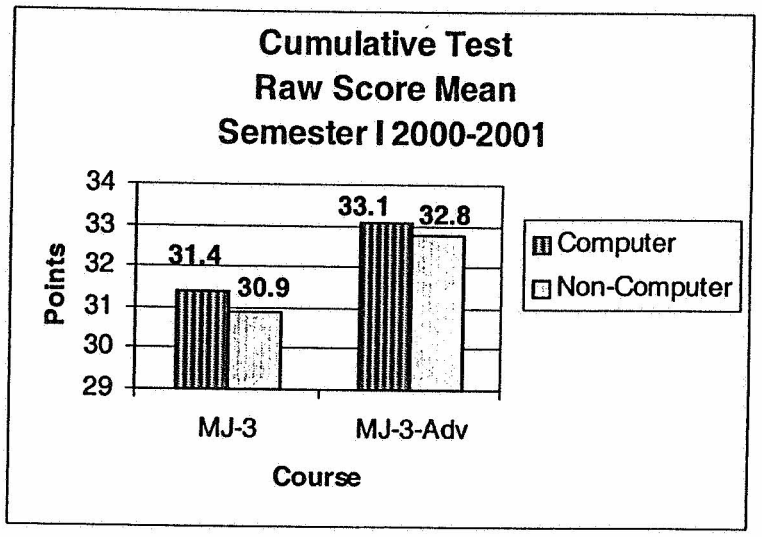


Figure 3: Cumulative Test (Semester I) Group Mean for MJ-3 and MJ-3 Advanced

FCAT Data Results

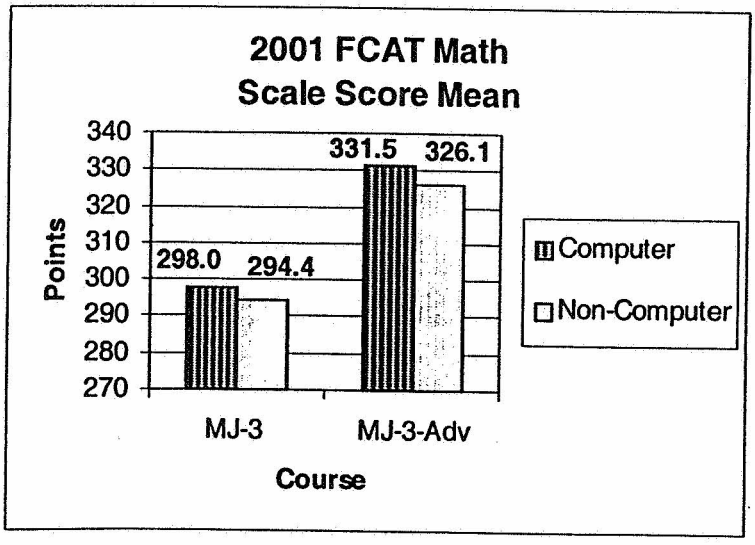


Figure 4 presents the results of the classes involved in the study using the Florida Comprehensive Assessment Test (*FCAT*) administered in February of 2001. The scale score from the criterion referenced test, the *FCAT* Math Sunshine State Standards (*FCAT* Math SSS), was used to measure student achievement between the matched classes in the study. Figure 4, on the left, shows the group mean for both courses, MJ-3 and MJ-3 Advanced. In both courses, the *I Can Learn* group mean was higher than the matched pair group. A 3.6 scale score difference exists between the groups matched in MJ-3 and a 5.4 difference occurred between the groups matched in MJ-3 Advanced.

'gure 4: *FCAT* SSS Scale Score Group Mean for MJ-3 and MJ-3 Advanced

Matched Pairs Study:
Analysis of Covariance Results

Classes were initially matched on the following variables: prior achievement, instructional time, time of day, size of class, and percent of minority enrollment. Instructional time for mathematics classes at the middle school level varies in four ways. Students may be enrolled in a 45 minute, 50 minute, 80 minute, or 90 minute class during the year, depending on the school. As such, classes were matched to other classes with the same time frame allowed for instruction. The resulting pairs were then matched on prior achievement which is known to account for most of the variation in predicting student achievement. Classes continued to be matched on the other variables which augmented the selection process.

Table 2 presents the results of an Analysis of Covariance (ANCOVA). The ANCOVA was used to determine the significance of the difference between the groups, taking into account the variable prior achievement. One score, the students' Normal Curve Equivalents (NCE) score of the *FCAT* Norm Referenced Test (NRT) from the 2000 administration was collected. Prior achievement is represented by the FCAT NRT NCE class mean. As seen in Table 1, the groups'pretest mean prior achievement are comparable. The mean prior achievement in both Algebra I and Algebra I Honors is slightly higher in the traditionally instructed group than in the *I Can Learn* group. The mean for prior achievement is the same for both groups of classes in the 33 pairs matched in MJ-3. The pretest mean for the MJ-3 Advanced *I Can Learn* group is slightly higher than the mean for the group using a traditional instructional approach. For all courses, the Semester I Exam mean for the *I Can Learn* classes is slightly higher than the Semester I Exam mean in the traditionally instructed classes. The results from the ANCOVA suggest that for all courses the difference between the two groups on the post-test(with the pretest tested as a covariate) is not statistically significant at the 0.05 level.

Table 2: ANCOVA Results for Matched Pairs using Semester I Exam/Cumulative Test Raw Score

			Pre-Test *FCAT* NRT NCE SCORE			Post-Test - SEMESTER I EXAM / Cumulative Test Raw Score		Significance ANCOVA	
Course	Number	Class	Mean	SD	% Missing	Mean	SD	F	p
Algebra I	8	ICL	69.7	6.5	7.0	50.0	4.8	0.174	0.683
		TRAD	70.5	10.2	9.0	48.8	4.5		
Algebra I Honors	8	ICL	81.8	6.4	7.0	46.1	6.9	0.162	0.694
		TRAD	82.2	7.8	12.0	45.0	9.6		
MJ-3	33	ICL	41.6	5.6	16.0	31.4	4.6	0.257	0.614
		TRAD	41.6	6.1	15.0	30.9	5.1		
MJ-3 Advanced	10	ICL	59.4	8.7	15.0	33.1	4.8	0.414	0.528
		TRAD	58.0	7.8	16.0	32.8	3.9		

A similar test was done using the *FCAT* results for the matched classes at the end of the school year. The class means were determined by the students who were in the class from the beginning of the year. Any changes on the pretest class means can be attributed to a loss of students throughout the year. However, the changes in ·dent enrollment did not appear to greatly affect the matching done in the beginning of the year. One pair was

dropped from the MJ-3 group, when a traditional class became an *I Can Learn* class in the second semester. Although a larger number of pairs is often sought, the minimum needed for the analysis was 8 pairs, keeping the MJ-3 pairs at an acceptable level for analysis. As shown in Table 3, the group mean, determined by the class mean scale score was higher for all the *I Can Learn* classes in every course. The differences between the *I Can Learn* and traditional classes in Algebra I Honors, MJ-3, MJ-3 Advanced and Algebra I classes were 1.1, 3.6, 5.4, and 5.7 scale score points, respectively. The results from the ANCOVA suggest that for all courses the difference between the two groups on the post-test (with the pretest tested as a covariate) is not statistically significant at the 0.05 level.

Table 3: ANCOVA Results for Matched Pairs using *FCAT* Math Scale Score

			Pre-Test *FCAT* NRT NCE SCORE			Post-Test *FCAT* Math Scale Score		Significance ANCOVA	
Course	Number	Class	Mean	SD	% Missing	Mean	SD	F	p
Algebra I	8	ICL	70.5	10.0	7.0	351.1	15.6	1.933	0.188
		TRAD	70.8	10.1	9.0	345.4	11.4		
Algebra I Honors	8	ICL	81.8	6.4	7.0	374.2	11.1	0.162	0.694
		TRAD	82.2	7.8	12.0	373.1	20.5		
MJ-3	32	ICL	41.9	5.7	16.0	298.0	15.6	1.649	0.204
		TRAD	41.7	6.1	15.0	294.4	13.8		
MJ-3 Advanced	10	ICL	59.4	8.7	15.0	331.5	12.6	1.107	0.307
		TRAD	57.9	8.0	16.0	326.1	11.0		

Exploratory Study:
Sampled Students in Matched Pairs

Introduction

The information presented in this section was collected from students involved in the matched pair study of the *I Can Learn* classroom. Two groups formed by the students in the *I Can Learn* classrooms and the traditionally instructed classrooms will be partitioned by the four different courses involved in the study: Algebra I, Algebra I Honors, MJ-3, and MJ-3 Advanced. The exploratory study of the *I Can Learn* classroom will provide information about variables that may have impacted the instructional benefit of the *I Can Learn* program. Highlights from survey data, collected at various times of the year from the *I Can Learn* students, their parents, and teachers using the *I Can Learn* classroom will be presented. Also, student and teacher demographics will be reported. Descriptive information about student achievement using the *FCAT* Math scale score will be linked to goals outlined in the District Strategic Plan.

Demographics

Table 4 presents demographics for students involved in the matched pairs analysis described earlier in the report. Across all courses, both groups of students maintain similarities on variables used to match classes. In regard to free or reduced lunch, Algebra I students in the I Can Learn group and traditionally instructed group have a smaller proportion of students on free or reduced lunch. The same is true for Algebra I Honors students. A majority of MJ-3 students in the I Can Learn group and the traditionally instructed group are on free and reduced lunch, whereas, a minority of MJ-3 Advanced students in both groups are on free or reduced lunched. Although both groups are similar in socio-economic backgrounds, more students in the I Can Learn group are on free or reduced lunch than their peers in the traditionally instructed classes. The differences in Algebra I, Algebra I Honors, MJ-3, and MJ-3 Advanced are 14.6%, 2.7%, 2.4% and 8.0% respectively.

The racial makeup of the students in both groups is similar in most courses. The largest difference in racial makeup can be seen in Algebra I where a majority of the students in the I Can Learn group are representative of a minority group and about 19% of their peers in the traditionally instructed group belong to a minority group. The students in both groups across all classes are about equal in the number males and females.

Table 4: Demographics of Students in Matched Classes by Course and Instructional Method

Matched Pair Demographics								
				Race			Gender	
Course	Class	N	Free/Reduced Lunch (%)	White (%)	Black (%)	Hispanic (%)	Male (%)	Female (%)
Algebra I	ICL	178	34.3	46.9	28.2	22.0	55.4	44.6
	Trad	178	19.7	65.2	12.4	16.3	44.4	55.6
Algebra I Honors	ICL	150	24.0	45.3	20.7	23.3	47.3	52.7
	Trad	189	21.3	52.9	20.7	15.3	45.0	55.0
MJ-3	ICL	777	59.5	26.9	34.1	35.5	50.3	49.7
	Trad	816	57.1	37.2	25.5	34.0	42.1	47.9
MJ-3 Advanced	ICL	243	43.6	48.0	18.9	31.3	45.8	54.2
	Trad	219	35.6	50.7	26.9	17.8	53.0	47.0

Descriptive Statistics

FCAT Math Scale Score

Table 5 presents *FCAT* Math scale score data from students forming the matched pairs used in the study. The *FCAT* Scale Scores and *FCAT* NRT NCE scores are used to provide descriptive information about the students in each group: the *I Can Learn* or the traditionally instructed group. In most courses, the mean in the *I Can Learn* group was higher than in the traditionally instructed group. In two courses, Algebra-I and MJ-3 Advanced, the minimum score was higher in the *I Can Learn* group than in the traditionally instructed group, by 70 and 57 scale score points, respectively.

The *FCAT* NRT is a norm referenced test that compares Florida students to a national norm group. The NCE is a normalized standard score, ranging from 1 to 99, with a mean of 50 and a standard deviation of 21.06. The mean NCE score for the *I Can Learn* group is equal to or higher than the traditionally instructed group.

Table 5: NCE and Scale Score Descriptive Statistic Information for Students in the Matched Pairs

2001 *FCAT* NRT NCE and 2001 *FCAT* Scale Score Distribution							
COURSE	Group	Score	N	Minimum	Maximum	Mean	Std. Deviation
Algebra I	*FCAT* Math Scale Score	ICL	175	286	500	351.38	30.80
		Traditional	175	216	500	344.46	28.36
	FCAT NRT NCE	ICL	177	29.1	99.0	73.803	14.697
		Traditional	175	31.5	99.0	72.649	13.142
Algebra I Honors	*FCAT* Math Scale Score	ICL	150	306	500	372.99	34.47
		Traditional	186	301	500	373.73	35.80
	FCAT NRT NCE	ICL	149	54.8	99.0	83.820	12.696
		Traditional	187	51.6	99.0	83.890	11.401
MJ-3	*FCAT* Math Scale Score	ICL	678	100	401	296.77	38.23
		Traditional	742	100	399	293.89	38.09
	FCAT NRT NCE	ICL	674	10.4	89.6	49.942	14.037
		Traditional	740	1.0	99.0	48.647	13.920
MJ-3 ADV	*FCAT* Math Scale Score	ICL	219	212	416	332.51	31.19
		Traditional	211	155	427	327.40	29.60
	FCAT NRT NCE	ICL	221	18.9	99.0	66.411	15.143
		Traditional	210	18.9	99.0	63.030	14.131

FCAT Math Levels

The *FCAT* Math Achievement Levels are used to rank *FCAT* scale scores. There are five categories that represent the success students have with the content on the *FCAT*. Level 1, the lowest, indicates an inadequate achievement of grade level content. Levels 3 through 5 indicate a level of success with the challenging content of the *FCAT* Math, using a scale of partial success to success. The state accountability system uses Level 3 or higher as part of their higher success algorithm for school grades. Table 6 presents the scales score ranges in grade 8 Math for the 2000-2001 school year. When comparing Algebra I *FCAT* data presented in Table 5 to the *FCAT* achievement levels seen in Table 6, the mean *FCAT* scale score for the *I Can Learn* group (351.38) places it in Level 4 while the mean *FCAT* scale score for the traditionally instructed group (344.46) is placed in Level 3. Both groups in Algebra I Honors fell in the Level 5 range and both groups in MJ-3 and MJ-3 Advanced fell in the Level 2 range.

Table 6: *FCAT* Mathematics Achievement Levels

	FCAT Mathematics Achievement Levels				
Grade	Level 1	Level 2	Level 3	Level 4	Level 5
8	100-279	280-309	310-346	347-370	371-500

FCAT Math Level Distribution

The *FCAT* scale score distribution by achievement level for students in the I Can Learn and traditionally instructed groups can be seen in Table 7. In Algebra I, over half of the *I Can Learn* students (58.3%) scored a Level 3 or higher on the *FCAT* Math compared to their peers in traditional classes (44.6%). In MJ-3 Advanced, about one third (36%) of the *I Can Learn* students scored a Level 4 or higher on the *FCAT* Math compared to students in the non-computer classes (24.0%). About 80% of the Algebra I Honors students in each group scored a Level 4 or higher. About 5% more MJ-3 students in the I Can Learn group scored a Level 3 or higher than did their peers in the traditionally instructed group.

Table 7: *FCAT* Scale Score Distribution

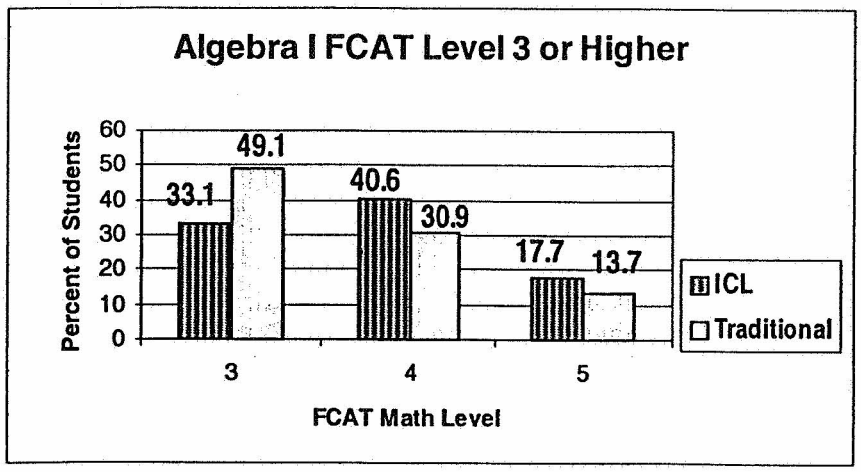
Number and Percent of Students at *FCAT* Scale Score Level
Students from Matched Pairs

		***FCAT* Scale Score Math Level**										
		1		2		3		4		5		Total
Course	Class	N	%	N	%	N	%	N	%	N	%	N
Algebra I	ICL	0	0.0	15	8.6	58	33.1	71	40.6	31	17.7	175
	Trad	1	0.1	10	5.7	86	49.1	54	30.9	24	13.7	175
Honors Alg I	ICL	0	0.0	1	0.7	27	18.5	54	37.0	64	43.8	146
	Trad	0	0.0	3	1.6	31	16.7	69	37.1	83	44.6	186
MJ-3	ICL	184	27.2	227	33.5	215	31.8	44	6.5	7	1.0	677
	Trad	206	27.8	279	37.7	215	29.1	35	4.7	5	0.7	740
MJ-3 ADV	ICL	9	3.7	35	16.6	99	45.2	55	26.1	21	10.0	219
	Trad	9	4.3	37	17.5	114	54.0	41	19.4	10	4.7	211

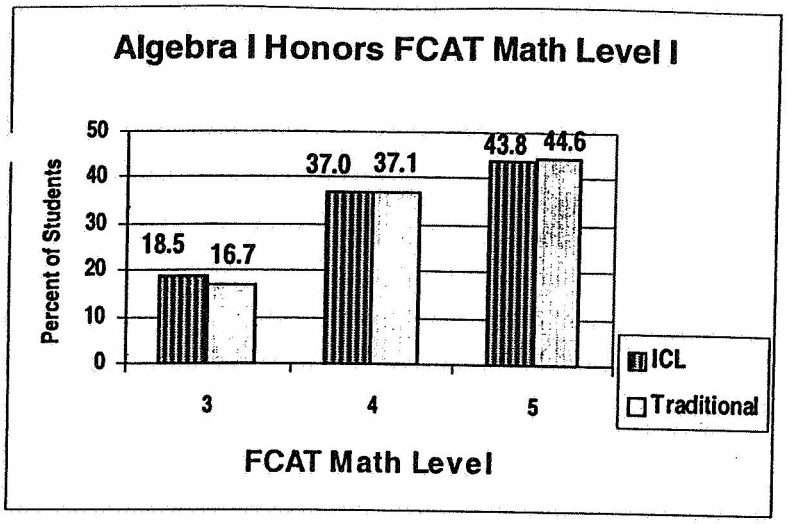
Hillsborough County's Strategic Plan

Goals for Students Achieving at Exceptional Academic Levels

Goal 1.6 of the Hillsborough County Strategic Plan states that schools will meet or exceed the state criteria for a rating of "B" or above. To earn a grade of "B" or higher, schools have to meet what the state has defined as "Higher Academic Success" levels. For 8th graders, a school must have at least 50% of their students scoring at level 3 or higher. Figures 5 through 8 present the frequency of students earning a Level 3 or higher. Figure 5 presents a comparison of the *I Can Learn* group and the traditionally instructed group of students in Algebra I. A larger proportion of *I Can Learn* students earned a Level 4 or higher than the traditionally instructed group.



gure 5: Frequency of Algebra I Students Earning *FCAT* Math Level 3 or Higher



The *I Can Learn* students in Algebra I Honors performed comparably to their peers in the traditionally instructed group. Almost half of the students in both groups earned a level 5 based on their *FCAT* scale score.

Figure 6: Frequency of Algebra I-Honors Students Earning *FCAT* Math Level 3 or Higher

The *I Can Learn* students in MJ-3 performed comparably to their peers in the traditionally instructed group. However, a slightly larger proportion of the students in the *Can Learn* group (39.3%) scored at Levels 3 through 5 than did the students in the traditionally instructed group (35.5%).

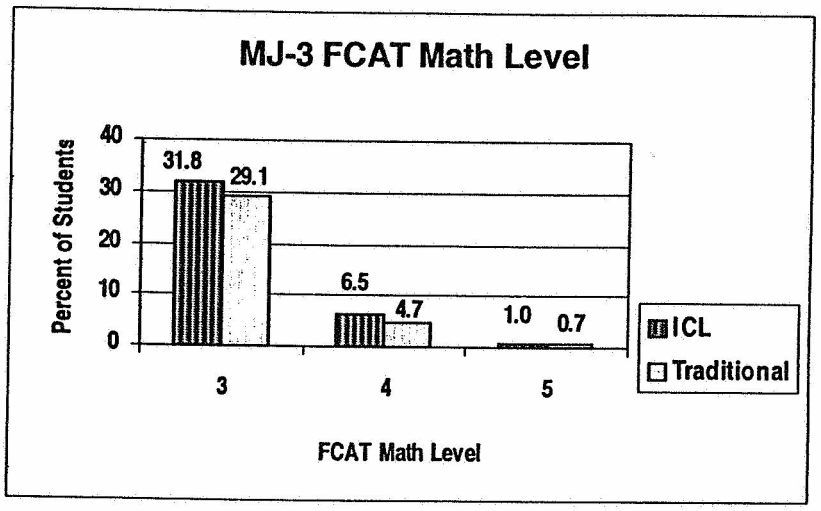
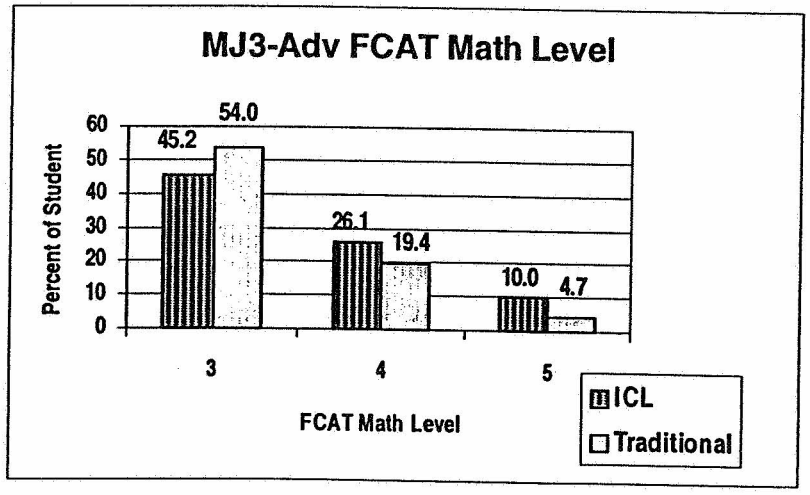


Figure 7: Frequency of MJ-3 Students Earning *FCAT* Math Level 3 or Higher



Overall, a larger proportion of *I Can Learn* students in MJ-3 Advanced (81.3%) earned a Level 3 or higher than did their peers in the traditionally instructed group (78.1%). Additionally, over twice as many *I Can Learn* students earned a Level 5 than did students in the traditionally instructed group.

gure 8: Frequency of MJ-3 Advanced Students Earning *FCAT* Math Level 3 or Higher

Group Differences by Course of Students Scoring a Level 3 or Higher

Table 8 presents data collected from students involved in the matched pair study. For every student scoring a Level 3 or higher on the *FCAT* Math, the *FCAT* Math scale score was obtained. The largest difference in scale score mean (6.31) was found between the groups in Algebra I, favoring the *I Can Learn* students. The difference of 4.62, favoring the *I Can Learn* group, was found in MJ-3 Advanced. Algebra I Honors was the only course where the difference (5.35) favored the traditionally instructed group. Statistical tests indicate that differences between the groups in Algebra I and MJ-3 Advanced are statistically significant at the 0.05 level. The evidence indicates the difference between the *I Can Learn* group and the traditionally instructed group is too great to attribute to chance. Factors, such as the effect of the *I Can Learn* Program, may have contributed to the higher success of the students in this group.

Table 8: Test for Equality of Means for Students Scoring a Level 3 or Higher on *FCAT* Math

			FCAT SCALE SCORE LEVEL 3 OR HIGHER		t-test for Equality of Means			
Course	Class	Number	Mean	SD	Mean Dif	Std. Error(dif)	F	p
Algebra I	ICL	137	355.9	27.4	-6.31	3.09	-2.041	.042
	Trad	146	349.6	24.6				
Algebra I Honors	ICL	136	373.2	34.7	5.35	4.02	1.329	.185
	Trad	164	378.5	34.7				
MJ-3	ICL	241	330.4	16.6	-0.54	1.42	-0.377	.706
	Trad	245	329.9	14.7				
MJ-3 Advanced	ICL	183	344.3	22.8	-4.62	2.30	-2.026	.045
	Trad	166	339.7	19.8				

Survey Results: Student

Students were administered a survey in December of the 2000-2001 school year. The survey addressed a number of dimensions directed towards the students' attitudes, confidence, learning, and use of equipment. Students were asked to respond to multiple choice items using a scale from strongly agree to strongly disagree, as well as two free response items. Table 7 presents data on some multiple choice survey items that reported the students' perceptions about their confidence in using the computer software and in learning mathematics. A copy of the Student Survey and all the item results can be found in Appendix E.

Multiple Choice Highlights

A design feature of the *I Can Learn* Software is the individualized instructional environment provided for students. The role of the classroom teacher is to support the needs of students as they arise. As shown in Table 9, almost all the students (86.0%) were in agreement about their liking the way they can complete the *I Can Learn* lessons as fast or as slowly as they want and about 79% of the students agreed that the classroom teacher answered their questions. Most the students (79.0%) agreed that the *I Can Learn* lessons are easy to use. Most students agreed that using the *I Can Learn* lessons made learning mathematics easy (77.2%) and that they are confident they can score high on the end of semester test (72.1%). A majority of students agreed they are looking forward to going to mathematics class this year because of the computer classroom (64.3%). When asked about their readiness for the challenge of taking next year's course in mathematics, a majority of students agreed their they ready (62.6%).

Table 9: Student Responses to Computer Use and Learning in the *I Can Learn* Classroom

	Survey Item	Student Survey Results Total = 1532)				
		Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
		%	%	%	%	%
#4	Using the *I Can Learn* lessons makes learning mathematics easy. 77	27.9	49.3	12.3	4.8	5.2
#8	The classroom teacher answers my questions whenever I get stuck. 79	37.9	41.1	9.6	7.6	3.4
#9	I like the way I can complete the *I Can Learn* lessons as fast or as slowly as I want. 86	52.7	33.3	6.1	5.5	2.3
#11	The *I Can Learn* lessons are easy to use. 79	36.6	42.7	11.6	4.9	3.5
#15	The *I Can Learn* classroom helped me realize I can do mathematics	23.6	38.7	16.8	11.4	9.0
#17	I am confident I can score high on the end of semester test. 72	32.6	39.5	8.7	4.9	13.4
#18	I look forward to going to mathematics class this year because of the computer classroom.	25.3	39.0	16.6	9.9	8.4
#19	I feel ready for the challenge when I think about taking next year's course in mathematics.	21.7	40.9	15.4	6.9	13.3

Open - ended Responses

As part of the survey distributed to the *I Can Learn* classrooms, students were asked to comment about what they liked best and least about the program. In all, 1930 favorable and 1660 unfavorable responses were compiled and are reflective of the multiple comments that some students offered. All the comments made by students are categorized and can be found in tables in Appendix E.

Favorable Responses

More than one fourth of the comments made by students favored the freedom they have in the *I Can Learn* ıssroom when controlling their own learning. Students enjoyed being able to learn various lessons at their own pace, repeat lessons they have difficulty with, and pause lessons in order to take notes or ask questions. As seen in Table 10, about 13% of the comments made by students suggested they enjoyed the type of instruction the program offers. The responses suggested that students were delighted the program is presented by instructors and they enjoyed learning from the program.

Table 10: Student Survey Comments: What They Liked Best

What do you like *best* about the *I Can Learn* classroom used in your mathematics class this year?		
Component	Total (1930)	%
Control	522	27.0
Enjoyment of Instruction	253	13.1
Easy to Use	197	10.2

Unfavorable Responses

Students were asked to comment on what they liked least about the program. Their responses were categorized and presented in a table found in Appendix E. Table 11 presents the categories formed by student responses. The most frequent response made regarding what students liked least about the *I Can Learn* program concerned the classroom environment. Concerns expressed by students included uncomfortable earphones and airs, computer monitor positioning, and lack of ample desk and leg space. Many of those students also dislike the warm temperature in the classroom due to the computer use throughout the day. About 11% of the comments suggested that the presentations were confusing, boring, annoying, or repetitious. Curricular comments referred to homework, the amount of work to do, the format of tests and requirements for journals and folders.

Table 11: Student Survey Comments: What They Liked Least

What do you like *least* about the *I Can Learn* classroom?		
Component	**Total (1660)**	**%**
Environment	465	28.0
Presentations	189	11.4
Inconsistency in Answers and Questions	132	8.0
Curricular	130	7.8

Survey Results: Teacher

Teachers were administered a survey in December of the 2000-2001 school year. The survey addressed a number of dimensions directed towards mathematics instruction, student learning, student confidence, the work environment, overall satisfaction, and use of the reports. Teachers were asked to respond to 36 multiple choice items using a scale from strongly agree to strongly disagree, as well as two free response items. A copy of the Teacher Survey and all the item results can be found in Appendix F.

Demographics

Table 12 presents demographic information about the teachers who responded to the survey administered in December. Typically, a teacher has over 7 years of mathematics teaching experience, is self-taught in technology, and has more than 45 minutes in a period for instruction.

Table 12 : Teacher Demographics - Survey Results

Teacher Characteristics Survey Result Frequencies				
Number of Years Teaching Mathematics	4 (less than 3 years)	4 (3 to 7 years)	10 (over 7 years)	
Number of semester hours completed in technology	7 (None-Self taught)	3 (less than 6)	4 (6-18 hours)	4 (over 18 hours)
Number of minutes in a period	7 (45min)	3 (55 min)	4 (80 min)	4 (90 min)

Teacher Perception Highlights on Mathematics Instruction

Table 13 presents some of the data collected from teachers about their perceptions regarding mathematics instruction. When teachers were asked about the video instruction seen by the student, almost all the teachers agreed that it was what they would do in a traditional classroom (89.9%). A similar percent agreed that students were clearly learning mathematics (88.9%)

Table 13: Teacher Survey Results: Mathematics Instruction

Item	Mathematics Instruction	Strongly Agree		Agree		Disagree		Strongly Disagree		Don't Know	
		N	%	N	%	N	%	N	%	N	%
4	The video instruction as seen by the student is similar to what I would do in a traditional classroom.	6	33.3	10	56.6	1	5.6	1	5.6		
9	Students are actively using the workstation for learning.	8	44.4	10	56.6						
10	Students appear to be academically challenged when using the computer classroom.	10	56.6	7	38.9	1	5.6				
18	Students are clearly learning mathematics.	5	27.8	11	61.1	2	11.1	0	0.0		

Teachers were asked to comment on what advantages they found when using the *I Can Learn* classroom to teach mathematics. A list of all the responses made by teachers can be found in Appendix H. Many of the comments suggested that the opportunity for students to work at their own pace was an advantage. As a result, students exhibited greater confidence in their ability to do mathematics, less distractions, fewer disciplinary problems, and the ability to repeat lessons. A teacher also suggested that ESOL and ESE students were more successful. The reporting system was mentioned as an advantage by teachers. Some teachers mentioned the ability to help students individually as an advantage.

Teachers were also asked to comment on their concerns. Often, the teachers mentioned errors within the software as a concern. Time was a concern for a few teachers, particularly the 45 minute period, which was suggested as not enough to move through the curriculum. Some teachers also believed that less independent and academically challenged students had difficulty in using the software. A traditional classroom may need to be provided for students who do not do well on the *I Can Learn* system.

Highlights of Teacher Overall Satisfaction

As seen in Table 14, teachers' overall satisfaction is presented from the multiple choice items. Almost all the teachers were satisfied with their decision to use the computer system for teaching mathematics and would like to use it again next year. Almost all the teachers expressed satisfaction with the Algebra I software (94.5%) and most teachers were satisfied with the Pre-Algebra I software (77.8%). Less than half the teachers agreed there were sufficient minutes in a period to complete at least one lesson. About a third of the teachers agreed the *I Can Learn* lessons have been useful for showing them how to teach mathematics.

Table 14: Teacher Survey Results: Overall Satisfaction

Item	Overall Satisfaction	Strongly Agree		Agree		Disagree		Strongly Disagree		Don't Know	
		N	%	N	%	N	%	N	%	N	%
7	The number of minutes in the period are sufficient for completing at least one lesson in the computer classroom.	4	22.2	4	22.2	5	27.8	5	27.8		
17	The *I Can Learn* lessons have been useful for showing me how to teach mathematics.	2	11.1	5	27.8	5	27.8	6	33.3		
20	Overall, I am satisfied with the progress of my students.	4	22.2	9	50.0	3	16.7				
21	Overall, I am satisfied with my decision to use this computer system for teaching mathematics.	9	50.0	7	38.9	2	11.1				
22	I would like to use this computer classroom for teaching mathematics again next year.	12	66.7	5	27.8	1	5.6				
23	I am generally satisfied with the Algebra I software provided in the ICL classroom.	5	27.8	12	66.7					1	5.6
24	I am generally satisfied with the Pre-Algebra software provided in the ICL classroom.	3	16.7	11	61.1	2	11.1			1	5.6

Usefulness of I Can Learn for Professional Development

The responses from teachers about the usefulness of the *I Can Learn* classes as a professional development tool can be found below in Table 15. Most teachers under 7 years of experience found the lessons to be useful for showing them how to teach mathematics.

Table 15: Use of the *I Can Learn* Classroom for Professional Development

The *I Can Learn* lessons have been useful for showing me how to teach mathematics.					
Years of Experience in Teaching Mathematics	Strongly Agree	Agree	Disagree	Strongly Disagree	N
less than 3 years	1	2	1		4
3 to 7 years	1	2		1	4
over 7 years		1	4	5	10
Total	2	5	5	6	18

Although teachers received training on the operation of the software and hardware, the implementation process did not include an instructional component. The *I Can Learn* teachers met throughout the school year to scuss instructional and technical concerns. Information collected during these sessions was aggregated and compiled by the middle school mathematics supervisor. A few *I Can Learn* classes were video taped for use as an instructional tool during the training of teachers new to the *I Can Learn* classroom. In addition, all *I Can Learn* teachers were administered a survey at the end of the year asking them to reflect on what strategies may be more effective while using the *I Can Learn* classroom. Classroom observations, periodic teacher talk sessions, and survey data contributed to defining a more uniform instructional practice for the second year of implementation. A copy of the Best Practices Survey and complete results can be found in Appendix G.

Teacher Perception Highlights on Facilitating Instruction

Table 16 below, presents teacher survey data regarding their perceptions about the effectiveness of strategies used in the *I Can Learn* classroom. Regular use of a notebook was perceived to be an effective means of facilitating instruction by all of the teachers. Using review sheets was considered to an effective strategy by 69% of the teachers. A majority of teachers (63%) believed that students were self-motivated by viewing various types of reports hung in the room. Almost all the teachers perceived the computer-generated reports to be a useful tool for informing students of their progress.

Table 16: Teacher Survey Results: Effective Practices

Facilitating Instruction		Effective									
		Highly		Mostly		Slightly		Not		Do not know	
		n	%	n	%	n	%	n	%	n	%
F1	Regular use of notebook must be enforced during class.	15	94	1	6						
F2	Supplemental worksheets for reviewing are used periodically.	4	25	7	44	4	25	1	6		
F6	The course textbook is used regularly for homework assignments.	3	19	2	13	5	31	3	19	3	19
MO8	Students are self-motivated by various types of reports hung in room.	8	50	2	13	4	25			2	13
MO12	The computer generated reports are a useful tool for informing students of their progress.	10	63	4	25	1	6	1	6		

Teacher Method of Instructional Delivery

In addition to scaling the effectiveness of strategies identified in the first part of the Best Practices Survey, teachers were asked to reflect on the past year of instruction and comment on strategies they noted as particularly effective in the *I Can Learn* environment. About 21 teachers were involved in the study during the 2000-2001 school year and 16 teachers responded to the survey administered at the end of the year.

Teachers were asked to communicate a description of their method of the instructional delivery used in the *I Can Learn* computer classroom through a multiple choice selection or by written comment. As seen in Table 17, half the teachers used the *I Can Learn* software as the primary source of instruction and they assisted by tutoring. Five teachers used a balance of teacher and computer delivered instruction and one teacher delivered the instruction using the *I Can Learn* software to supplement the instruction. Two teachers chose to elaborate their method of instructional delivery in the *I Can Learn* classroom.

Table 17: Frequency of Instructional Delivery Used in the *I Can Learn* Classroom

Teacher Instructional Practice	
Number	**Instructional Delivery**
8	The ICL software is the primary source of instruction and I assist by tutoring.
1	I deliver the instruction using course textbooks and the ICL software to supplement the instruction.
5	I use a balance of teacher and computer delivered instruction
2	Other - Please describe

Some teachers further elaborated after choosing an instructional delivery method. The comments made by teachers are:

- *I use a balance of teacher and computer delivered instruction; sometimes the ICL software is the primary source of instruction and I assist by tutoring; everything depends on the student,*
- *I deliver the instruction using the course textbooks and then the ICL software to supplement the instruction; this method is used for Algebra I Honors,*
- *use both methods: the ICL software is the primary source of instruction and I assist by tutoring or I deliver the instruction using course textbooks using the ICL software to supplement the instruction.)*
- *The ICL software is the primary source of instruction and I assist by tutoring was the primary method and I hope to spend more time next year lecturing vs. tutoring. I realize some of my students need that balance.*
- *I deliver the instruction using the course textbooks using the ICL software to supplement the instruction and I use a balance of teacher and computer delivered instruction.*
- *When the grade book indicates a problem with a particular lesson, I'll pull small groups or the entire class. Having had the experience this year, I've already got a good idea which concepts need to be addressed traditionally at the start of a new nine weeks.*

The teachers' response to the survey item demonstrates variability in the choice of instructional delivery used in the *I Can Learn* classroom. The inconsistent use of the *I Can Learn* program may have an effect on student outcomes as indicated by student achievement.

Teachers were asked to comment on other Best Practices Survey items which dealt with classroom procedures and instructional issues outside the evaluation. All the comments made by teachers are recorded and reported in Appendix G.

Survey Results
Parent

Parents were given a survey in November of the 2000-2001 school year. Surveys were given to students take home to their parents or guardians. The parent could return the survey to school with the student or mail the survey back in the addressed envelope given to them with the survey. About 10% of the parents returned the survey requesting their opinions about their child's progress in mathematics class. Parents were asked to compare their child's progress during the current year to last year's and respond to a scale using more or less than last year. A copy of the survey and all the results can be found in Appendix G.

Demographics

A total of 189 parents responded to the survey. Table 18 presents the racial makeup of the group. About 37% parents indicated their were White, 27% were Black, 27% were Hispanic and about 3% were Multi-racial.

Table 18: Parent Survey Demographics

Demographics - Parent Responses (Total-189)											
Black		White		Hispanic		Multi-Racial		Other		No Response	
N	%	N	%	N	%	N	%	N	%	N	%
51	27.0	70	37.0	50	26.5	6	3.2	8	4.2	4	2.1

Parent Overall Satisfaction

Table 19 below presents some highlights regarding parents' satisfaction with their child's progress in mathematics and the school's attempt to provide appropriate programs for their child. While a majority of parents were more pleased with their child's progress in mathematics this year than last, about a third of the parents were highly pleased. A majority of parents believed their child was more pleased this year about their progress in mathematics than last year. This year, about 57% of the parents who responded to the survey believe the school is working toward providing a mathematics program that is appropriate and beneficial for their child.

Table 19: Parent Survey - Item Frequencies

		Item Frequencies									
Item	Compared to last year....	A lot more than last year		A little more than last year		Same as last year		Less than last year		Don't Know	
		N	%	N	%	N	%	N	%	N	%
2	My child is pleased about his/her progress in math this year.	64	34	40	21	35	19	46	24	4	2
9	I believe the school is working toward providing a mathematics program that is appropriate and beneficial for my child.	76	40	32	17	24	13	40	21	17	9
11	Overall, I am happy with my child's progress in mathematics this year.	62	33	36	19	38	20	48	25	4	2.1

Open-ended Responses

Parents were asked to comment about how the computer class benefitted their child and if there were any concerns about the computer program used in the mathematics class. Table 20 presents some of the most frequent responses written by parents in categories. The most frequent response provided by the parents as a

benefit of the program was their child's increased comprehension. Parents also frequently mentioned motivation and the individualized pacing as benefits.

Table 20 also presents the three most frequently mentioned concerns of parents. Parents most often wrote there were no concerns while others expressed a concern for a real teacher and the lack of content planation. A few comments requested more information.

Table 20: Parent Responses Describing Benefit or Concerns of Program

Parent Responses (Categorized)		
How has the computer program used in mathematics class benefitted your child?		
	N (173 - Total)	%
Increased comprehension	32	18.5
Motivation	24	13.9
Individualized pacing	21	12.1
Do you have any concerns about the computer mathematics class?		
	N (Total=92)	%
No concerns	20	22.2
Need for a real teacher	11	12.0
Lack of content explanation	10	10.9
More information	10	10.9

EPGY
Education Program for Gifted Youth

The Education Program for Gifted Youth (EPGY) at Stanford University is a computer-based distance-learning course for gifted students in kindergarten through 12th grade. Courses use a combination of CD ROM and Internet technologies to provide gifted students with an individualized learning environment. The EPGY instructors provide support by telephone, electronic mail, and through a virtual classroom. Students can gain credit for EPGY courses through Stanford's Continuing Studies Program. Students who finish the Algebra I curriculum are invited to participate in the EPGY Program. The cost of the program for each student is provided by JRL Enterprises, Inc. while the District maintains a contract with the company for the *I Can Learn* system.

Ten students were finished with the Algebra I curriculum using the *I Can Learn* program by the end of first semester. Another fourteen students were admitted into the EPGY Program during the beginning of the second semester. Students could begin the Stanford EPGY Program if finished with the Algebra I curriculum by the beginning of February. Figure 9 displays the number of EPGY students at their obtained *FCAT* Math Level. Most students scored at Level 4 or higher with the greatest number of students earning Level 5 on the *FCAT* Math.

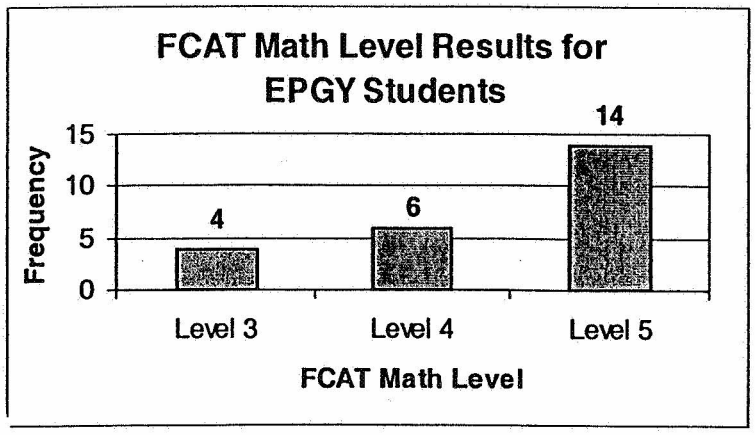


Figure 9: *FCAT* Math Level Results for EPGY Students

Discussion of Issues

The evaluation of the I Can Learn Program was conducted during the 2000-2001 school year. Various forms of data were collected in order to provide information regarding the effect of the program. The schools that implemented the program were eleven Title I middle schools and one high school. The essential question in the evaluation was whether the I Can Learn program has a direct and measurable influence on students' acquisition of mathematics at the middle school level. Teacher and student attitudes regarding the use of the computerized program were sought to provide an awareness of the value of the program within the context of the classroom. Parent survey data provided a component that supported student responses.

To study the effect of the I Can Learn Program, a formal study using appropriate statistical methods was conducted. The classroom was chosen as the unit of analysis and used for matching on a number of variables that are known to contribute to student achievement. The matched classes were the source of information that provided the data for the study for the 2000-2001 school year. Among the variables used for matching was the class mean for prior achievement. Means are known to be stable statistical measures and appropriate for use in matching classes. An Analysis of Covariance was used to measure the significance of the difference between groups, holding the students' prior achievement constant. A single statistical test should not, nor does it establish the practical importance of the results. The implementation of the *I Can Learn* classroom and its effect on student learning is a complex learning environment that may be affected by other variables not accounted for in a single statistical test.

In the District, about 58% of the 8th grade students were placed in Algebra I or Algebra I Honors during the 2000-2001 school year. Although some middle schools have a number of Algebra classes scheduled, most of the schools using the I Can Learn program have a single class of Algebra I or Algebra I Honors. As such, classes across the District were used for the matching procedure. Algebra classes in middle schools that draw from a lower socio-economic area were likely matched to Algebra classes in middle schools from higher socio-economic areas. The largest pool of classes used for matching was in MJ-3. As such, I Can Learn classes were matched to other traditionally instructed classes using the same matching procedure and whenever possible, were matched to MJ-3 classes scheduled within the same school.

To explore the contextual effect within the classes, data were disaggregated to the student level. Although the groups of classes were found to be comparable across all courses, a statistical difference was found in Algebra I and MJ-3 Advanced. The difference in *FCAT* scale score means favored the I Can Learn group of students in both Algebra I and MJ-3 Advanced. A result from this part of the study found that more students in the I Can Learn group scored a Level 3 and their scores were higher than did their peers in the traditionally instructed group in both Algebra I and MJ-3.

Triangulation is very often recommended when exploring a complex problem. A strategy in this methodology involves using different kinds of tests, administered at different points in time. In this study, district level and state level data were collected for analysis. The semester exams used in Algebra I and the cumulative tests used in the MJ-3 are District created tests that have

been through rigorous and extensive analyses prior to administration. The test items were created by District Algebra teachers and tested for content validity and reliability. The *FCAT* is a high stakes test for both the student and the school. School accountability grades are determined from the obtained student scale score. While the differences were not found to be statistically significant, the group mean for the I Can Learn classes was higher than the group mean for the traditionally instructed classes in all four courses used in the study. This result occurred at two different times of the year with two different types of assessments. Although the differences were not statistically significant, the observation should not be minimized and may suggest a tenable effect of the *I Can Learn* classroom.

Teacher survey data revealed variation in the implementation of the program. Guidelines that direct teachers on program implementation do not exist. The middle school supervisor held meetings throughout the school year to address issues and concerns associated with the program. The information gleaned from these meetings and the survey data collected at the end of the year helped to provided a more uniform outline of program delivery for the following year. The inconsistencies in program delivery among teachers may have had an impact on the effect of the program for student achievement.

Teacher survey data revealed another variable that may have impacted the I Can Learn Program. Ten out of eighteen teachers indicated that the number of minutes in the period were insufficient for completing at least one lesson in the computer classroom. It may be prudent to look closer at the amount of time provided at schools for implementing the program.

The following recommendations are suggested:

- Continue to study the *I Can Learn* classes using *FCAT* results for 8th grade.
- Evaluate the *I Can Learn* program at the high school level.
- Follow the *I Can Learn* students through the pupil progression plan in mathematics through at least Algebra II.
- Continue the current effort to define and monitor best instructional practices in the *I Can Learn* classroom.
- Investigate achievement for *I Can Learn* students across gender and ethnic groups.
- Commend the *I Can Learn* teachers for their consistent, year-long effort in learning how to facilitate the program and in their dedication to provide students with opportunities to realize their potential.

Appendix A

Algebra I

Matched Pair Class Means

Semester I Exam
FCAT Math Scale Score

Algebra I
Pre-Test and Post-Test Means
Semester I Exam and *FCAT* Math SSS

		Pre-Test	Post-Test	Pre-Test	Post-Test
Pair	Class	Mean 2000 *FCAT* NRT NCE Score	Semester I Exam Mean Raw Score = 70Points	Mean 2000 *FCAT* NRT NCE Score	Mean 2001 *FCAT* Math Scale Score
1	ICL	76.4	45.6 (65.1%)	76.4	347.6
	TRAD	71.6	49.3 (70.4%)	71.6	345.7
2	ICL	69.7	47.2 (67.4%)	69.7	350.6
	TRAD	73.7	44.0 (73.7%)	72.0	353.8
3	ICL	84.6	56.6 (80.9%)	84.6	378.7
	TRAD	84.7	56.6 (80.9%)	84.7	365.6
4	ICL	71.4	55.9 (79.9%)	71.4	363.9
	TRAD	76.5	49.7 (71.0%)	76.5	348.8
5	ICL	80.0	52.2 (74.6%)	80.0	357.9
	TRAD	75.4	46.5 (66.4%)	75.4	336.4
6	ICL	66.0	44.8 (64.0%)	66.0	344.8
	TRAD	62.4	42.3 (60.4%)	62.4	344.6
7	ICL	62.8	49.3 (70.4%)	62.8	334.2
	TRAD	68.4	50.3 (71.9%)	72.9	338.6
8	ICL	52.7	45.1 (64.5%)	53.4	331.0
	TRAD	50.5	51.5 (73.6%)	50.5	329.6

Appendix B

Algebra I - Honors

Matched Pair Class Means

Semester I Exam
FCAT Math Scale Score

Algebra I - Honors
Pre-Test and Post-Test Means
Semester I Exam and *FCAT* Math SSS

Pair	Class	Pre-Test: Mean 2000 *FCAT* NRT NCE Score	Post-Test: Semester I Exam Mean Raw Score = 65 Points	Pre-Test: Mean 2000 *FCAT* NRT NCE Score	Post-Test: Mean 2001 *FCAT* Math Scale Score
1	ICL	88.8	35.6 (54.8%)	88.8	374.6
	TRAD	90.5	52.7 (81.1%)	90.5	390.2
2	ICL	84.0	45.0 (69.2%)	84.0	368.9
	TRAD	81.9	33.6 (51.7%)	81.9	372.3
3	ICL	88.6	55.0 (84.6%)	88.6	393.5
	TRAD	89.5	57.9 (89.1%)	89.5	399.9
4	ICL	84.5	43.8 (67.4%)	84.5	366.3
	TRAD	84.5	47.7 (73.4%)	84.5	369.3
5	ICL	78.8	54.7 (84.2%)	78.8	383.1
	TRAD	75.4	36.4 (56.0%)	75.4	350.9
6	ICL	83.1	49.1 (75.5%)	83.1	377.1
	TRAD	90.3	55.4 (85.2%)	90.3	396.8
7	ICL	70.0	38.8 (59.7%)	69.9	356.9
	TRAD	70.4	38.6 (59.4%)	70.4	353.0
8	ICL	76.7	47.0 (72.3%)	76.7	373.5
	TRAD	75.2	37.4 (57.5%)	75.1	351.6

Appendix C

MJ-3 - Advanced

Matched Pair Class Means

Cumulative Test Raw Score
FCAT Math Scale Score

MJ3 - Advanced
Pre-Test and Post-Test Means
Semester I Cumulative Test and 2001 *FCAT* Math SSS

		Pre-Test	Post-Test	Pre-Test	Post-Test
Pair	Class	Mean 2000 *FCAT* NRT NCE Score	Mean Cumulative Test Raw Score (%) (Total points = 50)	Mean 2000 *FCAT* NRT NCE Score	Mean 2001 *FCAT* Math Scale Score
1	ICL	55.6	32.2 (64.4%)	55.6	332.0
	TRAD	52.9	39.6 (79.2%)	52.9	330.3
2	ICL	54.5	29.3 (58.6%)	54.5	316.7
	TRAD	52.6	26.3 (52.6%)	52.2	311.8
3	ICL	69.7	40.8 (81.6%)	69.7	358.0
	TRAD	67.2	34.2 (68.4%)	67.2	340.4
4	ICL	69.2	35.3 (70.6%)	69.2	335.7
	TRAD	67.1	32.4 (64.8%)	67.1	342.1
5	ICL	68.3	32.7 (65.4%)	68.3	337.6
	TRAD	66.1	35.0 (70.0%)	66.1	336.2
6	ICL	66.9	34.7 (69.4%)	66.9	342.6
	TRAD	65.4	35.9 (71.8%)	65.4	324.3
7	ICL	56.0	39.8 (79.6%)	56.0	322.2
	TRAD	57.0	32.9 (65.8%)	57.0	322.9
8	ICL	44.8	25.6 (51.2%)	44.8	323.0
	TRAD	45.7	28.3 (56.6%)	45.1	310.9
9	ICL	58.4	28.3 (56.6%)	58.4	318.7
	TRAD	54.8	29.8 (59.6%)	54.8	318.6
10	ICL	50.4	32.2 (64.4%)	50.4	327.9
	TRAD	51.2	33.2 (66.4%)	51.2	324.0

Appendix D

MJ-3

Matched Pair Class Means

Cumulative Test Raw Score
FCAT Math Scale Score

MJ-3
Pre-Test and Post-Test Means
Semester I Cumulative Test and 2001 *FCAT* Math SSS

		Pre-Test	Post-Test	Pre-Test	Post-Test
Pair	Class	Mean 2000 *FCAT* NRT NCE Score	Mean Semester I Cumulative Test Raw Score (Total points = 50) Raw Score (%)	Mean 2000 *FCAT* NRT NCE Score	Mean 2001 *FCAT* Math Scale Score
1	ICL	36.0	30.4 (60.8%)	36.0	286.8
	TRAD	35.6	27.0 (54.0%)	35.6	290.2
2	ICL	36.4	27.7 (55.4%)	36.8	287.4
	TRAD	37.7	33.0 (66.0%)	39.0	291.4
3	ICL	36.0	29.8 (59.6%)	33.4	292.3
	TRAD	38.6	27.7 (38.6%)	33.6	273.8
4	ICL	33.9	32.4 (64.8%)	55.3	334.1
	TRAD	33.6	27.1 (54.2%)	53.5	307.0
5	ICL	55.3	38.7 (77.4%)	49.6	313.3
	TRAD	53.5	33.4 (66.8%)	50.9	318.9
6	ICL	49.6	32.3 (64.6%)	49.1	307.9
	TRAD	50.4	40.1 (80.2%)	50.5	308.5
7	ICL	49.4	32.1 (64.2%)	49.1	335.4
	TRAD	50.5	37.7 (75.4%)	47.2	299.3
8	ICL	49.1	35.9 (71.8%)	47.2	312.5
	TRAD	47.2	29.3 (58.4%)	50.5	305.8
9	ICL	48.5	33.1 (66.2%)	48.1	309.2
	TRAD	50.5	28.7 (57.4%)	45.5	299.2
10	ICL	47.0	35.7 (71.4%)	46.4	302.5
	TRAD	48.4	27.5 (55.0%)	46.4	304.4
11	ICL	46.4	29.1 (58.2%)	43.8	308.6
	TRAD	46.4	32.5 (65.0%)	44.4	293.7
12	ICL	43.8	29.2 (58.4%)		
	TRAD	43.9	21.2 (42.4%)		
13	ICL	44.2	33.7 (67.4%)	45.7	304.1
	TRAD	47.0	38.1 (76.2%)	49.1	310.6
14	ICL	41.9	25.4 (50.8%)	41.9	284.7
	TRAD	43.9	26.2 (52.4%)	43.9	302.9
15	ICL	41.9	29.9 (59.8%)	41.9	298.6
	TRAD	41.2	33.6 (67.2%)	42.1	314.1
16	ICL	41.2	31.4 (62.8%)	42.8	297.2
	TRAD	39.1	24.6 (49.2%)	39.4	288.4
17	ICL	40.2	27.7 (55.4%)	40.2	289.8
	TRAD	35.4	26.6 (53.2%)	35.4	279.0

Continued from previous page'

MJ-3
Pre-Test and Post-Test Means
Semester I Cumulative Test and 2001 *FCAT* Math Score

		Pre-Test	Post-Test	Pre-Test	Post-Test
Pair	Class	Mean 2000 *FCAT* NRT NCE Score	Mean Semester I Cumulative Test Raw Score (Total points = 50) Raw Score (%)	Mean 2000 *FCAT* NRT NCE Score	Mean 2001 *FCAT* Math Scale Score
18	ICL	41.3	25.8 (51.6%)	42.1	285.1
	TRAD	38.8	39.4 (78.8%)	38.8	304.7
19	ICL	37.4	25.0 (50.0%)	37.3	278.7
	TRAD	38.0	32.4 (64.8%)	38.0	293.1
20	ICL	39.8	29.0 (58.0%)	39.8	286.1
	TRAD	33.3	33.7 (67.4%)	33.3	293.2
21	ICL	37.8	27.8 (55.6%)	37.8	263.9
	TRAD	36.0	36.8 (73.6%)	36.0	276.4
22	ICL	31.9	26.6 (53.2%)	31.9	274.1
	TRAD	32.0	31.1 (62.2%)	31.7	280.5
23	ICL	29.5	26.8 (53.6%)	29.5	281.8
	TRAD	31.1	29.5 (59.0%)	31.1	289.6
24	ICL	43.8	34.5 (69.0%)	43.8	314.3
	TRAD	42.9	29.4 (58.8%)	42.5	288.3
25	ICL	46.4	34.0 (68.0%)	46.4	309.7
	TRAD	53.9	41.2 (82.4%)	43.9	305.8
26	ICL	43.6	29.2 (58.4%)	45.1	300.7
	TRAD	44.6	25.1 (50.2%)	44.6	300.4
27	ICL	43.9	41.8 (83.6%)	43.9	296.2
	TRAD	49.8	25.2 (50.4%)	49.8	283.0
28	ICL	41.9	29.9 (59.8%)	41.9	298.9
	TRAD	43.0	34.5 (69.0%)	43.0	299.5
29	ICL	41.2	31.2 (62.4%)	41.0	293.4
	TRAD	43.1	32.6 (65.2%)	43.1	312.9
30	ICL	40.4	28.8 (57.6%)	40.4	298.3
	TRAD	40.8	31.1 (62.2%)	39.6	294.9
31	ICL	39.1	27.0 (54.0%)	39.1	312.2
	TRAD	40.2	34.8 (69.6%)	40.2	281.3
32	ICL	38.3	39.0 (78.0%)	38.3	284.9
	TRAD	37.7	26.4 (52.8%)	37.7	265.5
33	ICL	35.2	43.8 (87.6%)	35.2	293.8
	TRAD	34.1	23.4 (46.8%)	34.1	264.5

Appendix E

Student Survey

and

Results

I Can Learn - Student Survey

- Are you scheduled in Algebra?
  A) Yes - Algebra I B) Yes - Algebra I-Honors C) No

- If not in Algebra, then what course are you scheduled in?
  A) MJ3 B) MJ3-Adv C) MJ2 D) MJ2-Adv E) Other

- What is your gender? A) Female B) Male

Please respond to the following items using the scale below.
A) Strongly Agree B) Agree C) Disagree D) Strongly Disagree E) Don't Know

4. Using the *I Can Learn* lessons makes learning mathematics easy.
5. I have finished more lessons in my *I Can Learn* classroom than my friends who are in not in the *I Can Learn* classroom.
6. I try to use the *I Can Learn* classroom at different times of the day than my regularly scheduled math class.
7. My notebook is important for taking notes, practice and studying for tests.
8. The classroom teacher answers my questions whenever I get stuck.
9. I like the way I can complete the *I Can Learn* lessons as fast or as slowly as I want.
10. I would like to use the *I Can Learn* classroom for math next year.
11. The *I Can Learn* lessons are easy to use.
12. The monitor is in a good position for viewing.
13. There is ample desk space in the computer classroom for learning.
14. The earphones are comfortable.
15. The *I Can Learn* classroom helped me realize I can do mathematics.
16. The grade I earned really represents the amount of mathematics skill I have.
17. I am confident I can score high on the end of semester test.
18. I look forward to going to mathematics class this year because of the computer classroom.
19. I feel ready for the challenge when I think about taking next year's course in mathematics.
20. What do you like ***best*** about the *I Can Learn* classroom used in your mathematics class this year?

_____

_____

_____

21. What do you like ***least*** about the *I Can Learn* classroom? _____

_____

_____

_____

Use the back page if you wish to write more.

Student Survey Results (Total =1532)													
Survey Item		Strongly Agree		Agree		Disagree		Strongly Disagree		Don't Know		Missing	
		N	%	N	%	N	%	N	%	N	%	N	%
#4	Using the *I Can Learn* lessons makes learning mathematics easy.	427	27.9	756	49.3	188	12.3	74	4.8	79	5.2	8	0.5
#5	I have finished more lessons in my *I Can Learn* classroom than my friends who are in not in the *I Can Learn* classroom.	318	20.8	381	24.9	150	9.8	68	4.4	612	39.9	3	0.2
#6	I try to use the *I Can Learn* classroom at different times of the day than my regularly scheduled math class.	139	9.1	327	21.3	550	35.9	324	21.1	175	11.4	17	1.1
#7	My notebook is important for taking notes, practice and studying for tests.	783	51.1	599	36.5	90	5.9	65	4.2	31	2.0	0	0.0
#8	The classroom teacher answers my questions whenever I get stuck.	581	37.9	629	41.1	147	9.6	116	7.6	52	3.4	0	0.0
#9	I like the way I can complete the *I Can Learn* lessons as fast or as slowly as I want.	805	52.7	510	33.3	93	6.1	84	5.5	36	2.3	4	0.3
#10	I would like to use the *I Can Learn* classroom for math next year.	737	48.1	354	23.1	136	8.9	183	11.9	114	7.4	8	0.5
1	The *I Can Learn* lessons are easy to use.	561	36.6	654	42.7	178	11.6	75	4.9	54	3.5	10	0.6
#12	The monitor is in a good position for viewing.	369	24.1	656	42.8	239	15.6	195	12.7	64	4.2	9	0.9
#13	There is ample desk space in the computer classroom for learning.	303	19.8	684	44.6	241	15.7	144	9.4	148	9.7	12	0.8
#14	The earphones are comfortable	211	13.8	446	27.2	395	25.8	473	30.9	32	2.1	5	0.3
#15	The *I Can Learn* classroom helped me realize I can do mathematics	361	23.6	593	38.7	257	16.8	175	11.4	138	9.0	8	0.5
#16	The grade I earned really represents the amount of mathematics skill I have.	369	24.1	530	34.6	282	18.4	195	12.7	147	9.6	9	0.6
#17	I am confident I can score high on the end of semester test.	499	32.6	605	39.5	134	8.7	75	4.9	205	13.4	14	0.9
#18	I look forward to going to mathematics class this year because of the computer classroom.	387	25.3	597	39.0	254	16.6	152	9.9	129	8.4	13	0.8
#19	I feel ready for the challenge when I think about taking next year's course in mathematics.	332	21.7	627	40.9	236	15.4	105	6.9	204	13.3	28	1.8

Student Survey Comments: What They Liked Best	
What do you like *best* about the *I Can Learn* classroom used in your mathematics class this year?	
Category	**Total**
Control	522
Enjoyment of Instruction	253
Easy to Use	197
Use of Computer (general)	168
Use of Computer versus Text	165
Explanations	121
Environment	99
Pretests	55
Do Not Like	48
Test/Quiz Design	46
Unsure	45
Grade Improvement	34
Like the Program	29
Correction of Mistakes	26
Teacher	26
Ability to Use Teacher	24
Individualized	20
Study Guides and/or Notes	18
Topics	10
Use of Calculators	10
Ahead of Others in Class	7
Challenge of the Program	6
Whole-class Instruction	1

Student Survey Comments: What They Liked Least	
What do you like *least* about the *I Can Learn* classroom?	
Category	**Total**
Environment	465
Presentations	189
Inconsistency in Answers and Questions	132
Curricular	130
Requirements to Pass the Lessons	105
Needs More Explanation	96
Liked the Program	95
Completion Time	82
Unsure	73
Difficulty in Lessons	57
Disliked the Program	49
Prefer a Standard Classroom to the Computer	41
Lacks Ability to Answer Questions	34
Unreliability in Testing	14
Classroom Setting/ Teacher	13
Control	12
Lack of Learning/ Improving in Math Skills	12
Supplemental Book Work/ Homework	11
Math, in general	10
Not enough work on the Computer	10
Inability to do a Partial Lesson	9
Not Enough Help from Teacher	8
Lack of Supplemental Materials	6
Problems with Software	3
Topics	2
Classroom Work does not measure actual knowledge	1
Frustration	1

Appendix F

Teacher Survey

and

Results

ICL Teacher Survey

Demographics

How many years have you taught mathematics?

A) less than 3 years B) 3 to 7 yearsC) over 7 years

How many semester hours of course work in technology have you completed?

A) none-self taught B) under 6 semester hours

C) 6 to 18 hours D) over 18 hours

How many minutes do you have in a period at your school?

A) 45 B) 55 C) 80 D) 90

Please respond to the following items using the scale below.

A) Strongly Agree B) Agree C) Disagree D) Strongly Disagree E) Don't Know

4. The video instruction as seen by the student is similar to what I would do in a traditional classroom.
5. The Pre-Algebra video lessons provide students with varied experiences that help them appreciate mathematics in the real world.
6. The Algebra video lessons provide students with varied experiences that help them appreciate mathematics in the real world.
7. The number of minutes in the period are sufficient for completing at least one lesson in the computer classroom.
8. Students must use their notebooks to take notes, practice problems and study for tests.
9. Students are actively using the workstation for learning.
10. Students appear to be academically challenged when using the computer classroom.
11. Students' confidence in their mathematical ability is high.
12. Students appear to be satisfied with the use of the computer for learning.
13. Competition between students has increased.
14. Some students request additional time on the computer other than the scheduled math class.
15. The level of damage to the student work area is minimal.
16. Students appear to be less disruptive during class.
17. The *I Can Learn* lessons have been useful for showing me how to teach mathematics.
18. Students are clearly learning mathematics.
19. Students appeared comfortable with the use of the computer in their learning process.
20. Overall, I am satisfied with the progress of my students.

Over

A) Strongly Agree B) Agree C) Disagree D) Strongly Disagree E) Don't Know

. Overall, I am satisfied with my decision to use this computer system for teaching mathematics.

22. I would like to use this computer classroom for teaching mathematics again next year.

23. I am generally satisfied with the Algebra I software provided in the ICL classroom.

24. I am generally satisfied with the Pre-Algebra software provided in the ICL classroom.

25. The Algebra I software used in the course was free of errors.

26. The Pre-Algebra software used in the course was free of errors.

27. The problems with software were dealt with promptly by company representatives.

28. Students found most of the errors while using the computer software.

29. The chairs have stood up to student wear.

30. Down time for hardware repair was so lengthy that it affected the instructional time for students.

31. The problems with equipment were dealt with promptly by company representatives.

32. Telephone lines are ready for student use to connect with Stanford University.

33. The reports are useful in determining student's progress.

34. Reports were useful when used to explain student progress to parents.

35. Student behavior is evidenced in the reports.

36. The reports are useful tools for planning purposes.

37. What have you found to be some advantages of using the ICL computer system for teaching mathematics?

38. What are your concerns?

Teacher Survey Results

	Item	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
		n (%)	n (%)	n (%)	n (%)	n (%)
1	The video instruction as seen by the student is similar to what I would do in a traditional classroom.	6 (33.3)	10 (56.6)	1 (5.6)	1 (5.6)	
5	The Pre-Algebra video lessons provide students with varied experiences that help them appreciate mathematics in the real world.	5 (27.8)	9 (50.0)	3 (16.7)		1 (5.6)
6	The Algebra video lessons provide students with varied experiences that help them appreciate mathematics in the real world.	3 (16.7)	9 (50.0)	3 (16.7)	1 (5.6)	2 (11.1)
7	The number of minutes in the period are sufficient for completing at least one lesson in the computer classroom.	4 (22.2)	4 (22.2)	5 (27.8)	5 (27.8)	
8	Students must use their notebooks to take notes, practice problems and study for tests.	12 (66.7)	6 (33.3)			
9	Students are actively using the workstation for learning.	8 (44.4)	10 (55.6)			
10	Students appear to be academically challenged when using the computer classroom.	10 (55.6)	7 (38.9)	1 (5.6)		
11	Students' confidence in their mathematical ability is high.	3 (16.7)	7 (38.9)	8 (44.4)		
12	Students appear to be satisfied with the use of the computer for learning.	6 (33.3)	10 (55.6)	2 (11.1)		
13	Competition between students has increased.	8 (44.4)	8 (44.4)	1 (5.6)	1 (5.6)	
14	Some students request additional time on the computer other than the scheduled math class.	7 (38.9)	10 (55.6)	1 (5.6)		
15	The level of damage to the student work area is minimal.	4 (22.2)	13 (72.2)		1 (5.6)	
16	Students appear to be less disruptive during class.	6 (33.3)	11 (61.1)		1 (5.6)	
17	The *I Can Learn* lessons have been useful for showing me how to teach mathematics.	2 (11.1)	5 (27.8)	5 (27.8)	6 (33.3)	
18	Students are clearly learning mathematics.	5 (27.8)	11 (61.1)	2 (11.1)		
19	Students appeared comfortable with the use of the computer in their learning process.	6 (33.3)	11 (61.1)	1 (5.6)		
20	Overall, I am satisfied with the progress of my students.	4 (22.2)	9 (50.0)	3 (16.7)		
21	Overall, I am satisfied with my decision to use this computer system for teaching mathematics.	9 (50.0)	7 (38.9)	2 (11.1)		
22	I would like to use this computer classroom for teaching mathematics again next year.	12 (66.7)	5 (27.8)	1 (5.6)		
3	I am generally satisfied with the Algebra I software provided in the ICL classroom.	5 (27.8)	12 (66.7)			1 (5.6)
24	I am generally satisfied with the Pre-Algebra software provided in the ICL classroom.	3 (16.7)	11 (61.1)	2 (11.1)		1 (5.6)
25	The Algebra I software used in the course was free of errors.		2 (11.1)	9 (50.0)	4 (22.2)	3 (16.7)
26	The Pre-Algebra software used in the course was free of errors.	1 (5.6)	1 (5.6)	6 (33.3)	9 (50.0)	1 (5.6)
27	The problems with software were dealt with promptly by company representatives.	2 (11.1)	9 (50.0)	7 (38.9)		
28	Students found most of the errors while using the computer software.	9 (38.9)	11 (61.1)			
29.	The chairs have stood up to student wear.	1 (5.6)	14 (77.8)	1 (5.6)	2 (11.1)	
30.	Down time for hardware repair was so lengthy that it affected the instructional time for students.		1 (5.6)	8 (44.4)	8 (44.4)	
31.	The problems with equipment were dealt with promptly by company representatives.	9 (50.0)	9 (50.0)			
32.	Telephone lines are ready for student use to connect with Stanford University.		4 (22.2)	4 (22.2)	6 (33.3)	3 (16.7)
33.	The reports are useful in determining student's progress.	8 (44.4)	10 (55.6)			
34.	Reports were useful when used to explain student progress to parents.	4 (22.2)	13 (72.2)	1 (5.6)		
35.	Student behavior is evidenced in the reports.		10 (55.6)	6 (33.3)	1 (5.6)	1 (5.6)
36.	The reports are useful tools for planning purposes.	2 (11.1)	12 (66.7)	3 (16.7)	1 (5.6)	

Open - ended Items

'hat have you found to be some advantages of using the ICL computer system for teaching mathematics?

- The assurance that the math itself is taught in an orderly manner - meaning uninterrupted unless the student stops the computer. The students' ability to repeat lessons if needed. The fun graphics in the pre-algebra lessons.
- Allowing the stronger students to move ahead and the slower students to take as much time as they need.
- Students normally lacking confidences in themselves in doing mathematics obtain that needed confidence to be successful.
- Great tool, but it needs to be only an aid not a "teacher". The kids don't take it serious.
- Students can pretest out of lessons they already know. They can spend extra time on lessons in which they are weak. They have fewer distractions working individually.
- Faster students are not held back; some students listened for the first time ever; students get instant feed back.
- Gives me time to work one on one with students having problems. Having a review, presentation and guided practice.
- Each student progresses at own rate. Absence one day doesn't preclude progress the next.
- Student "on task" time greatly increased. Can specifically isolate student problem areas. Does not hold back students that can progress faster.
- Reports. Ability of students to repeat lessons.
- There are so many! Students are not as distracted. There's more one on one time or small group learning. Teachers have less grading! Discipline problems are minimized. ESOL and ESE students are more successful. Students have more confidence and are more motivated to learn math. Students work at their own pace. The lab stimulates all learning styles.
- Quicker students are not slowed down by the teacher or slower students.
- Students have the opportunity to go back through a lesson if they do not understand it and also the chance to take a quiz up to three times. Students who are catching on quickly communicate at a faster pace.
- Students work at their own pace. ICL provides opportunities for students to learn to study, develop study habits and note taking.
- Students have a heightened sense of learning. Competition to succeed is increased. I have an instant update on student progress. High achievers can move on quickly without being bored.
- The video presentation quizzes, tests, etc.
- An ability to spend more 1-on1 time with students who need it by virtue of self-identification or by monitoring lack of progress.
- Spend more time helping due to not having to deal with as much disciplinary disruptions.

What are your concerns?

- Not many as the bugs get worked out. Although unpractical, I would like guided practice to include short response questions. I am aware that the state this was created does not need to worry about *FCAT*. I do find for me that teaching can be a struggle because the kids are so used to the computer - they get upset when they don't get to log on.
- The way the room is set up - not good. A lot of things on the curriculum was not covered. Computer not specifying how the student was supposed to put in the answer to a question, i.e. 48% instead of 48.
- Time was and is a major concern and not being able to successfully tell students where they need to be according to course outline.
- The students are not remembering the information from computer to written tests. They also ignore too much of the lesson.
- Students who purposely destroy the software and intentionally mess up the computer need to be taken out of the program. I would like to follow the order of the ICL the way it was set up by the company.
- Too many errors! Disks are fragile and easily damaged by students with a vandalistic inclination; some students have not progressed, and the gap is getting wider because they will never see the missing lessons.
- Students that are below grade level do not seem interested in the computer.
- How can I get more ICL classrooms for my school?
- 45 minutes no enough to move through curriculum.
- Some of the ways concepts were taught did not "match" my strategies. Too many mathematical errors in programs.
- Sometimes the way the lessons are taught is overkill. The software does not meet our geometry requirements in our curriculum, and so we have to supplement the whole chapter. A couple of the lessons were missing tests (linear equations). My concern or recommendation is to target the right student. I have concerns about having substitutes monitor the lab.
- Slower students are having difficulty grasping and remembering concepts and they have more lessons to complete than algebra or advanced students.
- Some students have not covered some of the lessons as indicated on the course outline.
- Students who are not independent fall behind.
- When the students can't on computers.
- I have students who have failed math and then been moved to higher grade through the ELP program that struggle to complete the work
- We need to consider a traditional class for some students who do not learn well on the ICL system or who may elect a traditional class.

Appendix G

Teacher Best Practices Survey

and

Results

been through rigorous and extensive analyses prior to administration. The test items were created by District Algebra teachers and tested for content validity and reliability. The *FCAT* is a high stakes test for both the student and the school. School accountability grades are determined from the obtained student scale score. While the differences were not found to be statistically significant, the group mean for the I Can Learn classes was higher than the group mean for the traditionally instructed classes in all four courses used in the study. This result occurred at two different times of the year with two different types of assessments. Although the differences were not statistically significant, the observation should not be minimized and may suggest a tenable effect of the *I Can Learn* classroom.

Teacher survey data revealed variation in the implementation of the program. Guidelines that direct teachers on program implementation do not exist. The middle school supervisor held meetings throughout the school year to address issues and concerns associated with the program. The information gleaned from these meetings and the survey data collected at the end of the year helped to provided a more uniform outline of program delivery for the following year. The inconsistencies in program delivery among teachers may have had an impact on the effect of the program for student achievement.

Teacher survey data revealed another variable that may have impacted the I Can Learn Program. Ten out of eighteen teachers indicated that the number of minutes in the period were insufficient for completing at least one lesson in the computer classroom. It may be prudent to look closer at the amount of time provided at schools for implementing the program.

The following recommendations are suggested:

- Continue to study the *I Can Learn* classes using *FCAT* results for 8th grade.
- Evaluate the *I Can Learn* program at the high school level.
- Follow the *I Can Learn* students through the pupil progression plan in mathematics through at least Algebra II.
- Continue the current effort to define and monitor best instructional practices in the *I Can Learn* classroom.
- Investigate achievement for *I Can Learn* students across gender and ethnic groups.
- Commend the *I Can Learn* teachers for their consistent, year-long effort in learning how to facilitate the program and in their dedication to provide students with opportunities to realize their potential.

BEST PRACTICES SURVEY

Teacher:_____

School:_____

Please check the box corresponding to a scale of effectiveness when judging each survey item below.

Item	Facilitating Instruction	Effective: Highly	Mostly	Slightly	Not	Don't know
F1	Regular use of notebook must be enforced during class.					
F2	Supplemental worksheets for reviewing are used periodically.					
F3	Verbal reminders are necessary to keep students on task.					
F4	List of lessons and completion dates help students pace themselves.					
F5	Notebooks are kept in the classroom area for all students in the ICL classes.					
F6	The course textbook is used regularly for homework assignments.					

	Motivation	Effective: Highly	Mostly	Slightly	Not	Don't know
MO7	Prizes are awarded to individuals for perfect scores on tests.					
MO8	Students are self-motivated by various types of reports hung in room.					
MO9	Parents are notified when students get behind in number of completed lessons.					
MO10	Reporting errors is a useful manner to help build students' self-confidence.					
MO11	A syllabus helps students see what they need to complete.					
MO12	The computer generated reports are a useful tool for informing students of their progress.					

	Mentoring	Effective: Highly	Mostly	Slightly	Not	Don't know
ME13	Peer tutoring is used to help students progress through material.					
ME14	Students come for tutoring during the day outside their regularly scheduled class.					
ME15	Small group lessons are held for students during class.					
ME16	Whole group lessons are given to introduce/review material.					
ME17	Notebooks are checked once a week.					

	Classroom Management	Effective: Highly	Mostly	Slightly	Not	Don't know
CM18	Logging in on computer is done daily as a warm-up.					
CM19	Paper and pencil warm-ups are started as soon as students enter class.					
CM20	Classroom rules are posted and followed when infractions are made by students.					
CM21	Students have assigned seats.					

In the following section, you are asked to write what you think may have been an effective practice within the ICL classroom. Please write your comments in the space provided or you may type your comments on a word processor, saving the file on the disk provided with the survey. Please use a file name that correlates your response to the survey item number. Return all disks in the same envelope with the survey. When appropriate, you may also submit a sample of documents that would help explain your responses to any of the following items.

Item1: How do you assign, collect and grade homework?

_____

_____

Item2: How do you deal with student absences and make-ups?

_____

_____

Item3: How do you deal with software errors in content material?

_____

_____

Item4: Describe or provide a lesson plan you would leave the substitute when your unavoidable absence from school occurs.

_____

_____

Item5: How do you incorporate parent involvement into the ICL classroom?

_____

_____

Item6: How is *FCAT* practice incorporated into the ICL classroom?

_____

_____

Item7: Describe or provide a weekly lesson plan from any time period this year.

_____

_____

Item8: Can your recommend some other learning experience that was particularly successful in the *I Can Learn* classroom?

_____

_____

Item9: Choose the method of instructional delivery that best describes how the ICL software was incorporated in your classroom:

A.) The ICL software is the primary source of instruction and I assist by tutoring.
B.) I deliver the instruction course textbooks using the ICL software to supplement the instruction.
C.) I use a balance of teacher and computer delivered instruction.
D.) Other - Please describe.

_____

_____

Best Practices Teacher Survey Results

	Facilitating Instruction	Effective									
		Highly		Mostly		Slightly		Not		Do not know	
		n	%	n	%	n	%	n	%	n	%
F1	Regular use of notebook must be enforced during class.	15	94	1	6	0	0	0	0	0	0
F2	Supplemental worksheets for reviewing are used periodically.	4	25	7	44	4	25	1	6	0	0
F3	Verbal reminders are necessary to keep students on task.	8	50	7	44	1	6	0	0	0	0
F4	List of lessons and completion dates help students pace themselves.	8	50	3	19	4	25	6	1	0	0
F5	Notebooks are kept in the classroom area for all students in the ICL classes.	4	25	2	13	5	31	3	19	3	19
F6	The course textbook is used regularly for homework assignments.	3	19	2	13	5	31	3	19	3	19
	Motivation										
MO7	Prizes are awarded to individuals for perfect scores on tests.	3	19	3	19	3	19	6	38	1	6
MO8	Students are self-motivated by various types of reports hung in room.	8	50	2	13	4	25	0	0	2	13
M09	Parents are notified when students get behind in number of completed lessons.	6	38	5	31	2	13	3	19	0	0
MO10	Reporting errors is a useful manner to help build students' self-confidence.	3	19	9	56	0	0	2	13	2	13
MO11	A syllabus helps students see what they need to complete.	9	56	3	19	0	0	1	6	3	19
MO12	The computer generated reports are a useful tool for informing students of their progress.	10	63	4	25	1	6	1	6	0	0
	Mentoring										
ME13	Peer tutoring is used to help students progress through material.	11	69	2	13	1	6	2	12	0	0
ME14	Students come for tutoring during the day outside their regularly scheduled class.	8	50	2	13	2	13	2	13	1	6
ME15	Small group lessons are held for students during class.	2	13	9	56	3	19	2	13	1	6
ME16	Whole group lessons are given to introduce/review material.	8	50	2	13	2	13	2	13	1	3
ME17	Notebooks are checked once a week.	6	38	2	13	4	25	3	19	1	6
	Classroom Management										
CM18	Logging in on computer is done daily as a warm-up.	6	38	4	25	3	19	1	6	1	6
CM19	Paper and pencil warm-ups are started as soon as students enter class.	5	31	1	6	1	6	6	38	3	19
CM20	Classroom rules are posted and followed when infractions are made by students.	10	63	4	25	1	6	0	0	1	6
CM21	Students have assigned seats.	15	94	1	6	0	0	0	0	0	0

Item1: How do you assign, collect and grade homework?

- *Do not assign, collect, or grade homework*
  Not well. I am inconsistent and could use some good ideas.
- *Homework is assigned on M T W; it is collected daily. The students are given points if completed.*
- *Homework is assigned approximately three times a week. Sometimes I grade it. Sometimes we exchange and sometimes they grade their own. The regular classes have not been very good about getting their homework done.*
- *The homework assignment is on the board at the beginning of each class. (We are scheduled on Blocks of 90 minutes for each class.) While the students are checking their homework answers from the screen or board I walk around the room and mark their homework credit. Homework counts about 10% to15% of their overall grade for the 9-weeks. When I am finished going around the room, I answer any questions they may have about the homework they just checked and go over some notes for the next day's homework. I then assign a few problems for homework practice and have the students log on to their computers.*
- *Homework is assigned one day out of the week. Individually checked homework for mistakes.*
- *I don't.*
- *Worksheets related to the lessons are used as homework assignments. Also, I use the review problems from their textbook as homework because they have a set of the textbooks at home.*
- *A packet of supplemental worksheets is made of lessons that students should have already completed. They are given a week to complete the packets. The packet is checked for completion and then we go over all problems as a group.*
- *By correlations to the curriculum. Homework packets are assigned with a due date. Lessons to be completed are assigned with a due date.*
  I don't.
  Students are given a calendar at the start of the quarter telling all assignments and due dates. In some classes, students check, ask questions, and then either show me scores, tell me scores, or hand in papers. I other classes (whose students cheat more), I collect and grade. Homework is highly ineffective in regular classes (students won't do it), but most upper level students benefit greatly from homework. This year homework was 10% of overall grade.
- *I assign homework every night to all my classes and sometimes collect the homework to grade or just check them off in my grade book.*
- *When homework was assigned it was assigned as a whole class assignment. I would collect it the next day and either do a spot check on certain problems or a view check for completeness and then discuss answers as well as work out problems that caused some difficulty.*
- *Assign homework at least three times a week. Collect homework when assigned and homework is worth 100%.*
- *Homework is assigned when students have not passed a lesson after the third attempt. It is assumed on a exception basis and not for the entire class.*

Item2: How do you deal with student absences and make-ups?

- *They continue at a point they left off when first absent*
- *If they need the time, they come after school.*
- *The students are responsible to turn in missing assignments three days upon returning to school. Sometimes I pull the students out of homeroom and sometimes I pull them out during my conference period (which is their P.E. class).*
- *Students are given a list of homework to makeup at home. The computer lessons that the students*

need to catch up on may be done in "Safety-Net" 2 days a week after school.

- *Students pick-up from where they stopped. Every student is on a different assignment.*
- *Students are encouraged to maintain good attendance; there is no make-ups as they pick-up from where they were and move on.*
- *Students who are absent are encouraged to come the afternoon they are back or make arrangements to stay an afternoon to work on the computer. Also, worksheets are saved for them.*
- *Absent students are given homework packets to make-up and they have to continue where they left off on the computer lessons.*
- *Not a problem since a "block" of activity is assigned with a due date. I will stay after school if necessary.*
- *Students work at their own pace. Progress is posted weekly. They catch up on their own or they come after school.*
- *Those out on school business are asked to make up time missed during class of teacher who took them out. Some do, some don't. Time is available occasionally, before or after school to make up. For assignments, students have 3 days to make up work missed when absent.*
- *On my block board, I usually post homework assignments for the week and when a student is absent I advise him/her to copy the missed homework assignments.*
- *I would allow students to make up time (computer) during their elective class or after school. Some students took advantage of this system and some chose not to do make-up computer time.*
- *Asked students to come to the program after school (Equity 2000) or during home room.*
- *Because the lab is self-paced, I allow students to "make-up" work for absences. In addition, I provide two afternoons per week, 1-1/2 hours per afternoon, for students to have extra time in the lab. On occasion, I have allowed students in other classes on my planning period.*

Comment Item3: How do you deal with software errors in content material?

- *Not at all*
- *The students get bonus points for finding the errors and I alert the class by writing them on the board.*
- *Call the team for I CAN 1-888-263-1390.*
- *I explain the error to the student and I call it in to the hotline.*
- *The students let me know when they think there is an error and I then check it out. If there is actually an error in the lesson I correct the grade at the teacher's station. I was contracted by the ICL company to edit some of their lessons for errors, but the company dropped their contract work with individuals in editing lessons. I had found several errors that needed to be corrected on the part I did, but I do not know if any one is currently editing the lessons for the company or not.*
- *Go over the error with the student. Make-up a problem. If student understands, then the students is given credit.*
- *Point out that people make errors - get on with life. Learn to beat the machine anyway - don't make an issue of it.*
- *Software errors are reported to JRL. Students are encouraged to go through the quiz remediation even if they make a passing score. Many times they find errors made by the computer. They are rewarded by an increase in grade.*
- *Discussion - great avenue for open discussion.*
- *I tell students to expect computer errors. They report them to me, and I take appropriate action. (Modify grade or report error).*
- *I have a basket on my desk and note paper at student desks. They are to write down the lesson,*

section, and error and put a note in my basket so I can adjust grades or notify JRL.

- *I ask the student how they worked the math problem out and then I will check the work, and then I will give them credit for the software errors.*
- *If the error was in a quiz, I would grade/score it based on what I agreed to be true. Often if answers weren't written exactly like the computer's answers, it was scored incorrect. I then re-scored the student's work based on his/her work.*
- *I modify the scores on quizzes. During lesson presentation, I simply point out the error to the student.*

Comment Item 4 - Describe or provide a lesson plan you would leave the substitute when your unavoidable absence from school occurs.

- *I leave worksheets in which they have to use previous math knowledge to solve puzzles*
- *I have a folder with seating charts and directions for the sub on my desk. I leave a "do now" problem, with its solution, for a warm-up. I also have review worksheets copied off for the day's assignment.*
- *The students usually log on the computer and begin the lesson that they left off from the previous day.*
- *When I am lucky enough to get Ms. (a retired math teacher), the students work on the computer. Otherwise I leave written review work for the students.*
- *I would leave review work for the students to do out of the textbook or workbook. I would then have the students log on to the computers if they finished the review work. I was not able to do this in all classes due to the amount of vandalism that occurred to the computers in certain classes when I had a substitute.*
  Bellwork. Textbook - review pages or worksheets from the problem solving workbook.
- *Generic - how to run lab - how to get help.*
- *The lesson plans I would leave if unavoidable absence occurs are textbook and worksheets related to what students should have covered mixed in with new content area information. I'm working on FCAT skills and benchmark skills. Students must write how they will solve basic problems - real world.*
- *Computers are not used when I am absent. I leave a worksheet or a lesson from the textbook that reviews lessons already covered.*
- *Bellwork and log on instructions.*
- *If the sub is Ms., I have the students log on and leave a stack of dittos (review work) in case of power failure. If the sub is somebody else, I lock up the computers and leave an assignment that covers material that all are able to do.*
- *I have work sheets for my substitute.*
- *I would typically leave either a packet of worksheets or book problems that are dealing with a subject/content that this group should know how to do. If worksheets were provided, I tried to include a review lesson or guided practice lesson that gave example problems to help students with the work.*
- *Give students practice worksheets from ICL practice book*
- *A typical lesson plan is included. I am fortunate that (1) I am not absent often and (2) I have a very capable sub that I always schedule.*

Comment Item 5: How do you incorporate parent involvement into the ICL classroom?

I have no parental involvement

- *Parents receive bi-weekly progress reports. They are also invited to visit the classroom at anytime. I have put them on the computer and let them go through the lessons.*
- *As a team, we have "take your parent to work".*
- *On Open House night I had demonstrations set up for the parents to view at the computer stations. A letter was sent home to the parents at the beginning of the school year describing the program to the parents. Procedures and rules for the ICL classroom were gone over and sent home at the beginning of the school year. Parents were sent regular progress reports on how their child was doing in class. Parents were invited to volunteer to assist in the ICL classroom if they chose to do so.*
- *Send interim reports home every two weeks. Ask parents to sign and return. Invite parents in and let them log in on the computer.*
- *They are invited to visit and sit in. When they come, their children show them what is going on and then I show them how we teach, progress and evaluate.*
- *Reports, interim and daily reports, usually are shown to parents with explanations of what is done and what is expected.*
- *Parents are invited to come into the ICL classroom at anytime. I have had a few parents that have come in to work through lessons with their children.*
- *Open house, conference night, telephone calls.*
- *I call the parent when the student falls 3 lessons behind.*
- *They incorporate themselves! Some show up before school and look over their children's shoulder. Some wouldn't get incorporated if you chained them to their children. I don't do anything special.*
- *I talk to them about the classroom, and I give them copies of lessons and the child's grades.*
- *I initially invited all parents/guardians to come visit the classroom to see what the ICL program is all about. Other than this at the start of the year, I only contacted parents on an as need basis via interim reports, phone calls or conferences.*

Comment Item6: How is *FCAT* practice incorporated into the ICL classroom?

- *One a week a FCAT skill is taught and students practice that skill*
- *I incorporate FCAT Practice through the "do now" problems.*
- *I usually teach the concept first, then assign the students to the ICL FCAT lessons.*
- *We use the FCAT workbook for homework assignments. I also have them do problems from the sharpen up books when they logoff and still have time left in the class.*
- *A part of the "Do Now" activities at the beginning of each class was involved with FCAT type problems. Also, in-depth work on FCAT practice material was done in the weeks prior to the FCAT. During that time about 1/3 of the 90 minute class was devoted to FCAT. For the second year in a row, our school had a major increase in the Math FCAT scores.*
- *Used four different FCAT workbooks before log on (one book a day).*
- *FCAT practice is incorporated into ICL classrooms daily. Students are encouraged to write and diagram their solutions. Five minute basic skills are employed daily. Since I only have 45 minutes of class time, students just barely get a lesson completed, but they are working.*
- *Every Friday we do another activity from SFAW series.*
- *One day a week is set aside for FCAT practice.*
- *Weekly curriculum. Since we have 45 minute periods, FCAT workbook practice.*
- *It isn't.*
  Regular use of FCAT materials and transparencies, sharpen-up, practice tests, etc.
- *It gives them lots of practices and preparation for the FCAT.*
- *FCAT practice was done weekly, starting with one day of the week and gradually increasing to two*

sometimes three days of the week. I utilized the SFAW FCAT practice book, Sharpen Up, and math assessment practice books to aid in FCAT practice.

- *FCAT is done once a week.*
- *Basically, I like FCAT as homework and then review it the next day, emphasizing the steps/procedures/thinking patterns rather than just giving out the answers.*

Comment Item 7: Describe or provide a weekly lesson plan from any time period this year.

- *Mon to Fri log in on computer to go ICL lessons - On wed, part of class is devoted to math vocabulary and one part is devoted to FCAT skill enhancement*
- *Agenda: 5 min. bell work, 20 min. teach concept, 10 min. review concept, and 10 min. students start cw/hw.*
- *Monday, sharpen-up, review, ICL, homework. Tuesday, comprehensive math assessment review, ICL. Wednesday, FCAT practice review, ICL. Thursday, Florida Comprehensive Review, ICL. Friday, bellwork, review, ICL.*
- *Five minute work ups, log in time, check their stations, and try to finish a lesson*
- *Students work on ICL lessons Monday through Thursday. Friday is used for FCAT practice using FCAT booklet provided by text. Homework packets are given for the week. Small group or whole class instruction is given as needed.*
- *JB has a copy of calendars for quarter 4.*
- *I give them bellwork (10-15 min), review homework assignments in class, then students will log on their lessons, and lastly, they will be given their homework assignments everyday. Lesson plans vary so much depending on student's progress. I may at any time have students on 12 or more different lessons.*

Comment Item 8: Can your recommend some other learning experience that was particularly successful in the *I Can Learn* classroom?

- *I am enclosing a ditto with six coordinate grids on it. It was taking the students too long to draw the grids. It was much better when I provided them with the ditto sheets.*
- *Student-Peer assisted learning with I Can Learn computer lessons as well as textbook-homework assignments.*
- *I can identify several that aren't and will require us to intervene next year.*
- *Whatever students are doing - encouragement is needed at all times. Constant monitoring of the students' working is a necessity.*
- *Notebooks are very important in the ICL classroom. Students are required to take notes for each lesson. Textbooks are brought to class daily and are used for reference or additional practice as needed.*
- *I prepared a standard lesson to introduce new concepts. 1) Add, subtract, multiply and divide signs. 2) Solving systems of linear equations.*
- *Somedays I will assign the whole class on the same lesson and I will first review the lessons before they log on.*
- *Enforce notebooks and headphones. Sometimes you may have to move a student off the ICL scheduled curriculum to do some remedial lessons either on the computer or in the text.*

Appendix I

Parent Survey

and

Results

'I Can Learn' Mathematics
Parent Survey

rections: Your child is using a computer at school to help them learn Mathematics. The School District would like your opinion about how your child is progressing. Compared to last year, please rate the following item using the scale below.

Scale: Compared to last year, judged the item as:

A. Less than last year
B. Same as last year
C. A little more than last year
D. A lot more than last year
E. Don't Know

1. My child talks about math class at home.

2. My child is pleased about his/her progress in math this year.

3. My child is excited about going to math class each day.

4. My child spends time doing math homework.

5. I receive written progress reports about my child's abilities in mathematics.

6. My child informs me of his/her math progress in school.

7. My child believes that he/she can be a successful learner in mathematics.

8. The math teacher has high expectations for my child.

9. I believe the school is working toward providing a mathematics program that is appropriate and beneficial for my child.

10. I believe that using the computer in math class will prepare my child for the workplace.

11. Overall, I am happy with my child's progress in mathematics this year.

12. Please describe your ethnicity. (Bubble only one choice.)
A. Black B. White C. Hispanic D. Multi-Racial E. Other

Comments:

13. How has the computer program used in mathematics class benefitted your child?

14. Do you have any concerns about the computer mathematics class?

Use other side if needed for writing comments. ➪

Parent Survey Results

Demographics - Parent Responses (Total-189)											
Black		White		Hispanic		Multi-Racial		Other		No Response	
N	%	N	%	N	%	N	%	N	%	N	%
51	27.0	70	37.0	50	26.5	6	3.2	8	4.2	4	2.1

Table #: Parent Survey - Item Frequencies

Item	Compared to last year....	Item Frequencies									
		Less than last year		Same as last year		A little more than last year		A lot more than last year		Don't Know	
		N	%	N	%	N	%	N	%	N	%
1	My child talks about math class at home.	49	26	42	22	47	25	47	25	3	2
2	My child is pleased about his/her progress in math this year.	46	24	35	19	40	21	64	34	4	2
3	My child is excited about going to math class each day.	35	19	54	29	33	18	52	28	15	8
4	My child spends time doing math homework.	75	40	41	22	29	15	35	19	8	4
5	I receive written progress reports about my child's abilities in mathematics.	54	29	76	41	29	15	20	11	8	4
6	My child informs me of his/her math progress in school.	39	21	56	30	38	20	51	27	5	3
7	My child believes that he/she can be a successful learner in mathematics.	44	23	32	17	40	21	68	36	5	3
8	The math teacher has high expectations for my child.	29	15	31	16	18	10	59	31	51	27
9	I believe the school is working toward providing a mathematics program that is appropriate and beneficial for my child.	40	21	24	13	32	17	76	40	17	9
10	I believe that using the computer in math class will prepare my child for the workplace.	40	21	15	8	29	15	91	48	13	7
11	Overall, I am happy with my child's progress in mathematics this year.	48	25	38	20	36	19	62	33	4	2.1

Parent Responses Describing Benefit of Program	
How has the computer program used in mathematics class benefitted your child?	
Total = 173	N
Increased comprehension	32
Motivation	24
Individualized pacing	21
Preparation for the future	16
Positive	15
Like Computers	11
Independent thinking	10
Higher Grades	10
Not sure	7
Learn faster	6
Did not know	6
No Benefit	6
Homework	3
Test taking	2
Lower Grades	2
Difficulty with computer	1
Environment	1

Parent Responses Regarding Concerns About Program	
Do you have any concerns about the computer mathematics class?	
No concerns	20
Need for a real teacher	11
Lack of content explanation	10
More information	10
Problems with software	8
Grades are inaccurate	4
No homework	4
No difference	3
Lack of Progress reports	3
Experimental program	3
Meeting course expectations/bench	2
Parent left out of process	2
More modern computers	2
Is learning taking place?	2
Computer down time	1
Going back to traditional classroom	1
Need for supplemental materials(other than textbook)	1
Child is failing	1
Need for supplemental Materials	1
Lack of computer time	1
Child doesn't seem to like it	1
Over-exposure of computers	1

Hillsborough County 2000-2001 School year

Cumulative Test (math raw score mean)

Algebra I	ICL Students	50.0
Algebra I	Traditional	48.8
Algebra I Honors	ICL Students	46.1
Algebra I Honors	Traditional	45.0
MJ-3	ICL Students	31.4
MJ-3	Traditional	30.9
MJ-3 Honors	ICL Students	33.1
MJ-3 Honors	Traditional	32.8

2001 FCAT math Scores

Algebra I	ICL Students	351.1
Algebra I	Traditional	345.4
Algebra I Honors	ICL Students	374.2
Algebra I Honors	Traditional	373.1
MJ-3	ICL Students	298
MJ-3	Traditional	294
MJ-3 Honors	ICL Students	331.5
MJ-3 Honors	Traditional	326.1

Student Population

		SES	White	Black	Hispanic
Algebra I	ICL Students	34.30%	46.90%	28.20%	22.00%
Algebra I	Traditional	19.70%	65.20%	12.40%	16.30%
Algebra I Honors	ICL Students	24.00%	45.30%	20.70%	23.30%
Algebra I Honors	Traditional	21.30%	52.90%	20.70%	15.30%

Achieved FCAT Levels

		Level 3	Level 4	Level 5
Algebra I	ICL Students	33.1%	40.6%	17.7%
Algebra I	Traditional	49.1%	30.9%	13.7%
		Level 3	**Level 4**	**Level 5**
MJ-3	ICL Students	31.8%	6.5%	1.0%
MJ-3	Traditional	29.1%	4.7%	0.7%
		Level 3	**Level 4**	**Level 5**
MJ-3 Honors	ICL Students	45.2%	26.1%	10.0%
MJ-3 Honors	Traditional	54.0%	19.4%	4.7%

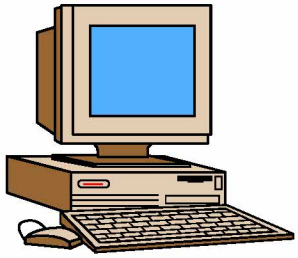
FCAT Math

		Lowest Score
Algebra I	ICL Students	286
Algebra I	Traditional	216

Evaluation of the

I Can Learn

Mathematics Classroom



Second Year of Implementation

(2001-2002 School Year)

Prepared by

Christine Kerstyn
Coordinator of Evaluation

October 1, 2002

John A Hilderbrand, Ph.D., Director
Assessment, Accountability, and Evaluation
Hillsborough County Public Schools
Division of Instruction
Tampa, Florida

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Schools Implementing the

I Can Learn Program
2001-2002 School Year

Dowdell Middle Magnet School

Eisenhower Middle School

Franklin Middle School

Madison Middle School

Marshal Middle School

Memorial Middle School

Pierce Middle School

Progress Village Middle Magnet School

Roland Park Middle School

Sligh Middle Magnet School

Stewart Middle Magnet School

Van Buren Middle School

Webb Middle School

Williams Middle School

Wharton High School

Executive Summary

During the second year of implementation, the 2001-2002 school year, another two middle schools were added to the group of schools using the program. To evaluate the program during the second year of implementation, classes in Algebra I, Algebra I Honors, MJ3, and MJ3 Advanced were used in a mixed-model statistical analysis to study the effect of the program on student FCAT achievement. The results from the second year of implementation using FCAT achievement data collected during the 2001-2002 school year are highlighted below.

Highlights of Study Results

H1. ***When comparing All curriculum students in the District enrolled in Algebra I, Algebra I Honors, and MJ3 Advanced, FCAT Math achievement for students placed in I Can Learn classes did not differ from the FCAT Math achievement of students placed in classes using traditional instructional methods.***

H2. ***When comparing All curriculum students in the District enrolled in MJ3, FCAT Math achievement scores for students placed in I Can Learn classes were significantly higher than the FCAT Math achievement of MJ3 students placed in classes using traditional instructional methods.***

H3. ***District-wide, for Standard curriculum students in the District enrolled in MJ3, FCAT Math achievement scores for students placed in I Can Learn classes did not differ from the FCAT Math achievement of MJ3 students placed in classes using traditional instructional methods. However, for FCAT-exempt students, the FCAT Math achievement of students placed in I Can Learn classes was higher than for similar students placed in classes using traditional instructional methods and the difference was found to be significant.***

H4. ***For students enrolled at the 14 middle schools that use the I Can Learn program, FCAT Math achievement for students enrolled in I Can Learn classes was significantly higher than for All Curriculum, Standard Curriculum, or FCAT-Exempt students placed in MJ3 classes using a traditional instructional method. The differences in FCAT Math achievement were found to be significant for every group of students enrolled in MJ3 at the school offering the I Can Learn program.***

Recommendations

R1. ***Continue using the I Can Learn program at the Title I middle schools.***

R2. ***Consider the course, MJ3, as a priority when scheduling students into the I Can Learn classroom.***

R3. ***Program personnel should investigate the instructional practices of the I Can Learn classes to determine if other instructional practices mediate the effect of the I Can Learn program for special populations.***

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Introduction

To study the effect of the *I Can Learn* Classroom, a statistical analysis was specifically chosen to model the data that are representative of educational environments. Typically, students and teachers are not randomly assigned to classes or schools, making conventional statistical analyses less feasible. Classical statistical models must be robust in order to sustain any violations to the assumptions about the data that can occur due to the mismatch of the data collected and the modeling process. This evaluation utilizes an alternative approach, Hierarchical Linear Modeling (HLM), for the purpose of program evaluation.

This report provides background information regarding the analysis and it's usefulness to stakeholders. In the following sections, more detailed information pertaining to the statistical analysis is presented.

Program Description

The *I Can Learn* Beginning Algebra is a comprehensive math curriculum that is delivered through an interactive, multimedia software. Students are guided through a complete course curriculum of 109 lessons that allows students to work at their own pace. Each student sits at their desk and accesses the software through a number of DVD disks.

The *I Can Learn* Algebra covers 109 compete Algebra lessons. Each lesson follows a five part format. Students are initially given a pretest. A pretest typically contains up to ten (10) quiz questions of varying difficulty. Missing one question on the pretest requires the student to continue in the current lesson to the next step in the lesson format called review. In the review, students are presented with pre-requisite material that is necessary to learn the current lesson. In the third step, lesson presentation/guided practice, a cyber-teacher presents concepts and procedures using text, video, graphics and audio. Students practice problems through the use of a notebook and computer interactivity. The cyber-teacher is available to work a problem out so the student can identify errors made in their solutions. The classroom teacher is also available for students when needed to support the activities provided in the software. An assessment of the lesson is through a quiz where the classroom teacher configures the time, the number of questions, and the level of difficulty. A cumulative review diagnoses each student's knowledge on a given group of previous objectives to see whether the student sufficiently understands the concepts. Students who do not have a sufficient understanding are automatically placed back on the identified lesson presentations and guided practice. Comprehensive tests are also included in the assessment program incorporated in the software.

All of the students' assessment activities are recorded in a grade book provided with the software. Classroom teachers monitor students' progress through a series of available reports. They have the opportunity to remediate students using other learning strategies and techniques which elaborate on the computer lessons without disrupting the learning process of other students. After remediation, students begin their learning activities where they left to continue their progression through the curriculum.

Evaluation Purpose

During the first year of implementation, semester exams were used to judge student mathematics achievement between students in an I Can Learn classroom and students in a traditional middle school classroom. In addition to achievement data, parents, students, and teachers were surveyed to provide information that reflected their opinions about the use of the computer in the math classes. This year, the purpose of the evaluation is to use FCAT data for making empirical judgements about the effect of the I Can Learn classroom. Data are collected for the purpose of predicting the differences among students in four classes taught at the 8^{th} grade level: Algebra I, Algebra I Honors, MJ3, and MJ3 Advanced.

Evaluation Methodology

Although some classical statistical approaches may be appropriate, Hierarchical Linear Modeling (HLM) was chosen for analyzing the data in this study. HLM has become a widely accepted method among educational researchers in recent years (Kreft & DeLeeuw, 1998; Raudenbush & Bryk, 2002; Sanders, 1998; Snijders & Bosker, 1999). HLM allows the prediction of outcomes for members who are nested within groups which in turn may be nested in larger groups. In this study, students are nested within classes. In contrast to other statistical methods (i.e. linear regression), the HLM model allows the analysis to consider variances among students together with the variances among classes. The premise under consideration is the belief that differences exist among classes that students are nested within. Subsequently, better estimates of the predictors of student outcomes within classes are produced because the variances among classes are being captured in the algorithm. The use of HLM is strongly advocated by some researchers for a number of reasons:

for subgroups to be formed. The performance of MJ3 students was analyzed using the following groups:

- *All Curriculum* - District wide
- *Standard Curriculum* - District wide
- *FCAT-Exempt* - District wide
- *All Curriculum - I Can Learn* Middle Schools (14)
- *Standard Curriculum - I Can Learn* Middle Schools (14)
- *FCAT-Exempt - I Can Learn* Middle Schools (14)

The following information presents the results from the HLM analysis. Four sections present the data from each of the four courses that students take in the 8th grade. Each section presents student demographics, student level and class level means for achievement scores, and the results for each group of students used in the analysis.

Level of Significance

The level of significance (α – level) is defined as the probability of making a mistake when rejecting a hypothesis about an effect. Often an alpha level of .05 is used in educational research. However, in this study, the alpha level was increased to .10 to ensure that a program with demonstrated utility was not rejected. The following factors were considered with respect to continuing the I Can Learn program at the middle school level.

When a decision is made to either accept or reject the results of hypothesis testing, the impact of the not having the program must be considered. The 2000-2001 evaluation of the program provided empirical data suggesting that student achievement in classes using the I Can Learn program was comparable to the achievement of students in traditional classes.

The cost of the program and training were considered as well as the results from the previous year's evaluation of the program. The I Can Learn program is supported through Title I funds. Schools may use Title I funding to improve their students' achievement in ways they believe are necessary. As such, the extent of financial impact to regular school funding is minimized.

Many of the teachers who used the program during the first year of implementation returned to teach the following year using the I Can Learn program. Currently, the District has taken the initiative to extend the training for implementing the I Can Learn program. During the 2002 summer training session, teachers who used the I Can Learn classroom conducted the training sessions for other interested instructors. A manual was created by the supervisor of middle school mathematics that incorporated the comments of teachers regarding best instructional practices as well as classroom management procedures.

A majority of students in Title I schools receive a free or reduced price lunch. They also are largely in urban schools with high minority populations or rural areas with a large migrant population. The design of the I Can Learn program allows for individualized instruction that permits students to learn at a pace and environment where they are comfortable and successful. Not implementing the I Can Learn program would mean that the students who are less likely to succeed in school would not have the opportunity to benefit from a program that has shown some promise in the District for higher student achievement.

Given the availability of resources for purchasing the program and training the teachers, and the known impact on the students from the first year of implementation, increasing the alpha level suggests that

accepting a greater error in judgement is offset by making less error in judgement about not implementing the program. The decision to make a 10% error in judgement is perceived to be insubstantial in relation to the consequences that may occur if the program were not utilized.

Explained Variance

The concept of explained variance answers the question of how much variability of the dependent variable is accounted for by the linear regression on the explanatory variables. The usual measure for the explained proportion of variance is the squared multiple correlation coefficient, R^2. Because of the two levels contributing to the options of available predictions, the concept of explained proportion of variance is somewhat problematic for hierarchical linear models.

To help explain variance in hierarchical linear models, Snidjers and Boskers (2002) suggest using the principle of proportional reduction of prediction error. On the basis of this distinction, two concepts of explained variation in a two-level model can be defined. The first and most important is the proportional reduction of error for predicting an individual outcome. The second is the proportional reduction of error for predicting a group mean. The student level explained variance ranges between 28% and 46%. The class-level explained variance ranges between 23% and 43%. More detailed information is presented in a table found in Appendix A.

Study Results
Algebra I Honors- All Curriculum Students

Descriptive Statistics

The following table presents descriptive data for students enrolled in Algebra I Honors at 36 middle schools. About 10% of the students in the District are enrolled in I Can Learn Algebra I Honors classes. The percent of students on free or reduced price lunch in the I Can Learn Algebra I Honors classes is 47%. The disproportionate number of students on free or reduced price lunch in I Can Learn middle schools can be attributed to the school's categorization of Title I (>60% of students on free or reduced price lunch). A majority of students enrolled in I Can Learn classes are minority students: Black (22%), Hispanic(27%) and other racial classifications (11%). A majority (56%) of the students in I Can Learn classes are females. Table 2 below presents more detailed information regarding District demographics and students enrolled in traditionally taught classes district-wide.

Table 2
Demographic Information - All Curriculum Students Enrolled in Algebra I Honors
By ICL and Traditional Instructional Delivery Methods

Student Enrolled in ALGEBRA I Honors - All Curriculum							
		District		**ICL Students**		**Traditional Class Students**	
Variable	**Status**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
SES	Not Eligible	1687	84.3	103	52.6	1584	87.8
	Free/Reduced	314	15.7	93	47.4	221	12.2
	Total	2001	100.0	196	100.0	1805	100.0
Race	White	1334	66.7	79	40.3	1255	69.5
	Black	198	9.9	43	21.9	155	8.6
	Hispanic	277	13.8	53	26.5	225	12.5
	Other	192	9.6	22	11.2	170	8.6
	Total	2001	100.0	196	100.0	1805	100.0
Sex	Male	921	46.0	86	43.9	835	46.3
	Female	1080	54.0	110	56.1	970	53.7
	Total	2001	100.0	196	100.0	1805	100.0

Means By Group and Individual Levels: 2002 FCAT Scale Score and 2001 FCAT NRT NCE

There are two levels of information that pertain to the study: student and classroom. Table 2 below presents the student and class means for the 2002 FCAT Math Scale score and 2001 FCAT NRT NCE score. The mean 2002 FCAT Math Scale score for students enrolled in traditionally taught Algebra I Honors classes is 374.54 and the mean for students using the I Can Learn class is 364.81. Ninety-one Algebra I Honors classes are offered district-wide; 10 classes were taught using the I Can Learn program and 81 were taught using traditional instructional methods. The mean for the 81 traditionally taught classes was 375.68 while the mean for 10 I Can Learn classes was 366.14.

The 2001 FCAT NRT NCE score (pre score) was used to provide an indicator of the students' prior achievement. The traditionally taught Algebra I Honors students' mean pre-score was 88.34 with a standard deviation of 11.788 while the mean pre-score for students using the I Can Learn classes was 85.11 with a standard deviation of 11.788. The mean pre score for the traditionally taught classes was 88.34 with standard deviation of 10.631 while the mean for classes using the I Can Learn program is 85.22 with a standard deviation of 4.291. Individual class information for Algebra I Honors can be found in Appendix B. Table 3 below presents the individual and class data for Algebra I Honors offered in 2001-2002.

Table 3
Algebra I Honors: All Curriculum Students - Individual and Class Means

Algebra I Honors - All Curriculum Students Individual and Class Means							
		FCAT 2002 Math Scale Score			2001 NRT NCE		
	Level	N	Mean	Sta Dev	N	Mean	Sta Dev
Traditional	Student	1706	374.54	27.613	1706	88.37	4.302
	Class	81	375.68	13.889	81	88.34	10.631
ICL	Student	188	364.81	27.843	188	85.11	11.788
	Class	10	366.14	9.377	10	85.22	4.291

Analysis

As shown in Table 4 below, the term for INTERCEPT, 374.31, estimates the class mean for all the classes involved in the study (n=91). A student's prior achievement contributes significantly to their current year's achievement as indicated by the Pr value of <.0001 when compared to an alpha level of .10. The coefficient of -4.7257 for Type of Class suggests a loss of almost 5 scale score points on the FCAT can be attributed to placing an Algebra I Honors student in a I Can Learn classroom. However, the difference attributed to the type of class a student is placed in is shown not to be significant. The Pr value of .1471, when compared to an alpha level of .10, suggests that there is no difference in FCAT achievement between students placed into Algebra I Honors classes using a traditional instructional method or the I Can Learn instructional method.

Table 4
Results of Statistical Analysis - Algebra I Honors - All Curriculum Students

Algebra I Honors: Effects, Coefficients, and Probability Values				
Fixed Effect	Coefficient	S.E.	t Value	Pr > |t|
Intercept	374.31	1.0426	359.02	<.0001
Student's Pre-Score (2001 FCAT NRT NCE)	1.3910	0.04979	27.93	<.0001
Type of Class (ICl vs. Traditional)	-4.7257	3.2306	-1.46	0.1471
Random Effects			z Value	Pr z
Class level residual	63.3038	14.9946	4.22	<.0001
Student level residual	453.16	15.1953	29.82	<.0001

Algebra I - All Curriculum Students

Descriptive Statistics

The following table presents descriptive information for students enrolled in Algebra I at 36 middle schools in the District. About 20% of the students in the District are enrolled in I Can Learn Algebra I classes. About half the students in Algebra I who are enrolled in I Can Learn classes are on free or reduced-priced lunch. Approximately half of the students enrolled in Algebra I, I Can Learn classes belong to a minority population: Black (23%), Hispanic(21%) or other racial classifications (5%). A majority of District students enrolled in Algebra I are females. Table 5 below presents more detailed information.

Table 5
Demographic Information - All Curriculum Students Enrolled in Algebra I - 2001-2002
By ICL and Traditional Instructional Delivery Methods

Algebra I - All Curriculum Students District-Wide							
		District		**ICL Students**		**Traditional Class Students**	
Variable	**Status**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
SES	Not Eligible	999	76.9	123	49.6	876	83.3
	Free/Reduced	300	23.1	125	50.4	175	16.7
	Total	1299	100.0	248	100.0	1051	100.0
Race	White	865	66.6	127	51.2	738	70.2
	Black	160	12.3	58	23.4	102	9.7
	Hispanic	191	14.7	51	20.6	140	13.3
	Other	83	6.4	12	4.8	71	6.8
	Total	1299	100.0	248	100.0	1051	100.0
Sex	Male	585	45.0	111	44.8	474	45.1
	Female	714	55.0	137	55.2	577	54.9
	Total	1299	100.0	248	100.0	1051	100.0

Means By Group and Individual Levels: 2002 FCAT Math Scale Score and 2001 FCAT NRT NCE

The mean 2002 FCAT Math Scale for students enrolled in traditionally taught Algebra I classes is 350.99 with a standard deviation of 21.036. The mean for Algebra I, I Can Learn students is 343.45 with a standard deviation of 20.883. Sixty-six Algebra I classes are offered district-wide; 18 classes were taught using the I Can Learn program and 48 were taught using traditional instructional methods. The mean for the 48 traditionally taught classes was 350.13 while the mean for 18 I Can Learn classes was 342.76.

The 2001 FCAT NRT NCE (pre score) was used to provide an indicator of the students' prior achievement. The traditionally taught Algebra I students' mean pre-score was 77.87 with a standard deviation of 11.984. The mean pre-score for Algebra I students enrolled in I Can Learn classes is 73.03 with a standard deviation of 11.951. The mean for traditionally taught classes was 77.78 with standard deviation of 2.294. The mean for I Can Learn classes is 72.72 with a standard deviation of 6.217. Individual class

information for Algebra I can be found in Appendix C. Table 6 below presents the individual and class data for Algebra I offered in 2001-2002.

Table 6
Algebra I: All Curriculum Students - Individual and Class Means

Algebra I - All Curriculum Students Individual and Class Means							
		FCAT 2002 Math Scale Score			2001 FCAT NRT NCE		
	Level	N	Mean	Std. Dev	N	Mean	Std. Dev
Traditional	Student	964	350.99	21.036	964	77.87	11.984
	Class	48	350.13	8.900	48	77.78	2.294
ICL	Student	231	343.45	20.883	231	73.03	11.951
	Class	18	342.76	11.524	18	72.72	6.217

Analysis

Table 7 below presents the results from the HLM analysis. The term for INTERCEPT, 349.79, estimates the class mean for all the classes involved in the study (n=66). A student's prior achievement contributes significantly to their current year's achievement as indicated by the Pr value of <.0001 when compared to an alpha level of .10. An increase of 0.9954 scale score points on the 2002 FCAT can be attributed for every NCE point in a students' prior achievement measure. The coefficient of -2.3577 for Type of Class suggests that a loss of almost 2.4 scale score points on the FCAT can be attributed to placing an Algebra I student in an I Can Learn classroom. However, the difference attributed to the type of class a student is placed in is shown not to be significant. The Pr value of .2034, when compared to an alpha level of .10 suggests that there is no difference in FCAT achievement between students placed into Algebra I classes using a traditional instructional method or the I Can Learn instructional method.

Table 7
Results of Statistical Analysis - Algebra I - All Curriculum Students

Algebra I Effects, Coefficients, and Probability Values				
Fixed Effect	Coefficient	S.E.	t Value	Pr > |t|
Intercept	349.79	0.8383	417.27	<.0001
Student's Pre-Score (2001 FCAT NRT NCE)	0.9954	1.8349	21.74	<.0001
Type of Class (ICl vs. Traditional)	-2.3577	0.0458	-1.28	0.2034
Random Effects			z Value	Pr z
Class level residual	19.3063	6.6687	2.90	0.0019
Student level residual	272.02	11.4812	23.69	<.0001

MJ-3 Advanced - All Curriculum

Descriptive Statistics

Table 8 below presents descriptive data for students enrolled in MJ-3 Advanced at 36 middle schools. About 20% of the students in the District are enrolled in I Can Learn MJ-3 Advanced classes. A majority of the students (55%) in the I Can Learn classes are on free or reduced price lunch in contrast to the third or less of students in the District that are enrolled in traditionally taught classes. A majority of students enrolled in I Can Learn belong to a minority population: Black (22%), Hispanic(32%) and other racial classifications (5%). A majority of I Can Learn students enrolled in MJ-3 Advanced are females (57%). Table 8 below presents more detailed information.

Table 8
Demographic Information - All Curriculum Students Enrolled in MJ-3 Advanced - 2001-2002
By ICL and Traditional Instructional Delivery Methods

MJ-3 Advanced - All Curriculum Students District-Wide							
		District		**ICL Students**		**Traditional Class Students**	
Variable	**Status**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
SES	Not Eligible	1557	66.1	208	44.7	1349	71.3
	Free/Reduced	799	33.9	257	55.3	542	28.7
	Total	2356	100.0	465	100.0	1891	100.0
Race	White	1290	54.8	192	41.3	1098	58.1
	Black	447	19.0	103	22.2	344	18.2
	Hispanic	502	21.2	149	32.0	353	18.7
	Other	117	5.0	21	4.5	96	5.1
	Total	2356	100.0	465	100.0	1891	100.0
Sex	Male	1152	48.9	199	42.8	953	50.4
	Female	1204	51.1	266	57.2	938	49.6
	Total	2356	100.0	465	100.0	1891	100.0

Means By Group and Individual Levels: 2002 FCAT Math Scale Score and 2001 FCAT NRT NCE

Table 9 below presents data for the 2002 FCAT Math Scale score and 2001 FCAT NRT NCE score means found at the student and class levels. The mean for students enrolled in traditionally taught MJ-3 Advanced is 331.53 and the mean for I Can Learn students is 327.75. The standard deviation for both groups of students is about the same.

One hundred twelve classes offered the MJ-3 curriculum in the 2001-2002 school year; 37 classes were taught using the I Can Learn program and 75 were taught using traditional instructional methods. The

mean for the traditionally taught classes was 331.57 and the mean for the I Can Learn classes was 330.82. The I Can Learn class means varied more (15.578) than the traditionally taught class means (9.210) as indicated by the standard deviation.

The 2001 FCAT NRT NCE score was used to provide an indicator of the students' prior achievement. The traditional students' mean pre-score was 67.0 with a standard deviation of 14.072. About 68% of the scores are found in the range of 53 to81. The mean prior achievement score for students in the I Can Learn classes is 64.33. The variation among students in the I Can Learn classes (13.765) in FCAT NCE scores is about the same as the variation found in traditionally taught classes (14.072). About 68% of the student scores for prior achievement will be found between 50 and 78. Both groups of students can be considered to be of about average to above average in ability level when placed into the MJ3 Advanced classes.

The class mean for prior achievement for the 37 I Can Learn classes is 65.63. The class mean for the 75 traditionally taught classes is 67.65. The variation among I Can Learn classes (11.896) is almost twice that of the traditionally taught classes (6.468) Information regarding means for FCAT scores are presented in Table 9 below. Individual class information for MJ3 Advanced can be found in Appendix D.

Table 9
MJ-3 Advanced: All Curriculum Students - Individual and Class Means

MJ-3 Advanced - All Curriculum Students Individual and Class Means							
		FCAT 2002 Math Scale Score			2001 FCAT NRT NCE		
	Level	N	Mean	Std. Dev	N	Mean	Std. Dev
Traditional	Student	1655	331.53	24.077	1655	67.00	14.072
	Class	75	331.57	9.210	75	67.65	6.468
ICL	Student	424	327.75	23.295	424	64.33	13.765
	Class	37	330.82	15.578	37	65.63	11.896

Analysis

As seen in Table 10 below, The term for INTERCEPT, 331.04, estimates the class mean for all the classes involved in the study (n=112). A student's prior achievement contributes significantly to their current year's achievement as indicated by the Pr value of <.0001 when compared to an alpha level of .10. An increase of 1.1090 scale score points on the 2002 FCAT can be attributed for every NCE point in a student's prior achievement measure. The coefficient of -1.1097 for Type of Class suggests that a loss of about 1.1 points on the FCAT can be attributed to placing an MJ3 Advanced student in an I Can Learn classroom. However, the difference in FCAT Math achievement cannot be attributed to the type of class in which a student is placed. The Pr-value of .2034, when compared to an alpha level of .10 suggests that there is no difference in FCAT achievement among students placed in MJ3 Advanced classes using a traditional instructional method or the I Can Learn instructional method.

Table 10
Results of Statistical Analysis - MJ-3 Advanced - All Curriculum Students

MJ-3 Advanced: Effects, Coefficients, and Probability Values				
Fixed Effect	Coefficient	S.E.	t Value	Pr > |t|
Intercept	331.04	0.5960	555.46	<.0001
Student's Pre-Score (2001 FCAT NRT NCE)	1.1090	0.0313	35.47	<.0001
Type of Class (ICl vs. Traditional)	-1.1097	1.2552	-0.81	0.4167
Random Effects			z Value	Pr z
Class level residual	12.1795	4.1018	2.97	0.0015
Student level residual	305.67	9.7279	31.42	<.0001

MJ3- Regular - All Curriculum Students

Descriptive Statistics

Table 11 below presents descriptive data for all curriculum students enrolled in MJ-3 at 36 middle schools. About 21% of the students in the District are enrolled in I Can Learn MJ-3 classes. Most of the students (74%) in the I Can Learn classes are on free or reduced lunch. A majority of students enrolled in MJ3, I Can Learn classes belong to a minority population: Black (31%), Hispanic(38%) or other racial classifications (3%). About 51% of the students are females in the I Can Learn classes. Table 11 below presents more detailed information regarding demographics of MJ3 students in the District.

Table 11
Demographic Information - All Curriculum Students Enrolled in MJ-3: 2001-2002
By ICL and Traditional Instructional Delivery Methods

MJ-3 - All Curriculum Students District-Wide							
		District		ICL Students		Traditional Class Students	
Variable	Status	Frequency	Percent	Frequency	Percent	Frequency	Percent
SES	Not Eligible	2570	39.4	348	25.8	2222	43.0
	Free/Reduced	3946	60.6	999	74.2	2947	57.0
	Total	6516	100.0	1347	100.0	5169	100.0
Race	White	2533	38.9	368	27.3	2165	41.9
	Black	1794	27.5	422	31.3	1372	26.5
	Hispanic	1942	29.8	517	38.4	1425	27.6
	Other	230	3.5	39	2.9	191	3.7
	Missing	17	0.3	1	0.1	16	0.3
	Total	6516	100.0	1346	100.0	5153	100.0
Sex	Male	3478	53.4	661	49.1	2817	54.5
	Female	3021	46.3	685	50.9	2336	45.2
	Missing	17	0.3	1	0.1	16	0.3
	Total	6516	100.0	1347	100.0	5169	100.0

Means By Group and Individual Levels: 2002 FCAT Math Scale Score and 2001 FCAT NRT NCE

The mean 2002 FCAT Math Scale score for students enrolled in traditionally taught classes is 292.27. The mean scale score for MJ3 I Can Learn students is 295.55, about 3 points higher. The standard deviation for the traditionally taught classes (40.547) is over 8 points higher than the standard deviation of scale scores of the MJ3 I Can Learn students (31.963). About 68% of the traditionally taught students' scale scores will be found in the range of 252 to 333 while the I Can Learn students' scale scores will be found in the range of 264 to 328.

Three hundred twenty-eight classes offered the MJ-3 curriculum in the 2001-2002 school year; 64 classes were taught using the I Can Learn program and 264 were taught using traditional methods. The class means were 295.02 for the I Can Learn classes and 282.13 for the traditionally taught classes. The class means for the I Can Learn MJ-3 classes varied less (16.882) than the class means for the traditionally taught classes (30.203). As such, about 68% of the class means for the I Can Learn classes can be found between 278 and 312, while 68% of the traditionally taught classes are in the range between 252 and 312.

The 2001 FCAT NRT NCE was used to provide an indicator of the students' prior achievement. The traditional students' mean pre-score was 46.62 with a standard deviation of 15.995. The mean prior achievement score for all students in the I Can Learn classes is 46.91 with a standard deviation of 14.837. About 68% of the scores for traditionally taught students can be found in the range of 31 to 63, whereas, the range of scores for I Can Learn students is between 32 and 62. A stanine of 4, 5, or 6 is considered to be in the average range. NCE scores equivalent to these stanine scores range from 35 to 65. For the most part, MJ3 students placed in the MJ3 class can be considered as average in their mathematics ability when compared to a national norm group.

The mean pre-score for traditionally taught classes is 43.64 with a standard deviation of 10.164. The mean for I Can Learn classes is 47.51 with a standard deviation of 9.842. Table 12 below presents FCAT mean scores for students in MJ3 classes. Individual class information for MJ3 student (*All Curriculum*) can be found in Appendix E.

Table 12
MJ-3: All Curriculum Students - Individual and Class Means

MJ-3 - All Curriculum Students
Individual and Class Means

		FCAT 2002 Math Scale Score			NRT NRT NCE Score		
	Level	N	Mean	Std. Dev	N	Mean	Std. Dev
Traditional	Student	4929	292.27	40.547	3901	46.62	15.995
	Class	264	282.13	30.203	264	43.64	10.164
ICL	Student	1028	295.55	31.963	1028	46.91	14.837
	Class	64	295.02	16.882	64	47.51	9.842

Analysis

The term for INTERCEPT, 289.90, estimates the class mean for all the classes involved in the study (n=326). As shown in Table 13, student's prior achievement contributes significantly to their current year's achievement as indicated by the Pr value of <.0001 when compared to an alpha level of .10. An increase of 1.4869 scale score points on the 2002 FCAT can be attributed for every NCE score points in a student's prior achievement measure. The coefficient of 3.9087 for Type of Class suggests that an increase of about 4 points on the FCAT can be attributed to placing *All Curriculum* students in an MJ3 I Can Learn classroom. The difference attributed to the type of class a student is placed in is shown to be significant. The Pr-value of .0415, when compared to an alpha level of .10, suggests that placing *All Curriculum* MJ3 students in I Can Learn classes has a positive impact on their FCAT achievement when compared to similar students placed in traditionally taught classes.

Table 13
Results of Statistical Analysis - MJ-3 - *All Curriculum* Students

MJ-3: Effects, Coefficients, and Probability Values				
Fixed Effect	Coefficient	S.E.	t Value	Pr > |t|
Intercept	289.90	0.8895	325.92	<.0001
Student's Pre-Score (2001 FCAT NRT NCE)	1.4869	0.0305	48.74	<.0001
Type of Class (ICl vs. Traditional)	3.9087	1.9168	2.04	0.0415
Random Effects			z Value	Pr z
Class level residual	136.46	19.7207	6.92	<.0001
Student level residual	794.79	16.8106	47.28	<.0001

In the next two sections, data are presented for two subgroups of students that make up the *All Curriculum* group of students used in the previous MJ3 analysis, to further explore the significant and positive effect found for the I Can Learn program. The two subgroups are *Standard Curriculum* and *FCAT-Exempt* students. The two groups of students are categorized by the state in terms of their impact on school accountability grades. The *Standard Curriculum* students are used in the school accountability grade and the *FCAT-Exempt* students are not. The *FCAT-Exempt* category include ESE, LEP, and Homebound students.

MJ3 - Regular
Standard Curriculum Students

Descriptive Statistics

Table 14 below presents descriptive data for standard curriculum students enrolled in MJ-3 at 36 middle schools. About 23% of the students in the District are enrolled in I Can Learn MJ-3 classes. Most of the students (74%) in the I Can Learn classes and a majority of the students enrolled in traditional classes (55%) are on free or reduced priced lunch. A majority of students enrolled in I Can Learn classes belong to a minority population: Black (34%), Hispanic(36%) and other racial classifications (3%). About 53% of the students are females in the I Can Learn classes. Table 14 below presents more detailed information regarding student demographics.

Table 14
Demographic Information - Standard Curriculum Students Enrolled in MJ-3
By ICL and Traditional Instructional Delivery Methods

MJ-3 - Standard Curriculum Students District-Wide							
		District		ICL Students		Traditional Class Students	
Variable	Status	Frequency	Percent	Frequency	Percent	Frequency	Percent
SES	Not Eligible	1969	40.4	298	26.3	1671	44.6
	Free/Reduced	2909	59.6	833	73.7	2076	55.4
	Total	4878	100.0	1131	100.0	3747	100.0
Race	White	1901	40.0	310	27.4	1591	42.5
	Black	1434	29.4	381	33.7	1053	28.1
	Hispanic	1362	27.9	406	35.9	956	25.5
	Other	181	3.7	34	3.0	147	3.9
	Total	4878	100.0	1131	100.0	3747	100.0
Sex	Male	2427	49.8	537	47.5	1890	50.4
	Female	2451	49.2	594	52.5	1857	49.6
	Total	4878	100.0	1131	100.0	3747	100.0

Means By Group and Individual Levels: 2002 FCAT Math Scale Score and 2001 FCAT NRT NCE

The following table presents the means for the 2002 FCAT Math Scale score and 2001 FCAT NRT NCE score by student and class. The mean 2002 FCAT Math for traditionally taught *Standard Curriculum* MJ3 students is 298.62 with a standard deviation of 33.906. The mean for *Standard Curriculum* I Can Learn students is 295.38 with a standard deviation of 33.456.

Two hundred fifty-eight classes offered the MJ-3 curriculum in the 2001-2002 school year; 64 classes were taught using the I Can Learn program and 194 were taught using traditional instructional methods. The mean for the I Can Learn classes was 295.77 with a standard deviation of 17.279. The class mean for traditionally taught classes was 296.71 with standard deviation of 16.467. About 68% of the class means for the I Can Learn classes can be found between 278 and 312, while 68% of the traditionally taught classes are in the range between 252 and 312.

The traditionally taught students' mean FCAT NRT NCE score was 48.92 with a standard deviation of 15.438. About 68% of the scores are found in the range of 34 to 64. The mean NCE score for all standard curriculum students in the I Can Learn classes was 47.07 with a standard deviation of 14.846. Typically, the students are considered to be in the average range when compared to a national norm group.

The mean pre-score for traditionally taught classes was 48.43 with a standard deviation of 7.25. The mean pre-score for I Can Learn classes was 47.71 with standard deviation of 10.081. Table 15 below presents the student and class means for FCAT scores used in the analysis. Individual class information for MJ3 students (*Standard Curriculum*) can be found in Appendix F.

Table 15
MJ-3: Standard Curriculum Students - District-Wide Individual and Class Means

MJ-3 - Standard Curriculum Students - District Wide Individual and Class Means							
		FCAT 2002 Math Scale Score			2001 FCAT NRT NCE		
	Level	N	Mean	Std. Dev	N	Mean	Std. Dev
Traditional	Student	3097	298.62	33.906	3097	48.92	15.438
	Class	194	296.71	16.467	194	48.43	7.250
ICL	Student	948	295.38	33.456	949	47.07	14.846
	Class	64	295.77	17.279	64	47.71	10.081

Analysis

The term for INTERCEPT, 295.06, estimates the class mean for all the classes involved in the study (n=257). A student's prior achievement contributes significantly to their current year's achievement as indicated by the Pr value of <.0001 when compared to an alpha level of .10. An increase of 1.4019 scale score points on the 2002 FCAT can be attributed for every NCE point in a student's prior achievement measure. The coefficient of -0.9034 for Type of Class suggests that a loss of about 1 point on the FCAT can be attributed to placing MJ-3 standard curriculum students in a I Can Learn classroom. The difference attributed to the type of class a student is placed in is shown not to be significant. The Pr-value of .4700, when compared to an alpha level of .10, suggests that there is no difference in FCAT achievement between *Standard Curriculum* students placed in MJ-3 classes using a traditional instructional method or the I Can Learn instructional method. Table 16 below presents data resulting from the analysis.

Table 16
Results of Statistical Analysis - MJ-3 - Standard Curriculum Students

MJ3 - Standard Curriculum Students Effects, Coefficients, and Probability Values				
Fixed Effect	Coefficient	S.E.	t Value	Pr > |t|
Intercept	295.06	0.6200	475.93	<.0001
Student's Pre-Score (2001 FCAT NRT NCE)	1.4019	0.0294	47.65	<.0001
Type of Class (ICl vs. Traditional)	-0.9034	1.2503	-0.72	0.4700
Random Effects			z Value	Pr z
Class level residual	32.3375	6.5710	4.92	<.0001
Student level residual	601.5	13.8087	43.56	<.0001

MJ-3 (FCAT Exempt) - ESE/LEP/Homebound

Descriptive Statistics

Table 17 below presents descriptive data for any student in the District who took the FCAT in 2002. These students were enrolled in MJ3 at any of the 36 middle schools in the District. About 9% of the students in the District categorized by the state as *FCAT-Exempt* are enrolled in I Can Learn MJ3 classes. Most of the students (70%) in the I Can Learn classes are on free or reduced price lunch. A majority of students enrolled in I Can Learn classes belong to a minority population: Black (26%), Hispanic(30%) and other racial classifications (1%). About 36% of the students in the I Can Learn classes are females. Table 17 below presents more detailed information regarding student demographics.

Table 17
Demographic Information - FCAT Exempted MJ3 Students in the District
By ICL and Traditional Instructional Delivery Methods

MJ-3 FCAT Exempted Category Students (ESE/LEP/ Homebound) - District Wide							
		District		ICL Students		Traditional Class Students	
Variable	Status	Frequency	Percent	Frequency	Percent	Frequency	Percent
SES	Not Eligible	394	44.4	24	30.0	370	45.8
	Free/Reduced	494	55.6	56	70.0	438	54.2
	Total	888	100.0	80	100.0	808	100.0
Race	White	424	47.7	34	42.5	390	48.3
	Black	223	25.1	21	26.3	202	25.0
	Hispanic	219	24.7	24	30.0	195	24.1
	Other	22	2.5	1	1.3	21	2.6
	Total	888	100.0	80	100.0	808	100.0
Sex	Male	609	68.6	51	63.8	558	69.1
	Female	279	31.4	29	36.3	250	360.9
	Total	888	100.0	80	100.0	808	100.0

Means By Group and Individual Levels: 2002 FCAT Math Scale Score and 2001 FCAT NRT NCE

The following table presents the means for the 2002 FCAT Math Scale score and 2001 FCAT NRT NCE score by student and class. The mean FCAT Math Scale score for traditionally taught *FCAT-Exempt* MJ-3 students is 267.74 with a standard deviation of 52.868. The mean FCAT Math Scale score for *FCAT-Exempt* I Can Learn students is 297.65 with a standard deviation of 37.619.

Two hundred forty nine MJ3 classes included *FCAT-Exempt* students; 43 classes used the I Can Learn program and 206 used a traditional instructional method. The mean 2002 FCAT Math Scale score for the I Can Learn classes was 298.11 with a standard deviation of 28.548. The mean for traditionally taught classes was 276.49 with standard deviation of 37.022.

The traditionally taught students' mean FCAT NRT NCE score was 37.56 with a standard deviation of 15.160. The mean FCAT NRT NCE score for the *FCAT-Exempt* students in the I Can Learn classes was 45.01 with a standard deviation of 14.681.

The mean FCAT NRT NCE score for traditionally taught classes was 40.46 with a standard deviation of 11.752. The mean FCAT NRT NCE score for I Can Learn classes was 44.85 with standard deviation of 14.08. Table 18 below presents the student and class means for FCAT scores used in the analysis. Individual class information for MJ3 students (*FCAT-Exempt*) can be found in Appendix G.

Table 18
MJ3 District Wide FCAT Exempt Students (ESE/LEP/Homebound) - Student and Class Means

MJ3 - FCAT Exempted Students - District Wide (ESE/LEP/Homebound) - Individual and Class Means							
		FCAT 2002 Math Scale Score			2001 FCAT NRT NCE		
	Level	N	Mean	Std. Dev	N	Mean	Std. Dev
Traditional	Student	808	267.74	52.868	808	37.56	15.160
	Class	206	276.49	37.022	206	40.46	11.752
ICL	Student	80	297.65	37.619	80	45.01	14.681
	Class	43	298.11	28.548	43	44.85	14.082

Analysis

The term for INTERCEPT, 284.38, estimates the class mean for all the classes involved in the study (n=249). Table 19 below presents more results. Students' prior achievement contributes significantly to their current year's achievement as indicated by the Pr value of <.0001 when compared to an alpha level of .10. An increase of 15.1472 scale score points on the 2002 FCAT Math can be attributed for every NCE point in a students' prior achievement measure. The difference attributed to the type of class a student is placed in is shown to be significant. The Pr-value of .0074, when compared to an alpha level of .10 suggests that there is a difference in FCAT achievement between *FCAT-Exempt* students placed in MJ3 classes using a traditional instructional method or the I Can Learn instructional method. As such, placing an *FCAT-Exempt* student in an I Can Learn class is predicted to have a positive impact on their FCAT Math Scale score.

Table 19
MJ3 Results of Statistical Analysis:- MJ3 District Wide - FCAT Exempt Students (ESE/LEP/Homebound)

MJ3 FCAT Exempt (ESE/LEP/Homebound) Effects, Coefficients, and Probability Values				
Fixed Effect	Coefficient	S.E.	t Value	Pr > |t|
Intercept	284.38	2.0811	136.65	<.0001
Student's Pre-Score (2001 FCAT NRT NCE)	1.7422	0.1040	16.75	<.0001
Type of Class (ICl vs. Traditional)	15.1472	5.6383	2.69	0.0074
Random Effects			z Value	Pr z
Class level residual	246.02	59.8844	4.11	<.0001
Student level residual	1654.08	86.6149	19.10	<.0001

The following three sections repeat the MJ3 analysis presented above for all students using only the14 middle schools that have implemented the I Can Learn program for the following students: *All Curriculum, Standard Curriculum*, and *FCAT-Exempt.* The names of those schools can be found in the beginning of the report.

MJ3 Students - *All Curriculum*
I Can Learn Middle Schools

Descriptive Statistics

The I Can Learn classroom was placed in 14 middle schools in the 2001-2002 school year. The following table presents descriptive data for *All Curriculum* students enrolled in MJ3 at those 14 middle schools. About 52% of the students in the 14 middle schools are enrolled in I Can Learn MJ-3 classes. Most of the students (73%) in the I Can Learn classes are on free or reduced lunch. Most of the students enrolled in I Can Learn classes belong to a minority population: Black (36%), Hispanic(34%) and other racial classifications (3%). About 51% of the students are females in the I Can Learn classes. Table 20 below presents more detailed information regarding student demographics.

Table 20
Student Demographics: *All Curriculum* MJ3 Students at I Can Learn Middle Schools

***All Curriculum* - Students Enrolled in MJ-3 I Can Learn Middle Schools**							
		District		**ICL Students**		**Traditional Class Students**	
Variable	**Status**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
SES	Not Eligible	528	26.6	276	26.8	252	26.3
	Free/Reduced	1458	73.4	752	73.2	706	73.7
	Total	1986	100.0	1028	100.0	958	100.0
Race	White	537	27.0	286	27.8	251	26.2
	Black	733	36.9	369	35.9	364	38.0
	Hispanic	664	33.4	346	33.7	318	33.2
	Other	52	2.6	27	2.6	25	2.6
	Total	1986	100.0	1028	100.0	958	100.0
Sex	Male	1055	53.1	500	48.6	555	57.9
	Female	931	46.9	528	51.4	403	42.1
	Total	1986	100.0	1028	100.0	958	100.0

Means By Group and Individual Levels: 2002 FCAT Math Scale Score and 2001 FCAT NRT NCE

The following table presents the means for the 2002 FCAT Math Scale score and 2001 FCAT NRT NCE score derived from scores of students attending middle schools that offer the I Can Learn program. The mean 2002 FCAT Math Scale score for *All Curriculum* students enrolled in traditionally taught MJ3 classes is 277.86 and 295.88 for I Can Learn students.

Sixty-one classes offered the MJ3 curriculum in the 2001-2002 school year; 21 classes were taught using the I Can Learn program and 40 were taught using traditional instructional methods.

The mean FCAT scale score for the I Can Learn classes was 295.88 and the mean scale score for the traditionally taught classes was 270.57. The mean for the I Can Learn MJ3 classes varied less (17.157) than the class means for the traditionally taught classes (30.035). Consequently, about 68% of the class means for the I Can Learn classes can be found between 278 and 312, while 68% of the traditionally taught classes are in the range between 252 and 312.

The 2001 FCAT NRT NCE score was used to provide an indicator of the students' prior achievement. The traditionally taught students' mean NCE score was 41.18 with a standard deviation of 15.246. About 68% of the scores are found in the range of 26 to 56. The mean FCAT NCE score for all students in the I

Can Learn classes was 46.91 with a standard deviation of 14.837. About 68% of the student scores in I Can Learn classes may be found in the range of 38 to 58.

The mean FCAT NRT NCE score for traditionally taught classes was 38.58 with a standard deviation of 8.947. The mean for I Can Learn classes is 47.52 with standard deviation of 10.331. Information regarding means for FCAT scores are presented in Table 21 below. Individual class information for MJ3 students (*All Curriculum*) at the 14 middle schools using the I Can Learn Program can be found in Appendix H.

Table 21
MJ3 - All Curriculum Students at I Can Learn Middle Schools: Student and Class Means

MJ3 - All Curriculum Students at
I Can Learn Middle School: Student and Class Means

		FCAT 2002 Math Scale Score			NRT NCE		
	Level	N	Mean	Std. Dev	N	Mean	Std. Dev
Traditional	Student	958	277.86	44.735	958	41.18	15.246
	Class	40	270.57	30.035	40	38.58	8.947
ICL	Student	1028	295.55	31.963	1028	46.91	14.837
	Class	21	295.88	17.157	21	47.52	10.331

Analysis

The term for INTERCEPT, 284.35, estimates the mean for all the classes involved in the study (n=61). Additional results from the analysis are presented in Table 22. Students' prior achievement contributes significantly to their current year's achievement as indicated by the Pr value of <.0001 when compared to an alpha level of .10. An increase of 9.9758 scale score points on the 2002 FCAT can be attributed for every NCE point in a students' prior achievement measure. The difference attributed to the type of class a student is placed in is shown to be significant. The Pr-value of <.0001, when compared to an alpha level of .10, suggests that for students enrolled at any one of the middle schools with an I Can Learn program, a difference exists in FCAT achievement between MJ3 students placed in I Can Learn classes and students placed in classes using a traditional instructional method. The I Can Learn program is predicted to have a positive impact on *All Curriculum* students; FCAT Math scores are predicted to be about 10 points higher.

Table 22
Results of Statistical Analysis:- MJ3 *All Curriculum* Students at I Can Learn Middle Schools

MJ3 All Curriculum Students - I Can Learn Middle Schools
Effects, Coefficients, and Probability Values

Fixed Effect	Coefficient	S.E.	t Value	Pr > |t|
Intercept	284.35	1.6987	167.39	<.0001
Student's Pre-Score (2001 FCAT NRT NCE)	1.5509	0.0673	23.04	<.0001
Type of Class (ICl vs. Traditional)	9.9758	2.3805	4.19	<.0001
Random Effects			**z Value**	**Pr z**
Class level residual	117.59	26.7516	4.40	<.0001
Student level residual	866.57	28.8253	30.06	<.0001

***Standard Curriculum* MJ3 Students**

I Can Learn Middle Schools

Descriptive Statistics

The I Can Learn classroom was placed in fourteen middle schools in the 2001-2002 school year. The following table presents descriptive data for standard curriculum students enrolled in MJ3 at those 14 middle schools. About 57% of the MJ3 students in the 14 middle schools are enrolled in I Can Learn classes. Most of the students (73%) in the I Can Learn classes are on free or reduced lunch. Most of the students enrolled in I Can Learn classes belong to a minority population: Black (37%), Hispanic(34%) and other racial classifications (3%). About 53% of the students in the I Can Learn classes are females. Table 23 below presents more detailed information regarding student demographics.

Table 23

Student Demographics: *Standard Curriculum* MJ3 Students at I Can Learn Middle Schools

Students Enrolled in MJ-3 - Standard Curriculum I Can Learn Middle Schools							
		District		ICL Students		Traditional Class Students	
Variable	Status	Frequency	Percent	Frequency	Percent	Frequency	Percent
SES	Not Eligible	439	26.2	252	26.6	187	25.7
	Free/Reduced	1237	73.8	696	73.4	541	74.3
	Total	1676	100.0	948	100.0	728	100.0
Race	White	431	25.7	252	26.6	179	24.6
	Black	638	38.1	348	36.7	290	39.8
	Hispanic	561	33.5	322	34.0	239	32.8
	Other	46	2.7	26	2.7	20	2.7
	Total	1676	100.0	948	100.0	728	100.0
Sex	Male	840	50.1	449	47.4	391	53.7
	Female	836	49.9	499	52.6	337	46.3
	Total	1676	100.0	948	100.0	728	100.0

Means By Group and Individual Levels: 2002 FCAT Math Scale Score and 2001 FCAT NRT NCE

The following table presents the 2002 FCAT Math Scale score mean and 2001 FCAT NRT NCE score mean for students and classes. The mean 2002 FCAT Math Scale score for *Standard Curriculum* students enrolled in traditionally taught MJ3 classes was 286.92 and 295.38 for I Can Learn students. The standard deviations for the means were similar, 35.6 for the traditionally taught student mean and 31.5 for the I Can Learn student mean.

One hundred and thirteen classes offered the MJ3 curriculum in the 2001-2002 school year; 64 classes were taught using the I Can Learn program and 49 were taught using traditional instructional methods. The mean FCAT Math Scale score for the I Can Learn classes was 295.79 and the mean FCAT Math Scale score for the traditionally taught classes was 286.39. The standard deviations for both scores was about 17.

The 2001 FCAT NRT NCE score was used to provide an indicator of the students' prior achievement. The traditionally taught students' mean NCE score was 43.97 with a standard deviation of 15.001. About 68% of the student scores in traditionally taught classes may be found in the range of 29 to 59. The mean FCAT NCE score for all students in the I Can Learn classes was 47.07 with a standard deviation of 14.846. About 68% of the student scores in I Can Learn classes may be found in the range of 32 to 62.

The mean pre-score for traditionally taught classes was 43.93 with a standard deviation of 6.773. The

mean for I Can Learn classes is 47.68 with standard deviation of 8.928. Information regarding means for FCAT scores are presented in Table 24 below. Individual class information for MJ3 students (*Standard Curriculum*) at the 14 middle schools using the I Can Learn Program can be found in Appendix I.

Table 24
MJ3 - *Standard Curriculum* Students at I Can Learn Middle Schools: Student and Class Means

Standard Curriculum Students at I Can Learn Middle Schools: Student and Class Means

		FCAT 2002 Math Scale Score			2001 FCAT NRT NCE		
	Level	N	Mean	Std. Dev	N	Mean	Std. Dev
Traditional	Student	728	286.92	35.624	728	43.97	15.001
	Class	49	286.39	17.375	49	43.93	6.773
ICL	Student	948	295.38	31.456	948	47.07	14.846
	Class	64	295.79	17.726	64	47.68	8.928

Analysis

As shown in Table 25, the term for INTERCEPT, 290.48, estimates the mean for all the classes involved in the study (n=113). Students' prior achievement contributes significantly to their current year's achievement as indicated by the Pr value of <.0001 when compared to an alpha level of .10. An increase of 3.8402 scale score points on the 2002 FCAT can be attributed for every NCE point in a students' prior achievement measure. The difference attributed to the type of class a student is placed in is shown to be significant. The Pr-value of <.0190, when compared to an alpha level of .10, suggests that for *Standard Curriculum* students enrolled at any one of the middle schools with an I Can Learn program, a difference exists in FCAT achievement between *Standard Curriculum* students placed in I Can Learn MJ3 classes and *Standard Curriculum* students placed in MJ3 classes using a traditional instructional method. A *Standard Curriculum* student placed in an I Can Learn MJ3 class is predicted to increase their FCAT Math Scale score by about 4 points when compared to a similar student placed in a traditionally taught MJ3 class.

Table 25
Results of Statistical Analysis:- MJ3 Standard Curriculum Students at I Can Learn Middle Schools

MJ3 Standard Curriculum Students at I Can Learn Middle Schools
Effects, Coefficients, and Probability Values

Fixed Effect	Coefficient	S.E.	t Value	Pr > |t|
Intercept	290.48	1.2355	235.11	<.0001
Student's Pre-Score (2001 FCAT NRT NCE)	1.3878	0.0869	-0.23	<.0001
Type of Class (ICl vs. Traditional)	3.8402	1.6353	2.35	0.0190
Random Effects			**z Value**	**Pr z**
Class level residual	26.6360	9.8553	2.70	<.0001
Student level residual	649.16	23.2042	27.98	<.0001

MJ3 *FCAT-Exempt* Students - (ESE/LEP/Homebound)
I Can Learn Middle Schools

Descriptive Statistics

The I Can Learn classroom was placed in fourteen middle schools in the 2001-2002 school year. The following table presents descriptive data for *FCAT-Exempt* students enrolled in MJ3 at the 14 middle schools that have a record of an FCAT score. About 26% of MJ3 *FCAT-Exempt* students are enrolled in I Can Learn classes in the 14 middle schools. Most of the students (73%) in the I Can Learn classes are on free or reduced price lunch. Most of the students enrolled in I Can Learn classes belong to a minority population: Black (37%), Hispanic(34%) and other racial classifications (3%). About 53% of the students in the I Can Learn classes are females. Table 26 below presents more detailed information regarding student demographics.

Table 26
Student Demographics: *FCAT-Exempt* MJ3 Students at I Can Learn Middle Schools

MJ3 Students *FCAT- Exempt* - (ESE/LEP/Homebound) I Can Learn Middle Schools							
		District		ICL Students		Traditional Class Students	
Variable	Status	Frequency	Percent	Frequency	Percent	Frequency	Percent
SES	Not Eligible	89	28.7	24	30.0	65	28.3
	Free/Reduced	221	71.3	56	70.0	165	71.7
	Total	310	100.0	80	100.0	230	100.0
Race	White	106	34.2	34	42.5	72	31.3
	Black	95	30.6	21	26.3	74	32.2
	Hispanic	103	33.2	24	30.0	79	34.3
	Other	6	1.9	1	1.3	5	2.2
	Total	310	100.0	80	100.0	230	100.0
Sex	Male	215	69.4	51	63.8	164	71.3
	Female	95	30.6	29	36.3	66	28.7
	Total	310	100.0	80	100.0	230	100.0

Means By Group and Individual Levels: 2002 FCAT Math Scale Score and 2001 FCAT NRT NCE

The following table presents the 2002 FCAT Math Scale score mean and 2001 FCAT NRT NCE score mean for students and classes. The mean 2002 FCAT Math Scale score for *FCAT-Exempt* students enrolled in traditionally taught MJ3 classes was 249.18 with a standard deviation of 56.984. The FCAT Math Scale score mean for I Can Learn students was 297.65 with a standard deviations of 37.619

In this analysis, the term "classes" is being used to describe only *FCAT-Exempt* students. There may be other students in the class, however, their scores were not included in the calculation of the means presented in the table. One hundred and five MJ3 classes included *FCAT-Exempt* students in the 2001-2002 school year; 43 classes were taught using the I Can Learn program and 62 were taught using traditional instructional methods. The mean FCAT Math Scale score for I Can Learn classes that included *FCAT-Exempt* students was 298.11 with a standard deviation of 28.548. The mean FCAT Math Scale score for traditionally taught classes that included *FCAT-Exempt* students was 261.49 with a standard deviation of 35.299.

The 2001 FCAT NRT NCE score was used to provide an indicator of the students' prior achievement. The traditionally taught *FCAT-Exempt* students' mean NCE score was 32.34 with a standard deviation of 12.407. About 68% of the student scores in traditionally taught classes may be found in the range of 19 to

45. The mean FCAT NRT NCE score for *FCAT-Exempt* students in the I Can Learn MJ3 classes was 45.01 with a standard deviation of 14.681. About 68% of the student scores in I Can Learn classes may be found in the range of 30 to 60.

The mean for traditionally taught MJ3 classes that include *FCAT-Exempt* students was 34.60 with a standard deviation of 9.344. The mean for I Can Learn MJ3 classes that include *FCAT-Exempt* students is 44.85 with standard deviation of 14.081. Information regarding means for FCAT scores are presented in Table 27 below. Individual class information for MJ3 students (*FACT-Exempt*) at the 14 middle schools using the I Can Learn Program can be found in Appendix J.

Table 27
MJ3 *FCAT -Exempt* Students (ESE/LEP/Homebound) at I Can Learn Middle Schools
Student and Class Means

MJ3 Students *FCAT-Exempt* - (ESE/LEP/Homebound)
I Can Learn Middle Schools: Student and Class Means

		FCAT 2002 Math Scale Score			2001 FCAT NRT NCE		
	Level	N	Mean	Std. Dev	N	Mean	Std. Dev
Traditional	Student	230	249.18	56.984	230	32.34	12.407
	Class	62	261.49	35.299	62	34.60	9.344
ICL	Student	80	297.65	37.619	80	45.01	14.681
	Class	43	298.11	28.548	43	44.85	14.081

Analysis

As shown in Table 28, the term for INTERCEPT, 290.48, estimates the mean for all the classes involved in the study (n=105). Students' prior achievement contributes significantly to their current year's achievement as indicated by the Pr value of <.0001 when compared to an alpha level of .10. An increase of 3.8402 scale score points on the 2002 FCAT can be attributed for every NCE point in a students' prior achievement measure. The difference attributed to the type of class a student is placed in is shown to be significant. The Pr-value of <.0190, when compared to an alpha level of .10, suggests that for *FCAT-Exempt* students enrolled at any one of the middle schools with an I Can Learn program, a difference exists in FCAT achievement between *FCAT-Exempt* MJ3 students placed in I Can Learn classes and similar students placed in classes using a traditional instructional method. *FCAT-Exempt* students are predicted to have higher FCAT Math scale scores when placed in the I Can Learn program.

Table 28
Results of Statistical Analysis:
MJ3 *FCAT-Exempt* Students (ESE/LEP/Homebound) at I Can Learn Middle Schools

MJ3 *FCAT-Exempt* Students
(ESE/LEP/Homebound) at I Can Learn Middle Schools
Effects, Coefficients, and Probability Values

Fixed Effect	Coefficient	S.E.	t Value	Pr > |t|
Intercept	277.52	5.0537	54.91	<.0001
Student's Pre-Score (2001 FCAT NRT NCE)	1.8434	0.2552	7.22	<.0001
Type of Class (ICl vs. Traditional)	21.9592	7.5592	2.90	0.0041
Random Effects			**z Value**	**Pr z**
Class level residual	207.37	99.8703	2.08	0.0189
Student level residual	2044.30	180.06	11.35	<.0001

Summary

A type of linear regression, Hierarchical Linear Modeling (HLM) was used to help determine the extent of the effect of the I Can Learn program implemented in Hillsborough County. A significant amount of variance was determined to exist among classes and within the classes. The model uses this information and incorporates the differences into the analysis. As such, the analysis includes the class as a unit of analysis as well as the student. For each student, achievement data were collected from the 2002 and 2001 administration of the FCAT. The 2002 FCAT Math Scale score was used to measure the extent of the effect, whereas, the 2001 FCAT NRT NCE score was used to help determine a student's prior achievement which is intended to increase the precision of the analysis. The type of instructional format used by the teacher was used for class information. The model can be represented by students with a prior achievement score being placed in an I Can Learn class or a class using traditional instructional methods. Prior achievement scores were centered for the analysis which means that students are compared to each other from the same relative position. The following paragraphs summarize the results of the analysis for students using the I Can Learn program in Algebra I, Algebra I Honors, MJ3, and MJ3 Advanced.

The data collected for Algebra I, Algebra I Honors, and MJ3 Advanced represented District level information for *All Curriculum* students. The analyses suggested that while a student's prior achievement play a significant part in determining their mathematics achievement, students placed in I Can Learn classes perform as well on the FCAT Math as do students in traditionally taught classes. Data show a predicted drop in scale score for I Can Learn students in three courses: Algebra I Honors, Algebra I, and MJ3 Advanced. The drop in scale score may be considered an artifact of the FCAT assessment specific to high scoring students. Also, the computer environment may not provide sufficient practice for the performance type of items that students must master to score high on the FCAT. Program personnel may need to investigate whether I Can Learn students in advanced 8^{th} grade classes spend a sufficient proportion of their time on FCAT performance-type items.

The MJ3 course is the District's largest enrollment of 8^{th} grade students in any mathematics class. Because of the large number of students, it was possible to form subgroups of students for further analyses in order to ferret more information regarding the extent of the effect of the I Can Learn classes. In the following paragraphs, the results are presented for *All Curriculum, Standard Curriculum*, and *FCAT-Exempt* students at the District level and at the school level.

The District level analyses using *All Curriculum* students enrolled in MJ3 suggested that the I Can Learn classes had a positive impact on student FCAT Math achievement. When the subgroup containing *All Curriculum* students was analyzed, the difference in achievement among students in both types of instructional methods was not determined to be significantly different. However, a significant difference in student achievement was found in the subgroup containing *FCAT-Exempt* students who were enrolled in I Can Learn classes. *FCAT-Exempt* students are predicted to score 15 scale score points higher on the FCAT Math than similar students, District-wide, in traditionally taught classes.

For further analysis, MJ3 students enrolled in the 14 middle schools using the I Can Learn program were used as a subgroup. *All Curriculum, Standard Curriculum*, and *FCAT-Exempt* student data were used to study the impact of the I Can Learn classes. The results indicated that at schools with an I Can Learn program, MJ3 students are predicted to score significantly higher on the FCAT when placed into an I Can Learn class when compared to students placed in a class using traditional instructional approaches. On average, when placed in I Can Learn classes, *All Curriculum* students are predicted to score about 10 points higher on the FCAT Math. *Standard Curriculum* students are predicted to score about 4 points higher on the FCAT Math, and *FCAT-Exempt* students are predicted to score 22points higher on the FCAT Math.

The results from the second year of evaluation are encouraging and optimistic about the effect of the I Can Learn program at the middle schools. MJ3 students are likely to benefit the most from its computerized format, especially if they attend one of the middle schools using the I Can Learn program.

The results from this study are similar to those presented in existing research. In a synthesis of reports, Sivin-Kachala, Bialo, & Langford, (1997) suggests that the level of effectiveness of educational technology is influenced by the specific student population, software design, the educator's role, how the students are grouped, and the level of student access to the technology.

Introducing technology in the learning environment makes learning becomes more student-centered, encourages cooperative learning, and stimulates increased teacher/student interaction. Target groups have been suggested to perform well in compute environments. Low achieving males in middle school benefit from using computers, particularly with overcoming the stigma associated with being in the lowest class (Smith, S, 2000).

Use of computers has been cited as helpful in teaching metacognitive skills, requiring learning disabled students to be logical and sequential, analyze, self-question, and monitor their own learning (White & Denny, 1983). In mathematics, research indicates that the lecture method is not a particular effective instructional method for a person with a learning disability and the use the computer assisted instruction facilitates their instructional needs (Rapp & Gittinger, 1993).

Multimedia technologies are effective tools for English as a second language instruction. LEP learners who cannot otherwise participate in class activities can be actively involved in language and literacy practices (Meskill, Mossop & Bates, 1999).

Appendix A

Explained Variance

To find the reduced proportion of error, a model without any predictor variables is run (null model). Its variance structure is compared to a fully implemented model with all the chosen predictors. Table 1 below presents data for the proportional reduction of error for this model in this study.

Table 1
Explained Variance: Proportional Reduction of Prediction

	Class-level error		Student-level error		Total error			Adjusted Class Error		Explained Variance	
	σ^2		τ^2		$\sigma^2 + \tau^2$		n	$(\sigma^2/n) + \tau^2$		Level 1 R2 Student-level	Level 2 R2 Class-level
All Curriculum- District	Null	Full	Null	Full	Null	Full		null	full		
Algebra I Honors	133.56	63.33	661.39	453.16	794.95	516.49	15	670.29	457.38	0.35	0.32
Algebra I	62.74	19.31	412.96	272.02	475.70	291.33	11	418.66	273.78	0.39	0.35
MJ3 Advanced	66.20	12.18	520.49	305.67	586.69	317.85	4	537.04	308.71	0.46	0.43
MJ3 - District											
All Curriculum	500.66	136.46	1180.52	794.79	1681.18	931.25	9	1236.15	809.95	0.45	0.34
Standard Curriculum	131.96	32.34	987.69	601.50	1119.65	633.84	8	1004.19	605.54	0.43	0.40
FCAT-Exempt	666.35	246.02	2035.36	1654.08	2701.71	1900.10	3	2257.48	1736.09	0.30	0.23
MJ3 - I Can Learn Middle Schools											
All Curriculum	494.04	117.59	1214.95	866.57	1708.99	984.16	7	1285.53	883.37	0.42	0.31
Standard Curriculum	139.63	26.64	994.24	649.16	1133.87	675.80	8	1011.69	652.49	0.40	0.36
FCAT-Exempt	671.19	207.37	2454.23	2044.30	3125.42	2251.67	2	2789.83	2147.99	0.28	0.23

APPENDI X B

ALGEBRA 1 HONORS

CLASS MEANS

Table B.1:

Algebra I Honors - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
37	5	334.000	28.644	5	70.020	18.150
35	13	339.154	19.731	13	76.669	11.837
75	26	353.577	22.891	24	86.217	11.265
74	30	353.867	22.232	29	84.317	11.453
73	31	356.871	23.717	31	85.161	12.084
54	5	357.400	19.295	5	81.300	16.410
68	22	358.455	17.549	22	82.973	10.624
25	21	359.429	25.119	21	85.762	13.439
38	8	359.625	15.964	8	88.000	11.463
46	26	360.769	34.072	26	85.169	12.543
48	13	361.615	27.711	12	81.692	16.696
40	25	361.640	23.904	24	79.042	14.612
70	26	361.846	16.094	25	84.448	9.612
17	32	363.625	14.764	32	84.222	10.244
10	30	363.633	27.172	25	85.328	12.599
47	12	365.667	19.364	11	87.455	8.305
80	24	365.833	23.438	20	88.370	9.777
1	33	366.606	22.211	32	88.175	8.733
63	24	366.833	28.426	22	86.505	8.041
6	30	367.400	21.337	30	84.417	12.460
30	25	369.040	27.298	22	86.664	13.233
90	15	369.067	22.253	14	90.507	11.749
3	29	369.448	30.809	29	88.321	11.047
55	9	369.667	14.335	8	90.725	10.024
15	24	369.917	20.619	22	90.359	7.375
29	18	370.167	21.164	18	85.450	11.628
51	16	370.188	14.354	15	93.553	7.358
56	7	370.286	25.428	7	86.671	15.474
61	23	370.435	34.230	22	84.086	11.403
26	21	370.905	17.737	20	86.355	11.261
62	20	371.250	21.528	20	90.250	7.663
89	24	371.292	19.134	23	87.009	8.450
91	19	371.316	19.015	16	87.069	9.639
20	28	371.500	22.751	27	90.952	6.081
69	18	371.611	19.811	16	89.381	10.812
42	29	371.724	20.389	26	85.531	9.304
4	15	372.600	41.000	15	89.113	12.421
82	32	373.719	43.232	30	82.927	11.099
41	29	374.000	22.162	27	84.474	10.969
78	35	374.000	26.376	34	87.653	10.237
19	22	374.045	16.540	22	88.914	9.662

Table B.1 (cont,):

Algebra I Honors - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
2	21	374.238	26.268	20	89.350	12.012
43	21	374.381	33.388	21	90.281	11.188
7	28	374.750	32.368	28	85.854	12.919
52	20	374.750	26.266	20	92.665	10.009
45	28	374.857	22.089	26	89.715	8.925
57	18	375.833	26.467	18	92.700	5.565
8	36	376.056	20.901	29	82.962	19.233
76	29	376.552	22.232	25	88.376	9.912
67	26	377.500	16.657	24	91.396	10.468
59	10	377.600	17.702	10	91.590	6.634
23	27	377.667	24.407	26	90.188	8.549
32	24	377.833	22.694	22	91.777	7.756
44	26	377.885	21.265	26	92.315	8.175
33	25	377.920	24.603	23	91.317	8.057
9	34	378.353	32.755	31	86.216	11.546
66	29	378.517	17.616	28	87.611	11.509
65	26	378.962	19.574	22	89.323	13.653
11	24	379.250	28.716	22	89.677	8.989
49	21	379.286	21.434	18	88.422	9.583
16	12	379.750	24.320	11	89.318	12.330
79	23	380.652	27.252	22	93.027	8.033
58	5	380.800	31.792	5	89.640	10.643
77	28	381.107	30.278	25	94.052	9.281
18	25	381.280	35.763	22	85.786	10.946
50	30	381.533	25.296	29	91.383	9.135
22	22	381.636	19.626	20	89.900	9.315
60	14	383.714	22.400	14	88.850	8.028
84	28	384.571	17.182	26	90.569	8.543
27	28	384.643	21.021	27	93.081	7.812
28	28	385.500	22.702	28	92.432	7.626
24	27	385.593	30.131	26	89.896	8.002
81	32	387.656	30.684	32	91.225	7.493
12	22	389.591	45.399	22	88.700	11.406
21	22	390.136	24.365	20	94.955	4.549
85	27	390.519	25.851	26	92.400	8.136
86	20	397.950	29.809	20	94.570	6.275
88	22	398.091	18.231	21	97.195	4.185
83	11	406.727	30.332	10	95.040	4.387
87	11	442.545	33.536	11	93.582	7.636
31	1	500.000	.	1	99.000	.

Table B.2:

Algebra I Honors - I Can Learn Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
5	28	353.679	23.848	26	81.785	10.784
36	13	354.308	27.118	13	78.808	17.07
39	22	357.909	28.41	21	80.248	11.829
71	29	365.138	36.132	28	86.95	11.123
64	17	366.235	22.761	17	87.594	11.663
53	27	367.852	22.172	24	86.188	9.85
72	28	368.143	24.78	27	83.881	11.636
13	6	370.167	26.126	6	84.917	12.476
14	6	373.5	29.283	6	88.517	12.052
34	20	384.85	27.925	20	93.33	7.329

APPENDIX C

ALGEBRA 1

CLASS MEANS

Table C.1:

Algebra I - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
44	17	70.265	12.421	19	339.895	20.05
51	13	70.785	9.851	16	339.875	25.763
59	7	71.1	15.266	7	341.286	19.847
29	25	71.524	12.22	25	337	19.577
45	23	73.278	10.495	25	348.56	18.168
50	27	73.319	12.739	27	350.296	17.912
11	26	73.877	13.123	32	335.75	21.696
23	15	73.98	7.398	16	355.313	14.094
58	7	74.386	7.061	7	338.571	15.873
30	22	74.423	10.755	23	345.043	17.611
10	23	74.609	12.616	26	344.231	18.451
2	22	74.745	12.334	23	348.478	22.316
33	10	74.75	13.844	11	335.636	18.178
32	22	74.832	13.59	24	339.042	21.782
64	14	74.85	6.066	14	351	17.178
52	26	75.315	12.521	27	348.333	22.299
62	29	75.431	8.414	30	349.333	11.63
3	14	75.607	12.765	15	343.6	18.051
8	20	76.165	14.229	23	352.826	25.924
42	15	76.48	11.764	16	345.188	24.31
49	30	76.59	10.211	34	351.853	16.867
6	20	77.545	12.309	21	353.524	16.12
31	17	77.676	11.602	19	349.474	16.146
24	12	77.808	7.513	13	349.769	18.811
61	28	77.811	12.695	29	355.828	24.967
1	26	78.238	8.345	28	347.393	18.379
63	19	78.3	14.011	19	351	21.393
38	16	78.438	13.549	16	344.5	17.58
40	24	78.454	15.149	25	348.12	23.905
67	15	78.6	14	16	358	29.464
48	26	78.604	12.033	32	351.781	21.053
5	11	78.773	12.529	14	319.571	31.272
7	21	79.862	11.332	25	349.36	23.436
14	20	79.935	11.427	23	348.522	16.415
60	26	80.362	10.139	26	356.423	20.334
17	20	80.71	12.755	22	364.318	13.827
22	18	80.95	10.482	18	356.278	14.348
37	13	81.085	7.512	14	354.286	20.386
13	10	81.38	7.564	11	357	22.293
68	11	81.464	18.312	12	359.917	23.88
12	20	81.87	13.235	22	353.591	21.28
26	24	81.896	11.092	25	354.76	15.975
16	21	81.986	8.98	22	362	19.957
18	21	83.267	10.758	24	361	15.562
25	25	83.484	9.632	29	355.379	19.897
15	22	84.691	11.515	28	360.25	17.558
66	22	85.555	9.492	24	370.75	22.574
43	23	85.791	8.179	24	367.333	21.126

Table C.2:

Algebra I - I Can Learn Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
4	2	315.5	26.163	2	75.9	15.556
21	5	331	15.508	5	67.52	13.478
28	15	332.333	13.415	15	63.36	5.928
65	25	334.48	19.186	23	67.013	8.859
19	22	335.727	10.727	22	69.914	4.914
20	5	337.6	25.648	5	67.64	6.607
9	10	339.1	14.806	9	67.856	8.306
41	23	339.696	25.469	22	70.764	13.082
39	28	342.464	14.774	24	78.363	12.569
57	2	342.5	17.678	2	70.5	19.94
56	9	342.667	22.119	9	65.111	15.71
53	14	345.929	14.699	12	75.458	8.507
54	21	347.238	20.808	20	76.62	13.594
35	2	349.5	6.364	2	78.4	21.072
46	12	354.25	33.979	12	71.483	12.71
47	14	356.786	19.978	14	73.807	6.683
36	5	361.4	18.609	5	85.62	13.155
27	26	361.423	22.719	22	83.664	8.585

APPENDIX D

MJ-3 ADVANCED

CLASS MEANS

Table D.1:

MJ3 - Advanced - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
95	20	312.200	19.758	20	55.900	9.229
13	23	313.957	22.290	21	55.767	14.841
9	24	314.167	19.506	21	62.876	10.517
96	15	315.400	19.212	15	63.993	14.589
14	20	315.900	31.825	16	55.563	15.210
51	29	318.207	19.769	28	59.100	9.311
48	34	319.882	23.231	32	64.916	12.151
10	15	320.933	31.809	11	63.264	19.322
37	27	321.074	19.754	27	57.696	11.269
15	24	321.292	20.401	17	62.335	13.819
24	26	323.038	29.671	20	68.400	10.327
78	26	323.115	19.046	20	65.425	11.654
74	21	323.476	23.073	21	66.129	13.630
97	34	323.500	21.908	34	60.256	13.151
53	30	323.900	18.998	26	66.742	12.612
71	19	324.684	30.344	19	64.211	13.909
70	23	325.261	21.384	23	59.961	14.065
44	32	325.594	23.869	31	66.516	12.213
57	28	325.893	25.003	27	61.944	16.878
56	24	326.375	21.019	22	62.132	9.900
87	33	326.636	22.160	31	59.261	12.146
55	20	326.650	22.474	18	69.461	10.072
12	22	326.682	30.473	19	64.553	14.727
11	23	326.696	24.664	18	65.717	13.254
103	29	326.897	16.738	25	63.312	9.860
105	18	327.333	24.548	17	63.906	15.801
52	27	327.407	27.046	24	67.354	15.697
26	30	327.433	19.525	26	67.896	12.866
90	31	327.452	22.044	29	64.476	15.229
88	31	327.613	22.850	26	60.554	13.015
89	25	328.080	25.217	24	60.367	12.235
1	16	328.500	20.868	15	66.900	12.087
101	30	328.500	26.336	27	62.689	16.786
39	33	328.818	23.843	31	65.948	20.508
27	26	328.962	25.951	22	70.082	13.062
98	16	329.563	26.515	14	62.764	15.038
99	30	329.600	22.838	27	68.730	14.072
43	33	330.394	24.233	32	70.431	13.538
109	30	330.900	20.229	29	68.417	15.343
107	2	331.000	46.669	1	84.600	.
75	22	331.045	31.193	22	69.386	16.048
58	21	332.143	30.881	15	73.147	16.366
47	21	333.143	24.727	20	66.000	13.992
84	37	333.162	23.098	32	67.263	10.602
3	24	333.583	18.748	22	65.500	14.756
110	30	333.633	21.620	28	68.614	13.307
54	25	333.880	25.173	23	65.070	13.569
76	24	334.250	22.303	22	67.295	12.829
30	16	334.813	16.905	18	70.000	17.357
36	26	335.769	21.779	22	66.832	12.530

Table D.1 (cont.):

MJ3 - Advanced - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
40	31	337.097	30.448	28	69.311	16.713
25	16	338.063	27.162	13	73.292	16.202
28	19	338.632	20.147	18	70.539	13.005
33	29	338.828	19.213	25	70.520	8.484
111	28	338.964	25.645	26	72.500	12.421
100	25	339.000	17.366	23	74.313	13.549
34	26	339.077	18.853	23	69.352	13.672
2	25	339.320	21.085	25	67.788	11.141
86	37	339.351	18.912	33	71.742	12.860
104	22	339.591	19.038	20	72.995	16.432
77	22	340.000	22.999	11	66.582	12.957
32	28	340.250	21.554	22	72.577	10.643
35	29	341.000	23.219	27	69.274	13.935
73	27	342.222	20.911	27	74.704	13.082
85	34	343.206	22.203	32	73.381	13.036
102	1	347.000	.	1	99.000	.
42	9	347.333	22.147	8	71.525	11.892
106	24	347.958	23.516	22	73.791	9.605
31	24	348.667	22.057	23	74.343	15.117
72	21	350.714	21.425	18	77.650	13.345
66	23	351.174	24.218	24	74.288	16.745
108	22	352.182	15.641	20	73.925	12.254

Table D.2:

MJ3 - Advanced - I Can Learn Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
17	14	309.929	17.569	14	54.336	5.675
21	1	310.000	.	1	48.400	.
8	4	314.250	9.946	2	44.650	1.485
106	25	316.680	19.769	22	59.059	8.528
16	22	317.682	15.619	21	60.881	5.962
94	21	317.857	18.559	19	51.374	15.062
5	1	321.000	.	1	64.900	.
6	29	322.276	22.113	29	62.669	13.450
7	3	324.333	8.327	2	50.950	16.051
82	24	324.375	26.041	25	63.132	15.489
92	28	326.929	17.948	26	62.981	9.673
50	22	328.136	19.423	21	67.038	13.676
18	6	329.167	21.028	6	68.350	9.291
80	3	331.000	26.000	3	57.267	12.852
38	18	331.722	23.894	17	67.171	16.217
81	25	331.800	19.300	23	65.935	11.818
93	5	331.800	16.991	4	73.275	8.163
59	1	332.000	.	1	63.500	.
91	28	332.821	26.231	25	68.220	16.003
67	27	335.000	20.552	25	70.432	12.277
83	7	335.000	15.556	7	74.457	8.931
51	4	335.250	12.764	4	65.325	4.487
64	25	337.080	23.132	23	69.913	12.045
69	2	337.500	12.021	1	64.900	.
63	1	338.000	.	1	89.600	.
19	8	339.250	9.130	7	70.886	8.628
46	18	340.889	20.642	18	68.533	13.795
62	6	342.000	22.253	6	68.400	16.136
79	1	342.000	.	1	66.300	.
60	3	343.000	28.688	2	72.300	12.445
45	27	348.704	19.329	24	71.796	9.377
20	8	353.625	25.489	8	82.013	14.190
4	1	355.000	.	1	89.600	.
61	1	384.000	.	1	99.000	.

APPENDIX E

MJ-3 REGULAR
ALL CURRICULUM
District - Wide

CLASS MEANS

Table E.1:

MJ3-Regular All Curriculum - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
38	3	146.667	80.829	1	21.800	.
100	7	172.286	80.010	4	32.850	21.042
228	7	196.429	92.700	7	31.471	10.411
39	7	196.714	61.751	3	20.833	1.674
176	1	198.000	.	1	33.000	.
318	3	198.000	96.062	2	28.050	24.961
227	12	198.083	76.416	12	26.083	9.320
102	1	200.000	.	1	27.200	.
278	12	203.833	78.287	10	28.660	9.959
279	9	206.778	68.430	9	29.856	8.035
130	9	209.000	71.130	9	29.722	8.491
143	3	209.000	94.557	1	37.700	.
139	3	209.667	15.144	3	26.400	12.249
42	5	220.000	68.967	5	26.260	6.234
22	6	224.833	21.104	5	28.300	7.700
40	14	224.857	47.208	13	31.808	9.990
178	5	227.400	63.370	5	25.220	5.551
165	16	228.938	40.448	10	32.860	7.786
133	11	232.636	91.231	11	36.582	16.625
8	10	233.900	56.213	7	27.386	9.898
132	7	236.571	64.686	8	34.513	9.541
198	4	237.000	91.659	3	61.033	34.103
276	16	237.188	62.048	9	27.556	8.913
93	8	237.875	56.309	7	28.257	13.970
155	2	239.000	46.669	2	34.350	7.425
21	4	241.000	36.009	4	30.250	10.377
304	9	241.111	60.159	8	26.838	11.507
65	4	241.750	54.212	6	25.700	11.072
51	8	243.625	58.911	9	25.233	8.039
193	1	244.000	.	7	24.986	7.966
254	10	244.300	70.926	8	31.413	14.115
152	6	244.333	20.724	5	25.800	9.199
225	9	245.444	36.936	9	20.011	11.251
34	5	246.200	23.015	4	23.575	9.935
151	6	247.167	36.647	7	33.271	9.059
131	11	248.364	20.388	13	29.892	8.456
179	5	248.600	35.809	6	31.517	3.820
316	4	248.750	30.576	3	33.533	7.558
218	11	249.636	62.316	2	31.900	10.889
226	5	251.000	21.342	4	26.975	10.199
52	7	252.286	43.733	6	32.017	16.187
192	5	253.600	37.660	4	25.375	9.926
253	19	253.684	53.670	18	28.361	10.675
199	6	255.333	34.326	5	31.040	12.207
330	23	255.913	71.304	18	40.617	10.996
154	23	257.000	69.835	20	37.990	8.932
99	11	259.091	30.654	9	27.556	11.838
141	2	259.500	38.891	2	30.300	1.697
107	10	259.600	32.343	9	31.667	13.113

Table E.1 (cont.):

MJ3-Regular All Curriculum - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
187	3	259.667	17.616	2	34.600	4.384
331	6	260.667	33.596	6	33.000	17.036
186	4	260.750	56.476	1	51.100	.
200	10	261.000	34.960	11	34.082	16.426
307	1	261.000	.	1	35.100	.
293	18	261.111	54.454	14	43.871	14.249
20	11	262.909	33.872	8	25.850	10.396
16	29	264.034	61.958	18	44.322	14.438
19	8	264.375	36.738	9	26.356	14.044
28	28	264.679	69.053	20	47.200	15.512
301	1	265.000	.	2	37.700	0.000
290	31	266.323	54.948	26	41.204	16.193
263	9	266.444	23.511	9	31.589	9.449
153	16	267.375	37.218	14	41.507	13.266
305	7	267.571	24.048	5	18.440	8.430
317	11	268.000	30.302	10	37.020	9.609
241	7	270.286	53.291	6	46.033	7.650
41	8	271.000	29.631	9	38.978	10.776
303	9	271.000	31.105	9	29.522	10.570
134	32	272.500	39.256	23	39.226	10.616
216	9	272.667	33.619	1	24.200	.
158	25	272.920	62.646	5	52.240	19.615
326	19	274.158	28.789	17	41.259	14.091
23	9	274.333	25.686	9	35.211	7.135
164	24	274.375	42.979	22	43.827	14.027
280	19	274.579	35.824	18	44.689	13.709
299	27	274.741	49.589	19	49.105	16.161
60	11	274.909	25.840	10	32.360	8.805
223	32	274.938	42.888	23	38.209	10.138
129	16	275.000	28.703	18	41.078	12.899
213	19	275.211	41.132	18	34.594	11.578
137	22	275.682	41.966	20	45.675	15.071
61	10	275.800	36.450	11	34.418	13.720
105	6	276.000	43.644	6	27.667	12.716
106	6	276.333	15.870	5	37.680	9.846
277	6	276.333	35.280	5	35.740	6.850
82	24	277.417	44.366	19	38.489	13.869
197	23	277.478	50.534	22	44.545	18.625
113	32	277.500	48.597	23	45.104	13.775
17	12	278.500	32.321	13	33.292	9.469
47	45	279.356	63.955	39	46.718	20.360
288	31	279.452	37.249	26	39.338	10.797
230	15	280.200	35.853	15	39.360	12.280
275	4	280.250	50.724	4	65.425	25.507
119	22	280.273	31.307	16	35.994	9.668
101	2	280.500	54.447	2	41.250	8.697
2	18	280.889	34.922	13	36.977	16.632
289	24	281.250	31.473	15	41.300	14.180
84	24	281.375	38.820	30	36.140	14.297
49	32	281.719	48.970	22	44.586	15.089

Table E.1 (cont.):

Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
269	16	281.813	35.292	10	34.120	14.327
59	21	281.952	34.923	12	41.208	12.750
43	33	282.606	42.767	27	47.937	15.018
232	26	282.654	41.279	21	44.610	17.871
267	26	282.731	52.589	23	45.578	14.238
1	16	282.813	26.539	16	42.250	13.800
322	20	283.100	29.522	20	39.835	9.346
95	15	283.133	49.731	11	47.091	15.699
188	14	283.429	36.342	13	43.585	18.651
287	2	283.500	38.891	2	34.050	1.485
80	27	283.926	50.040	24	46.275	16.997
180	14	284.143	29.001	10	35.590	19.505
10	28	284.179	37.710	14	40.757	16.787
125	15	284.733	31.802	14	46.157	11.822
229	26	284.923	22.617	21	40.857	15.540
81	23	285.391	29.817	19	45.374	15.002
237	5	285.400	21.385	4	21.200	8.117
315	25	285.640	27.598	25	41.876	14.853
306	1	286.000	.	1	43.600	.
25	20	286.100	33.480	18	43.811	14.698
182	25	286.120	62.333	19	44.958	19.234
332	12	286.667	31.500	11	40.800	9.542
308	12	287.333	30.643	10	39.560	16.623
48	30	287.767	41.545	22	50.105	19.436
163	27	287.852	26.393	20	43.575	15.705
323	18	287.889	38.672	16	41.319	19.798
224	27	288.296	36.129	26	42.819	14.787
247	20	288.500	36.007	18	47.444	14.144
117	23	288.826	30.558	22	40.055	10.751
7	40	289.200	38.108	36	44.042	13.366
135	28	289.357	20.595	26	46.869	10.423
166	11	289.818	33.576	11	50.109	13.658
138	14	290.000	39.111	13	52.215	18.380
6	25	290.200	38.354	21	49.276	14.374
268	24	290.208	28.651	19	47.595	18.081
136	27	290.963	31.719	27	50.267	13.627
50	28	290.964	66.727	24	52.675	15.862
24	1	291.000	.	1	43.600	.
173	24	291.250	31.368	19	53.400	15.722
30	33	291.273	28.995	22	47.091	12.810
18	3	291.667	42.194	3	20.467	4.549
309	46	291.674	32.947	43	44.047	14.114
83	19	291.737	30.967	19	42.589	17.781
215	11	291.818	26.671	9	38.311	14.346
118	22	291.955	22.846	23	37.074	13.584
238	24	292.000	29.647	23	47.261	12.002
248	25	292.040	29.227	17	48.729	11.225
251	22	292.045	27.629	18	48.189	17.319
26	23	292.609	37.911	19	49.211	12.168
302	14	293.071	19.660	15	40.760	11.297

Table E.1 (cont.):

MJ3-Regular All Curriculum - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
29	18	293.333	52.460	10	45.350	11.719
262	3	293.333	17.559	4	54.450	13.730
162	26	293.654	24.511	20	47.905	15.046
27	26	293.731	30.860	20	41.000	12.472
44	27	294.074	25.046	20	47.055	11.321
127	19	294.421	25.417	14	41.064	18.484
333	12	294.667	21.626	12	46.625	14.181
94	4	294.750	29.915	3	50.367	2.676
124	19	295.053	40.063	12	51.608	12.472
174	19	295.158	26.203	14	46.821	11.531
31	30	295.200	31.534	27	48.044	13.545
297	21	295.333	38.432	20	47.915	19.901
242	24	295.500	22.597	19	49.547	12.899
298	21	295.762	31.050	17	51.024	12.751
321	19	295.895	23.300	17	42.047	13.795
156	29	295.897	37.514	19	50.721	17.520
207	24	296.125	24.853	15	52.307	12.937
123	19	296.211	31.726	16	50.569	14.493
295	13	296.231	25.381	13	51.285	12.642
45	25	296.360	28.136	22	53.895	13.014
208	28	296.393	30.975	28	46.525	16.857
250	20	296.550	26.381	16	49.669	10.543
294	6	296.667	32.843	6	51.867	12.759
274	28	296.821	25.817	15	47.387	9.501
244	19	297.000	29.176	18	48.339	14.465
314	36	297.083	32.861	33	47.076	17.910
252	21	297.143	54.738	16	46.544	17.866
3	23	297.652	25.348	23	49.465	13.040
271	30	297.700	34.626	30	50.780	15.617
160	23	298.000	30.677	17	50.965	15.030
243	18	298.222	34.390	13	53.731	14.740
300	21	298.857	24.007	13	46.808	12.354
272	35	298.943	30.475	32	47.113	9.445
92	18	299.389	54.852	17	53.035	19.401
74	22	299.682	22.588	19	48.437	13.717
56	23	299.696	21.575	23	48.726	14.980
264	20	300.650	25.783	16	50.088	14.717
157	25	300.840	26.036	22	47.159	14.774
239	17	301.059	58.962	16	53.925	19.649
169	24	301.208	20.445	22	46.195	12.131
236	21	301.238	44.075	21	48.776	21.524
90	11	301.818	38.042	11	48.536	18.001
266	24	301.875	38.753	18	48.622	15.032
98	41	302.659	29.467	39	50.015	13.216
296	22	302.955	31.348	17	55.759	20.874
311	33	303.000	27.147	25	53.196	11.675
203	25	303.120	30.817	24	53.500	16.537
270	35	303.200	25.097	34	47.444	13.780
183	20	303.250	27.009	11	57.364	10.897
57	29	303.517	35.003	19	48.968	16.357

Table E.1 (cont.):

MJ3-Regular All Curriculum - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
55	20	303.600	22.582	15	54.900	16.299
159	19	303.789	38.555	18	53.478	20.929
5	23	303.957	33.763	22	49.845	14.574
161	24	304.042	26.596	21	48.057	16.877
171	26	304.423	23.639	18	46.839	15.250
54	24	304.875	38.657	21	55.352	15.588
71	31	304.935	48.607	28	59.136	20.473
128	16	305.000	20.646	14	50.757	13.220
53	30	305.300	29.801	27	49.748	14.577
170	25	305.680	30.138	19	50.105	8.806
234	24	306.167	32.969	22	55.832	15.563
273	29	306.172	23.376	23	46.948	10.870
111	32	306.688	25.809	25	52.168	13.993
110	32	306.719	36.495	27	51.530	16.062
181	18	306.778	30.557	14	45.979	21.655
206	25	306.960	24.096	20	52.570	12.889
184	5	307.000	14.387	5	41.800	9.593
126	19	307.263	19.298	18	57.639	11.980
58	18	307.333	27.012	12	53.075	18.349
112	24	308.125	21.446	19	51.463	12.390
233	19	308.789	26.360	17	51.771	17.409
9	24	308.917	33.997	20	48.550	15.559
313	19	309.000	24.642	11	48.127	20.075
70	30	309.033	25.315	28	56.679	11.916
249	18	309.389	17.082	17	50.694	12.028
246	18	309.444	31.847	16	50.569	11.625
312	36	309.528	23.482	32	52.422	12.469
63	26	309.538	23.048	22	53.236	10.681
310	28	309.643	27.476	22	54.336	14.822
240	23	309.870	33.110	22	56.759	19.203
103	31	309.935	20.815	29	52.745	14.552
97	1	310.000	.	1	66.300	.
205	19	310.211	25.903	17	54.076	11.465
201	29	310.483	31.799	24	51.767	15.919
145	3	310.667	27.934	3	40.667	11.662
265	29	311.172	28.934	24	51.579	13.392
77	36	311.333	27.640	29	42.872	15.379
72	24	311.417	19.534	20	55.715	13.255
4	22	311.455	28.010	21	51.410	14.235
46	32	311.688	28.923	28	52.057	14.403
235	20	311.750	21.836	19	52.795	13.753
204	25	312.040	25.385	19	53.842	14.100
245	17	312.294	15.442	17	56.335	10.523
67	24	313.208	26.405	23	50.883	13.377
62	22	313.455	28.005	21	53.214	11.436
231	2	314.500	6.364	2	55.350	1.485
91	17	314.647	24.031	17	54.918	16.715
64	20	315.100	20.084	20	57.140	11.354
109	30	315.267	29.689	28	54.443	18.381
108	32	315.406	23.275	24	57.263	10.803

Table E.1 (cont.):

MJ3-Regular All Curriculum - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
329	11	315.727	25.381	10	55.880	17.332
68	19	316.000	25.089	18	54.267	15.977
104	25	316.280	26.679	24	59.350	16.203
202	27	316.444	20.642	26	53.704	17.537
75	27	316.481	27.032	25	53.660	13.811
69	23	316.696	31.262	19	48.484	20.461
73	24	316.750	29.021	19	58.053	14.034
66	27	317.741	28.980	22	52.182	14.341
328	17	318.059	28.639	17	51.218	12.977
78	25	318.760	28.173	17	54.794	15.874
76	25	322.400	25.917	24	58.538	15.265
185	20	322.600	24.005	15	59.153	12.612
96	2	332.500	4.950	2	74.050	7.849
214	3	333.000	19.157	3	58.033	30.998
327	14	333.429	18.940	13	60.715	11.458

Table E.2:

MJ3-Regular All Curriculum - I Can Learn Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
32	5	268.800	20.030	5	31.420	12.140
148	18	268.889	33.682	16	33.419	13.550
145	13	269.385	24.524	12	37.250	12.402
146	18	274.778	24.116	17	34.335	10.747
15	25	277.800	44.809	23	42.678	15.480
37	9	277.889	41.417	9	39.800	10.643
14	24	278.708	43.284	20	42.385	13.110
282	21	279.095	49.380	16	44.019	20.808
280	1	280.000	.	1	39.600	.
89	28	281.036	29.669	27	38.389	12.338
35	18	283.111	31.875	16	43.550	9.690
220	30	283.567	41.714	23	44.113	19.296
88	13	283.769	33.300	12	41.133	15.756
33	15	285.667	21.091	12	41.433	12.664
195	24	286.333	48.015	18	52.378	19.603
219	27	286.741	26.587	22	41.336	14.631
78	20	287.100	26.260	15	44.880	14.247
285	28	287.464	49.998	19	47.737	13.967
150	23	287.478	25.525	20	38.755	9.602
259	15	288.867	29.880	14	45.114	12.926
324	19	288.895	42.254	16	42.281	13.983
284	26	290.154	31.057	18	43.178	15.585
260	15	292.200	23.929	15	42.573	12.236
79	26	292.808	25.001	21	40.019	9.764
281	22	292.818	55.746	17	50.012	14.685
85	21	292.857	31.289	15	51.773	16.085
283	28	293.036	28.423	20	44.570	11.900
286	29	293.517	32.410	26	48.435	15.854
319	13	293.692	35.659	9	37.756	12.219
320	19	294.105	23.269	19	42.979	9.615
255	16	294.188	33.243	13	45.031	13.565
13	25	294.640	34.200	24	46.275	14.192
11	25	295.600	26.764	23	48.096	12.893
87	19	296.526	35.268	15	46.793	13.364
189	24	299.083	36.905	24	50.288	13.584
261	14	299.143	21.267	14	45.279	9.647
144	18	300.333	14.213	16	46.019	11.182
222	29	300.586	35.042	22	49.418	14.996
116	22	302.455	29.515	22	52.236	12.042
86	20	303.200	26.558	14	48.793	10.580
190	22	304.182	39.997	14	54.179	14.731
120	26	304.962	23.407	24	51.783	15.628
256	24	305.167	27.474	21	49.581	15.008
194	16	305.688	32.327	16	47.306	14.930
291	29	305.724	31.803	26	48.800	12.265
191	24	305.750	22.371	22	50.305	14.247
325	14	305.857	26.413	8	49.150	21.029

Table E.2 (cont.):

MJ3-Regular All Curriculum - I Can Learn Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
122	18	306.167	22.474	14	53.629	12.995
292	28	306.464	22.034	21	55.714	17.480
209	21	306.619	37.086	11	54.582	16.898
221	11	307.182	20.119	10	51.440	7.389
210	28	307.643	22.801	22	62.645	12.585
121	20	308.600	16.109	19	53.805	9.145
294	28	310.214	27.137	27	48.752	15.743
212	26	310.308	30.501	20	57.185	12.222
114	27	313.222	26.413	27	50.944	11.301
115	21	313.714	37.261	18	51.267	16.466
211	29	315.759	20.371	19	57.989	16.027
257	1	330.000	.	1	48.400	.
12	2	340.500	14.849	1	93.300	.
258	2	352.000	5.657	2	85.750	1.626

APPENDIX F

MJ-3 REGULAR
STANDARD CURRICULUM
District- Wide

CLASS MEANS

Table F.1:

MJ3-Regular Standard Curriculum - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
330	8	234.250	98.038	5	47.660	7.973
40	2	238.500	31.820	1	21.800	.
317	2	244.500	2.121	1	35.100	.
278	1	251.000	.	1	29.100	.
293	18	261.111	54.454	14	43.871	14.249
225	2	262.500	23.335	1	35.100	.
290	30	263.867	54.129	24	40.496	16.412
301	1	265.000	.	1	37.700	.
153	16	267.375	37.218	14	41.507	13.266
164	17	269.412	37.532	16	42.213	12.740
223	27	270.185	44.074	23	38.209	10.138
28	27	270.778	62.210	20	47.200	15.512
134	31	273.000	39.801	22	39.509	10.777
129	15	273.933	29.380	17	40.929	13.280
213	18	273.944	41.942	17	34.688	11.927
326	19	274.158	28.789	17	41.259	14.091
137	22	275.682	41.966	20	45.675	15.071
82	19	277.737	47.217	16	41.169	12.711
95	14	277.857	47.050	10	48.290	16.008
197	21	277.905	52.180	18	47.183	16.832
280	17	278.059	34.052	16	44.844	14.317
17	12	278.500	32.321	12	33.800	9.704
2	14	278.643	29.643	11	37.864	15.942
308	3	278.667	13.503	1	21.800	.
16	20	278.900	48.346	16	45.419	14.917
1	13	279.308	26.794	13	40.931	14.030
289	15	279.400	36.711	11	41.445	15.006
288	31	279.452	37.249	26	39.338	10.797
230	15	280.200	35.853	14	38.064	11.631
119	21	280.286	32.080	16	35.994	9.668
322	19	281.474	29.396	18	39.967	9.865
59	16	281.750	32.877	9	44.522	11.852
232	21	282.286	43.130	18	45.461	18.566
188	14	283.429	36.342	12	44.950	18.789
267	21	283.429	37.705	20	43.765	13.226
49	26	283.731	52.139	18	45.983	14.195
299	22	283.909	49.851	17	51.129	15.654
154	17	284.294	35.850	16	39.456	7.884
43	31	284.645	42.708	25	46.844	14.161
125	15	284.733	31.802	13	45.985	12.286
180	13	284.769	30.086	9	35.356	20.673
113	26	285.346	39.356	19	48.289	11.426
198	1	286.000	.	1	51.100	.
25	20	286.100	33.480	18	43.811	14.698
229	24	286.458	22.891	18	39.550	16.167
332	12	286.667	31.500	11	40.800	9.542
6	22	286.682	38.669	19	50.500	13.187
10	16	287.000	33.164	12	39.725	17.751
81	22	287.000	29.480	18	46.844	13.957
105	1	289.000	.	1	31.500	.

Table F.1 (cont.):

MJ3-Regular Standard Curriculum - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
83	17	289.529	29.379	17	42.329	18.245
30	32	289.563	27.716	22	47.091	12.810
182	21	289.714	50.279	16	46.044	18.680
166	11	289.818	33.576	10	51.160	13.920
135	26	290.231	20.023	24	47.300	10.686
323	17	290.647	37.993	14	41.893	20.826
29	13	290.846	61.338	8	47.063	12.511
24	1	291.000	.	1	43.600	.
50	24	291.208	70.666	22	51.991	16.409
247	18	291.611	34.102	16	46.238	13.979
215	10	291.800	28.114	9	38.311	14.346
268	20	292.200	30.605	17	47.724	19.104
80	23	292.348	35.718	20	48.390	17.432
48	28	292.393	38.952	20	51.285	18.291
117	20	292.450	29.881	18	39.900	11.002
27	24	292.625	31.750	19	39.816	11.601
173	17	292.647	32.078	14	52.950	21.908
118	21	292.667	23.159	20	39.330	12.669
138	13	292.769	39.254	12	52.892	19.028
302	14	293.071	19.660	13	40.562	11.403
271	25	293.120	35.453	24	50.179	16.020
174	17	293.235	27.098	12	46.867	12.529
162	25	293.360	24.970	19	47.658	15.417
242	18	293.444	25.611	14	47.014	13.155
251	19	293.842	27.089	16	48.800	18.340
321	18	294.278	22.852	15	40.553	13.921
207	20	294.300	24.083	12	50.967	14.104
333	12	294.667	21.626	12	46.625	14.181
156	22	294.727	36.721	17	51.376	18.430
127	18	294.889	26.070	13	41.685	19.086
31	29	294.966	32.065	26	48.031	13.813
45	23	295.652	29.188	18	52.906	13.254
298	21	295.762	31.050	17	51.024	12.751
224	20	296.000	26.032	19	45.337	13.619
272	29	296.034	31.510	27	48.041	9.604
123	15	296.067	31.486	12	48.933	15.742
208	28	296.393	30.975	26	47.300	16.762
7	22	296.500	25.599	21	49.005	12.346
297	20	297.100	38.546	19	48.905	19.934
252	21	297.143	54.738	16	46.544	17.866
136	25	297.200	22.646	24	50.938	13.852
169	19	297.263	18.684	19	45.005	11.428
74	21	297.667	21.022	18	48.556	14.105
274	27	297.667	25.911	15	47.387	9.501
84	14	298.071	37.800	13	46.362	13.204
92	17	298.235	56.314	16	53.731	19.817
3	22	298.409	25.677	22	50.214	12.831
300	21	298.857	24.007	13	46.808	12.354
244	16	299.000	31.207	16	48.794	14.728
26	21	299.619	22.306	18	49.522	12.442

Table F.1 (cont.):

MJ3-Regular Standard Curriculum - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
160	19	299.632	31.744	15	51.807	15.832
248	20	300.000	23.416	17	48.729	11.225
264	19	300.053	26.347	14	48.471	14.820
56	19	300.105	21.354	18	49.144	15.721
266	19	300.579	42.222	14	48.093	16.014
295	11	301.000	24.702	11	53.373	12.638
239	17	301.059	58.962	16	53.925	19.649
236	21	301.238	44.075	21	48.776	21.524
243	17	301.294	32.804	13	53.731	14.740
157	24	301.542	26.354	21	46.971	15.112
98	35	301.743	27.013	33	48.848	12.737
90	11	301.818	38.042	11	48.536	18.001
171	23	302.391	22.769	17	46.076	15.362
311	31	302.774	27.914	23	53.500	11.757
270	35	303.200	25.097	34	47.444	13.780
294	4	303.250	38.990	4	54.750	14.488
57	29	303.517	35.003	19	48.968	16.357
124	13	303.846	32.700	12	51.608	12.472
183	16	304.063	27.275	9	59.056	11.413
71	29	304.241	50.134	25	61.252	20.493
296	21	304.381	31.382	16	55.956	21.542
54	20	304.450	41.856	18	55.944	16.694
53	28	304.857	30.799	25	50.364	14.683
170	23	304.870	30.814	17	50.524	9.240
128	16	305.000	20.646	14	50.757	13.220
181	15	305.133	32.870	12	45.008	22.278
233	17	305.353	25.717	15	49.053	16.650
55	18	305.667	22.321	14	57.093	14.436
111	31	305.935	25.877	25	52.168	13.993
309	30	306.033	23.413	28	47.693	13.934
161	20	306.050	26.896	16	51.238	17.700
47	27	306.333	34.744	22	52.018	19.908
273	28	306.536	23.721	21	47.367	11.203
206	25	306.960	24.096	19	53.353	12.744
184	5	307.000	14.387	5	41.800	9.593
203	22	307.182	28.829	22	53.691	15.865
126	19	307.263	19.298	18	57.639	11.980
313	15	308.400	26.774	8	46.463	23.339
9	24	308.917	33.997	20	48.550	15.559
110	27	309.037	36.907	22	52.932	16.934
234	23	309.130	30.264	21	56.695	15.397
4	18	309.333	27.793	17	49.271	13.318
58	14	309.429	29.016	9	54.167	21.074
246	18	309.444	31.847	16	50.569	11.625
63	22	309.545	24.043	18	52.083	9.581
70	27	309.593	26.052	25	56.760	12.193
249	16	309.938	17.472	15	51.313	10.540
97	1	310.000	.	1	66.300	.
265	23	310.043	28.134	19	51.426	12.627
312	33	310.061	23.180	29	52.334	12.925

Table F.1 (cont.):

MJ3-Regular Standard Curriculum - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
72	23	311.043	19.885	17	54.600	13.661
62	21	311.333	26.824	19	53.126	11.046
112	21	311.429	20.846	14	53.093	11.178
204	25	312.040	25.385	19	53.842	14.100
245	17	312.294	15.442	17	56.335	10.523
159	15	312.333	38.260	14	58.257	21.213
46	31	312.452	29.071	27	52.519	14.465
67	23	312.739	26.896	21	51.233	13.769
201	20	313.800	30.094	16	57.450	13.991
66	22	314.000	30.021	18	52.756	14.772
109	29	314.103	29.511	27	53.922	18.519
231	2	314.500	6.364	2	55.350	1.485
91	16	314.750	24.815	16	55.325	17.176
133	1	315.000	.	1	59.800	.
205	16	315.500	22.978	14	55.364	11.832
329	11	315.727	25.381	10	55.880	17.332
68	17	316.118	26.372	17	55.606	15.392
235	17	316.118	20.155	16	56.456	11.572
202	22	316.136	20.817	22	55.045	17.426
310	22	316.227	23.332	17	54.500	16.061
158	3	316.333	34.530	3	57.967	23.089
78	21	316.381	28.673	15	53.353	16.401
69	19	316.474	31.870	14	44.286	20.435
73	22	317.773	30.106	18	58.644	14.195
108	29	317.793	19.481	22	57.491	9.974
64	17	317.824	19.060	16	58.350	11.712
328	17	318.059	28.639	16	51.456	13.364
104	24	318.500	24.783	24	59.350	16.203
77	20	319.500	27.167	14	49.136	17.833
76	23	320.000	25.554	22	57.464	15.424
75	20	322.850	27.427	19	55.716	13.696
185	19	324.474	23.112	14	60.686	11.548
214	3	333.000	19.157	3	58.033	30.998
327	12	335.000	20.054	11	59.427	11.528
96	1	336.000	.	1	79.600	.

Table F.2:

MJ3-Regular Standard Curriculum - I Can Learn Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
36	9	259.556	28.658	36	41.050	8.437
32	4	264.500	20.290	32	27.850	10.561
148	16	267.063	35.328	148	33.547	14.016
149	16	268.438	47.767	149	40.581	8.057
147	15	269.467	26.949	147	35.942	10.411
145	12	270.167	25.445	145	39.236	10.821
146	17	272.765	23.247	146	35.519	9.889
15	22	276.636	47.244	15	42.889	16.740
37	9	277.889	41.417	37	39.800	10.643
280	1	280.000	.	280	39.600	.
285	23	280.826	51.223	285	47.700	14.371
89	25	282.120	30.104	89	39.504	12.502
324	17	282.882	39.568	324	40.021	13.459
35	18	283.111	31.875	35	43.550	9.690
33	14	284.143	21.012	33	40.891	13.135
282	19	285.474	47.487	282	46.260	19.437
88	12	286.333	33.413	88	38.810	16.158
78	19	286.737	26.928	78	46.007	14.074
150	21	287.048	26.727	150	37.939	9.540
219	24	287.417	27.888	219	42.571	13.767
14	19	287.737	16.944	14	42.711	11.087
284	24	288.250	30.808	284	43.178	15.585
220	24	289.250	34.805	220	43.995	20.483
281	18	289.778	60.291	281	50.420	15.402
260	14	290.714	24.104	260	40.908	11.405
283	24	290.917	28.846	283	44.933	12.065
259	14	290.929	29.880	259	45.362	13.419
195	21	290.952	49.616	195	52.041	20.153
320	17	291.353	22.833	320	41.806	8.899
286	28	292.571	32.595	286	48.116	16.096
85	19	293.053	32.839	85	51.773	16.085
79	25	293.400	25.329	79	40.019	9.764
319	13	293.692	35.659	319	37.756	12.219
11	24	294.667	26.921	11	47.018	12.091
189	21	296.286	38.099	189	50.736	14.015
13	22	297.045	26.357	13	44.852	14.386
222	24	297.750	36.695	222	49.589	15.271
261	14	299.143	21.267	261	45.279	9.647
194	13	299.923	31.208	194	47.369	14.857
144	17	300.000	14.577	144	46.019	11.182
255	14	300.214	30.818	255	45.827	14.647
191	22	304.727	22.374	191	49.753	11.533
120	25	305.400	23.780	120	52.659	16.039
291	26	305.885	32.170	291	49.295	12.226
294	23	306.304	24.146	294	48.420	14.577
292	28	306.464	22.034	292	55.714	17.480
87	16	306.938	20.045	87	50.677	9.201
256	22	307.227	27.080	256	51.821	13.596
210	24	307.292	22.054	210	62.210	12.725
122	13	307.308	24.257	122	59.411	10.890

Table F.2 (cont.):

MJ3-Regular Standard Curriculum - I Can Learn Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
325	8	307.625	26.268	325	51.457	21.592
121	19	309.000	16.449	121	54.372	9.060
190	17	309.176	39.723	190	53.467	15.305
114	24	314.542	27.166	114	51.692	10.531
212	23	315.217	20.752	212	58.141	12.564
211	22	316.000	21.274	211	56.706	15.454
209	14	317.571	31.277	209	55.000	18.847
115	19	320.895	28.089	115	53.119	16.216
257	1	330.000	.	257	48.400	.
12	2	340.500	14.849	12	93.300	.
258	2	352.000	5.657	258	85.750	1.626

APPENDIX G

MJ-3 FCAT EXEMPT DISTRICT WIDE

CLASS MEANS

Table G.1:

MJ-3 FCAT Exempt - District Wide - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
39	3	144.33	49.03	3	20.83	1.67
100	4	191.50	85.43	4	32.85	21.04
227	11	192.18	77.22	11	25.03	8.99
136	1	194.00	.	1	33.00	.
198	2	195.00	134.35	2	66.00	46.67
318	2	196.00	135.76	2	28.05	24.96
42	3	197.67	85.65	3	26.30	8.59
176	1	198.00	.	1	33.00	.
102	1	200.00	.	1	27.20	.
278	9	204.44	80.46	9	28.61	10.56
279	9	206.78	68.43	9	29.86	8.03
130	9	209.00	71.13	9	29.72	8.49
139	3	209.67	15.14	3	26.40	12.25
228	6	212.50	90.23	6	33.08	10.40
165	9	218.11	46.80	9	33.01	8.24
22	5	218.60	16.29	5	28.30	7.70
40	11	219.27	51.07	11	33.89	9.40
154	4	219.50	79.88	4	32.13	11.71
5	1	220.00	.	1	35.10	.
8	7	221.14	61.69	7	27.39	9.90
218	2	221.50	43.13	2	31.90	10.89
48	2	223.00	9.90	2	38.30	35.64
133	10	224.40	91.75	10	34.26	15.53
178	5	227.40	63.37	5	19.60	11.59
93	6	231.00	64.89	6	25.35	12.78
299	1	232.00	.	1	24.20	.
132	6	233.83	70.41	6	36.73	9.92
47	16	236.56	80.48	16	38.34	18.94
304	8	237.50	63.26	8	26.84	11.51
234	1	238.00	.	1	37.70	.
155	2	239.00	46.67	2	34.35	7.42
52	6	239.50	30.36	6	32.02	16.19
225	7	240.57	40.05	7	19.23	10.71
21	4	241.00	36.01	4	30.25	10.38
323	1	241.00	.	1	27.20	.
65	4	241.75	54.21	4	29.23	11.58
276	9	243.44	63.55	9	27.56	8.91
51	8	243.63	58.91	8	27.55	4.32
193	1	244.00	.	1	31.50	.
216	1	245.00	.	1	24.20	.
280	2	245.00	50.91	2	43.45	10.82
34	5	246.20	23.02	5	19.06	13.26
151	6	247.17	36.65	6	34.28	9.48
152	5	248.20	20.61	5	25.80	9.20
131	11	248.36	20.39	11	29.79	9.14
179	5	248.60	35.81	5	32.38	3.56
81	1	250.00	.	1	18.90	.
226	3	250.67	28.29	3	28.70	11.76
253	17	251.18	55.14	17	28.92	10.73
267	3	251.67	131.69	3	57.67	17.78

Table G.1 (cont.):

MJ-3 FCAT Exempt - District Wide - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
316	3	252.00	36.59	3	33.53	7.56
117	2	254.00	29.70	2	34.95	15.20
138	1	254.00	.	1	44.10	.
16	2	254.50	19.09	2	35.55	5.73
134	1	257.00	.	1	33.00	.
107	9	257.89	33.82	9	31.67	13.11
20	8	258.00	37.29	8	25.85	10.40
143	1	258.00	.	1	37.70	.
254	8	258.00	55.74	8	31.41	14.12
192	3	259.67	40.53	3	29.47	6.88
297	1	260.00	.	1	29.10	.
84	8	260.13	24.77	8	30.83	11.79
182	3	260.33	142.16	3	39.17	25.55
331	6	260.67	33.60	6	33.00	17.04
200	10	261.00	34.96	10	34.19	17.31
307	1	261.00	.	1	35.10	.
99	9	261.22	31.76	9	27.56	11.84
199	5	262.60	32.81	5	31.04	12.21
309	14	265.79	31.21	14	37.07	12.56
241	6	265.83	56.93	6	46.03	7.65
263	9	266.44	23.51	9	31.59	9.45
229	2	266.50	0.71	2	48.85	13.08
186	2	267.50	96.87	2	26.05	35.43
19	7	268.71	37.40	7	30.73	12.50
156	2	270.00	26.87	2	45.15	4.60
295	2	270.00	1.41	2	39.80	2.97
277	5	270.20	35.69	5	35.74	6.85
106	4	271.00	17.47	4	35.93	10.43
303	8	271.13	33.25	8	31.29	9.78
159	4	271.75	18.82	4	36.75	7.25
41	7	272.00	31.86	7	40.77	9.92
113	3	272.00	22.61	3	33.67	16.62
251	2	272.00	43.84	2	43.30	0.42
197	2	273.00	41.01	2	23.10	17.96
317	9	273.22	31.28	9	37.23	10.17
105	5	273.40	48.27	5	26.90	14.06
23	9	274.33	25.69	9	35.21	7.13
305	4	274.50	28.27	4	19.20	9.53
289	4	274.75	17.54	4	40.90	13.69
315	4	274.75	31.33	4	34.68	15.33
60	11	274.91	25.84	11	29.51	12.62
61	10	275.80	36.45	10	34.35	14.46
158	2	276.00	35.36	2	43.65	15.06
180	1	276.00	.	1	37.70	.
187	1	276.00	.	1	37.70	.
268	2	276.00	21.21	2	46.50	6.51
2	2	276.50	88.39	2	32.10	26.87
118	1	277.00	.	1	31.50	.
163	3	277.33	18.15	3	42.97	4.01
237	4	277.75	14.82	4	21.20	8.12

Table G.1 (cont.):

MJ-3 FCAT Exempt - District Wide - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
135	2	278.00	33.94	2	41.70	5.66
232	3	278.67	50.74	3	39.50	14.77
82	3	280.00	23.07	3	24.20	12.47
330	12	280.17	26.97	12	37.58	11.44
275	4	280.25	50.72	4	65.43	25.51
101	2	280.50	54.45	2	41.25	8.70
80	3	280.67	27.79	3	30.57	3.01
3	1	281.00	.	1	33.00	.
224	5	281.80	52.61	5	38.26	19.92
205	3	282.00	25.71	3	48.07	8.71
269	10	282.10	44.76	10	34.12	14.33
244	2	282.50	14.85	2	44.70	16.55
287	2	283.50	38.89	2	34.05	1.48
294	2	283.50	17.68	2	46.10	9.19
44	3	284.33	31.34	3	47.73	11.19
112	3	285.00	5.20	3	49.47	21.11
127	1	286.00	.	1	33.00	.
203	2	286.00	36.77	2	51.40	31.54
306	1	286.00	.	1	43.60	.
59	3	286.67	22.05	3	31.27	11.60
141	1	287.00	.	1	31.50	.
185	1	287.00	.	1	37.70	.
235	3	287.00	14.11	3	33.27	4.31
29	2	287.50	28.99	2	38.50	4.81
46	1	288.00	.	1	39.60	.
26	1	289.00	.	1	43.60	.
49	3	289.33	38.53	3	44.77	18.18
310	5	290.20	30.97	5	53.78	11.00
308	9	290.22	34.76	9	41.53	16.34
7	14	291.00	19.80	14	37.66	12.07
129	1	291.00	.	1	43.60	.
18	3	291.67	42.19	3	20.47	4.55
173	6	292.33	32.28	6	45.72	10.94
262	3	293.33	17.56	3	51.43	15.11
161	4	294.00	26.08	4	39.10	9.79
110	5	294.20	35.16	5	45.36	10.63
164	6	296.00	54.16	6	48.13	17.58
273	1	296.00	.	1	37.70	.
123	4	296.75	37.58	4	55.48	9.94
56	4	297.75	25.91	4	41.90	7.19
1	3	298.00	23.43	3	47.97	13.67
213	1	298.00	.	1	33.00	.
77	15	298.07	23.10	15	37.03	10.09
201	8	298.13	35.06	8	40.40	13.84
64	3	299.67	22.48	3	55.77	8.07
247	1	300.00	.	1	45.70	.
162	1	301.00	.	1	52.60	.
266	4	301.25	23.68	4	50.48	12.78
242	5	301.60	8.50	5	56.64	10.04
75	6	301.67	14.81	6	47.15	13.16

Table G.1 (cont.):

MJ-3 FCAT Exempt - District Wide - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
31	1	302.00	.	1	48.40	.
312	3	303.67	31.56	3	53.27	8.37
70	3	304.00	20.66	3	56.00	11.49
6	2	304.50	28.99	2	37.65	26.52
45	2	304.50	10.61	2	56.85	13.36
68	1	305.00	.	1	31.50	.
169	3	305.00	14.00	3	53.73	16.46
183	2	305.00	9.90	2	49.75	1.91
249	2	305.00	18.38	2	46.05	26.66
311	2	306.50	13.44	2	49.70	14.28
63	3	307.33	23.29	3	60.37	18.14
272	5	308.00	19.96	5	42.10	7.39
108	2	309.00	52.33	2	54.75	24.11
181	2	309.00	16.97	2	51.80	23.62
94	3	309.33	8.14	3	50.37	2.68
58	3	309.67	5.51	3	49.80	7.34
83	2	310.50	51.62	2	44.80	18.81
145	3	310.67	27.93	3	40.67	11.66
73	1	311.00	.	1	47.40	.
238	5	311.00	20.76	5	56.18	9.81
53	2	311.50	7.78	2	42.05	14.92
174	2	311.50	3.54	2	46.55	1.20
264	1	312.00	.	1	54.30	.
98	5	312.40	47.80	5	52.98	14.10
91	1	313.00	.	1	48.40	.
160	2	313.50	6.36	2	44.65	3.89
322	1	314.00	.	1	37.70	.
50	2	314.50	6.36	2	60.20	2.97
54	3	315.00	12.12	3	51.80	6.24
71	2	315.00	16.97	2	46.50	6.51
170	2	315.00	26.87	2	46.55	1.20
207	3	315.00	28.69	3	57.67	4.86
10	2	316.00	14.14	2	46.95	10.39
69	4	317.75	32.72	4	60.05	19.74
27	1	318.00	.	1	63.50	.
250	2	318.00	7.07	2	47.05	1.91
92	1	319.00	.	1	41.90	.
171	1	319.00	.	1	59.80	.
313	3	319.33	6.51	3	52.57	8.24
72	1	320.00	.	1	54.30	.
4	4	321.00	31.08	4	60.50	16.40
66	3	323.00	10.82	3	50.33	16.89
327	2	324.00	5.66	2	67.80	11.31
271	4	324.50	19.60	4	55.68	12.84
321	1	325.00	.	1	58.10	.
202	4	326.50	12.29	4	46.33	18.75
265	5	327.40	20.23	5	52.16	17.70
96	1	329.00	.	1	68.50	.
233	2	338.00	4.24	2	72.15	5.16
290	1	340.00	.	1	59.80	.

Table G.1 (cont.):

MJ-3 FCAT Exempt - District Wide - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
74	1	342.00	.	1	46.30	.
78	2	347.00	21.21	2	65.60	0.99
109	1	349.00	.	1	68.50	.
76	2	350.00	9.90	2	70.35	7.71
95	1	357.00	.	1	35.10	.
62	1	358.00	.	1	68.50	.

Table G.2:

MJ-3 FCAT Exempt - District-Wide - I Can Learn Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
282	1	213.00	.	1	10.40	.
220	4	244.50	71.90	4	44.68	14.58
115	2	245.50	57.28	2	36.45	13.08
255	2	252.00	12.73	2	40.65	4.17
145	1	260.00	.	1	15.40	.
259	1	260.00	.	1	41.90	.
148	1	277.00	.	1	31.50	.
14	2	278.50	9.19	2	39.45	34.01
116	3	278.67	60.38	3	45.13	4.82
147	2	282.50	17.68	2	41.25	8.70
256	2	282.50	28.99	2	28.30	13.29
32	1	286.00	.	1	45.70	.
15	3	286.33	23.12	3	37.47	2.26
281	2	287.00	24.04	2	46.95	10.39
89	2	289.00	2.83	2	26.65	6.86
212	2	291.00	83.44	2	52.10	14.42
150	2	292.00	1.41	2	46.10	9.19
78	1	294.00	.	1	29.10	.
120	1	294.00	.	1	39.60	.
285	1	298.00	.	1	48.40	.
121	1	301.00	.	1	43.60	.
114	3	302.67	19.86	3	44.97	18.02
122	4	303.00	22.09	4	44.13	11.36
291	3	304.33	34.93	3	50.43	13.39
209	2	306.00	2.83	2	52.70	2.26
33	1	307.00	.	1	47.40	.
222	3	307.00	30.05	3	48.33	16.13
146	1	309.00	.	1	15.40	.
283	2	309.00	24.04	2	41.30	13.86
260	1	313.00	.	1	64.90	.
221	1	316.00	.	1	56.40	.
320	2	317.50	13.44	2	52.95	13.22
11	1	318.00	.	1	71.80	.
211	1	319.00	.	1	81.10	.
286	1	320.00	.	1	56.40	.
13	2	322.50	0.71	2	51.90	6.36
189	2	323.50	28.99	2	45.35	8.13
294	5	328.20	35.66	5	49.78	18.73
194	3	330.67	29.02	3	47.03	18.64
191	1	336.00	.	1	52.60	.
324	2	340.00	35.36	2	58.10	2.40
210	1	342.00	.	1	71.80	.
325	1	352.00	.	1	33.00	.

APPENDIX H

MJ-3 All Curriculum

14 MIDDLE SCHOOLS USING I CAN LEARN

CLASS MEANS

Table H1:

MJ-3 All Curriculum at I Can Learn Schools - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
227	11	192.18	77.22	11	25.03	8.99
318	2	196.00	135.76	2	28.05	24.96
279	9	206.78	68.43	9	29.86	8.03
130	9	209.00	71.13	9	29.72	8.49
278	10	209.10	77.27	10	28.66	9.96
139	3	209.67	15.14	3	26.40	12.25
228	6	212.50	90.23	6	33.08	10.40
218	2	221.50	43.13	2	31.90	10.89
93	6	231.00	64.89	6	25.35	12.78
133	11	232.64	91.23	11	36.58	16.62
132	6	233.83	70.41	6	36.73	9.92
155	2	239.00	46.67	2	34.35	7.42
225	8	241.25	37.12	8	21.21	11.39
193	1	244.00	.	1	31.50	.
216	1	245.00	.	1	24.20	.
34	5	246.20	23.02	5	19.06	13.26
151	6	247.17	36.65	6	34.28	9.48
152	5	248.20	20.61	5	25.80	9.20
131	11	248.36	20.39	11	29.79	9.14
226	3	250.67	28.29	3	28.70	11.76
316	3	252.00	36.59	3	33.53	7.56
20	8	258.00	37.29	8	25.85	10.40
143	1	258.00	.	1	37.70	.
192	3	259.67	40.53	3	29.47	6.88
293	14	265.36	56.76	14	43.87	14.25
263	9	266.44	23.51	9	31.59	9.45
223	23	268.26	45.46	23	38.21	10.14
19	7	268.71	37.40	7	30.73	12.50
317	10	270.20	31.00	10	37.02	9.61
154	20	270.45	52.49	20	37.99	8.93
290	25	271.12	49.51	25	41.27	16.52
213	18	271.89	39.62	18	34.59	11.58
153	14	272.43	33.83	14	41.51	13.27
326	17	272.47	29.73	17	41.26	14.09
16	18	273.89	50.02	18	44.32	14.44
129	14	274.57	30.24	14	39.07	13.51
134	23	274.78	22.80	23	39.23	10.62
289	15	275.93	35.32	15	41.30	14.18
137	20	276.60	42.65	20	45.68	15.07
280	18	276.72	35.59	18	44.69	13.71
17	12	278.50	32.32	12	33.80	9.70
288	26	279.96	37.51	26	39.34	10.80
229	20	280.05	21.48	20	40.48	15.85
119	16	280.63	29.21	16	35.99	9.67
197	19	281.00	53.94	19	44.36	18.44
322	18	281.28	26.76	18	38.87	8.85
287	2	283.50	38.89	2	34.05	1.48
10	14	283.57	33.82	14	40.76	16.79
81	18	285.94	30.07	18	45.57	15.41

Table H.1 (con't):

MJ-3 All Curriculum at I Can Learn Schools - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
82	19	286.53	20.35	19	38.49	13.87
215	9	286.56	24.08	9	38.31	14.35
141	1	287.00	.	1	31.50	.
323	15	287.47	41.62	15	40.91	20.42
84	21	287.48	35.68	21	40.44	14.59
117	20	288.85	31.19	20	39.41	11.08
135	26	289.77	19.46	26	46.87	10.42
125	13	290.23	27.23	13	45.98	12.29
127	14	290.64	25.51	14	41.06	18.48
118	21	291.62	23.35	21	38.96	12.47
18	3	291.67	42.19	3	20.47	4.55
83	19	291.74	30.97	19	42.59	17.78
136	24	292.33	30.82	24	50.57	14.22
224	24	292.83	32.76	24	43.86	14.93
262	3	293.33	17.56	3	51.43	15.11
80	23	293.65	31.17	23	46.07	17.35
138	13	294.31	37.09	13	52.22	18.38
123	16	295.44	33.66	16	50.57	14.49
321	16	297.06	25.12	16	41.65	14.15
92	17	300.24	56.42	17	53.04	19.40
90	11	301.82	38.04	11	48.54	18.00
9	19	305.89	30.72	19	48.56	15.99
128	13	306.08	20.51	13	52.12	12.69
126	18	307.67	19.78	18	57.64	11.98
94	3	309.33	8.14	3	50.37	2.68
145	3	310.67	27.93	3	40.67	11.66
124	12	310.83	21.78	12	51.61	12.47
91	17	314.65	24.03	17	54.92	16.72
214	3	333.00	19.16	3	58.03	31.00

Table H.2:

MJ-3 All Curriculum at I Can Learn Schools - I Can Learn Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
36	6	259.17	36.17	6	41.05	8.44
148	16	262.88	29.01	16	33.42	13.55
147	14	264.36	20.84	14	36.70	10.06
149	16	268.44	47.77	16	40.58	8.06
32	5	268.80	20.03	5	31.42	12.14
145	12	269.50	25.61	12	37.25	12.40
146	17	275.65	24.57	17	34.34	10.75
37	9	277.89	41.42	9	39.80	10.64
35	16	278.44	30.49	16	43.55	9.69
280	1	280.00	.	1	39.60	.
15	22	280.23	46.32	22	42.15	15.63
88	10	281.00	33.72	10	38.81	16.16
324	16	281.63	41.63	16	42.28	13.98
319	9	282.56	35.98	9	37.76	12.22
220	23	283.39	47.21	23	44.11	19.30
89	26	283.42	29.26	26	38.52	12.56
33	12	284.33	16.91	12	41.43	12.66
282	15	285.73	46.30	15	43.08	21.18
284	18	286.00	29.56	18	43.18	15.58
14	20	286.55	16.81	20	42.39	13.11
219	20	286.60	28.69	20	42.52	14.12
78	15	286.80	19.31	15	44.88	14.25
259	14	287.86	30.74	14	45.11	12.93
150	20	289.10	25.31	20	38.76	9.60
79	21	290.62	26.51	21	40.02	9.76
283	20	291.00	27.72	20	44.57	11.90
285	18	293.00	30.35	18	46.58	13.41
260	13	293.23	25.44	13	43.20	13.02
320	19	294.11	23.27	19	42.98	9.62
255	13	294.77	31.73	13	45.03	13.57
286	25	296.44	33.19	25	47.98	16.01
281	17	296.76	38.24	17	50.01	14.68
195	16	297.00	49.06	16	53.23	20.19
85	15	297.27	23.86	15	51.77	16.09
189	23	298.65	37.67	23	50.37	13.88
261	13	299.46	22.10	13	45.41	10.03
11	22	299.82	20.35	22	47.96	13.18
144	16	300.06	15.05	16	46.02	11.18
13	23	300.17	26.30	23	45.47	13.93
256	21	301.38	26.10	21	49.58	15.01
120	22	301.45	23.04	22	51.90	16.25
116	22	302.45	29.51	22	52.24	12.04
191	20	302.75	20.87	20	49.90	11.24
221	10	304.40	18.85	10	51.44	7.39

Table H.2 (con't)

MJ-3 All Curriculum at I Can Learn Schools - I Can Learn Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
222	22	305.55	31.30	22	49.42	15.00
194	16	305.69	32.33	16	47.31	14.93
87	13	305.92	21.14	13	50.68	9.20
292	21	306.62	23.79	21	55.71	17.48
86	13	307.23	29.34	13	48.21	10.77
291	25	307.28	23.83	25	49.43	12.08
121	19	309.00	16.45	19	53.81	9.14
294	25	309.12	28.22	25	48.69	15.07
325	8	309.75	29.31	8	49.15	21.03
210	22	310.41	23.06	22	62.65	12.59
122	13	311.31	22.61	13	54.71	12.86
212	19	312.32	26.99	19	57.51	12.47
114	27	313.22	26.41	27	50.94	11.30
115	18	313.78	37.33	18	51.27	16.47
211	19	314.37	18.44	19	57.99	16.03
209	11	317.64	26.92	11	54.58	16.90
190	12	319.83	32.94	12	53.47	15.30
12	1	330.00	.	1	93.30	.
257	1	330.00	.	1	48.40	.
258	2	352.00	5.66	2	85.75	1.63

APPENDIX I

MJ-3 Standard Curriculum

14 MIDDLE SCHOOLS
USING I CAN LEARN

CLASS MEANS

Table I.1:

MJ-3 Standard Curriculum at I Can Learn Schools - Traditional Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
317	1	243.00	.	1	35.10	.
225	1	246.00	.	1	35.10	.
278	1	251.00	.	1	29.10	.
293	14	265.36	56.76	14	43.87	14.25
290	24	268.25	48.40	24	40.50	16.41
223	23	268.26	45.46	23	38.21	10.14
213	17	270.35	40.28	17	34.69	11.93
153	14	272.43	33.83	14	41.51	13.27
326	17	272.47	29.73	17	41.26	14.09
129	13	273.31	31.09	13	38.72	13.99
134	22	275.59	23.00	22	39.51	10.78
16	16	276.31	52.48	16	45.42	14.92
289	11	276.36	40.66	11	41.45	15.01
137	20	276.60	42.65	20	45.68	15.07
10	12	278.17	33.32	12	39.73	17.75
17	12	278.50	32.32	12	33.80	9.70
322	17	279.35	26.27	17	38.94	9.11
288	26	279.96	37.51	26	39.34	10.80
119	16	280.63	29.21	16	35.99	9.67
280	16	280.69	33.34	16	44.84	14.32
229	18	281.56	22.17	18	39.55	16.17
197	17	281.94	56.21	17	46.86	17.29
154	16	283.19	36.72	16	39.46	7.88
215	9	286.56	24.08	9	38.31	14.35
82	16	287.75	20.39	16	41.17	12.71
81	17	288.06	29.58	17	47.14	14.33
83	17	289.53	29.38	17	42.33	18.25
125	13	290.23	27.23	13	45.98	12.29
135	24	290.75	18.67	24	47.30	10.69
323	14	290.79	41.08	14	41.89	20.83
127	13	291.00	26.51	13	41.68	19.09
118	20	292.35	23.71	20	39.33	12.67
117	18	292.72	29.61	18	39.90	11.00
123	12	295.00	34.05	12	48.93	15.74
321	15	295.20	24.84	15	40.55	13.92
80	20	295.60	31.82	20	48.39	17.43
224	19	295.74	26.72	19	45.34	13.62
136	23	296.61	23.12	23	51.33	14.03
138	12	297.67	36.62	12	52.89	19.03
92	16	299.06	58.05	16	53.73	19.82
90	11	301.82	38.04	11	48.54	18.00
84	13	304.31	30.95	13	46.36	13.20
9	19	305.89	30.72	19	48.56	15.99
128	13	306.08	20.51	13	52.12	12.69
126	18	307.67	19.78	18	57.64	11.98
124	12	310.83	21.78	12	51.61	12.47
91	16	314.75	24.82	16	55.33	17.18
133	1	315.00	.	1	59.80	.
214	3	333.00	19.16	3	58.03	31.00

Table I.2:

MJ-3 Standard Curriculum at I Can Learn Schools - I Can Learn Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
36	6	259.17	36.17	6	41.05	8.44
147	12	261.33	20.37	12	35.94	10.41
148	15	261.93	29.77	15	33.55	14.02
32	4	264.50	20.29	4	27.85	10.56
149	16	268.44	47.77	16	40.58	8.06
145	11	270.36	26.68	11	39.24	10.82
324	14	273.29	36.11	14	40.02	13.46
146	16	273.56	23.77	16	35.52	9.89
37	9	277.89	41.42	9	39.80	10.64
35	16	278.44	30.49	16	43.55	9.69
15	19	279.26	49.36	19	42.89	16.74
280	1	280.00	.	1	39.60	.
88	10	281.00	33.72	10	38.81	16.16
33	11	282.27	16.08	11	40.89	13.13
319	9	282.56	35.98	9	37.76	12.22
89	24	282.96	30.45	24	39.50	12.50
284	18	286.00	29.56	18	43.18	15.58
78	14	286.29	19.93	14	46.01	14.07
219	20	286.60	28.69	20	42.52	14.12
14	18	287.44	17.39	18	42.71	11.09
150	18	288.78	26.73	18	37.94	9.54
283	18	289.00	27.97	18	44.93	12.07
259	13	290.00	30.89	13	45.36	13.42
79	21	290.62	26.51	21	40.02	9.76
282	14	290.93	43.27	14	45.41	19.88
320	17	291.35	22.83	17	41.81	8.90
220	19	291.58	38.15	19	43.99	20.48
260	12	291.58	25.84	12	41.39	11.77
285	17	292.71	31.25	17	46.48	13.81
286	24	295.46	33.53	24	47.63	16.25
189	21	296.29	38.10	21	50.85	14.35
195	16	297.00	49.06	16	53.23	20.19
85	15	297.27	23.86	15	51.77	16.09
13	21	298.05	26.58	21	44.85	14.39
281	15	298.07	40.18	15	50.42	15.40
11	21	298.95	20.43	21	46.82	12.35
261	13	299.46	22.10	13	45.41	10.03
194	13	299.92	31.21	13	47.37	14.86
144	16	300.06	15.05	16	46.02	11.18
191	19	301.00	19.87	19	49.75	11.53
120	21	301.81	23.55	21	52.48	16.41
255	11	302.55	27.57	11	45.83	14.65
221	9	303.11	19.52	9	50.89	7.62
256	19	303.37	25.81	19	51.82	13.60
325	7	303.71	25.73	7	51.46	21.59
294	20	304.35	24.88	20	48.42	14.58
222	19	305.32	32.28	19	49.59	15.27
87	13	305.92	21.14	13	50.68	9.20
116	19	306.21	22.40	19	53.36	12.52

Table I.2 (con't)

MJ-3 Standard Curriculum at I Can Learn Schools - I Can Learn Classes						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
292	21	306.62	23.79	21	55.71	17.48
86	13	307.23	29.34	13	48.21	10.77
291	22	307.68	23.05	22	49.30	12.23
210	21	308.90	22.50	21	62.21	12.72
121	18	309.44	16.81	18	54.37	9.06
211	18	314.11	18.94	18	56.71	15.45
114	24	314.54	27.17	24	51.69	10.53
212	17	314.82	17.91	17	58.14	12.56
122	9	315.00	23.10	9	59.41	10.89
190	12	319.83	32.94	12	53.47	15.30
209	9	320.22	29.38	9	55.00	18.85
115	16	322.31	25.71	16	53.12	16.22
12	1	330.00	.	1	93.30	.
257	1	330.00	.	1	48.40	.
258	2	352.00	5.66	2	85.75	1.63

APPENDIX J

MJ-3 FCAT-Exempt

14 MIDDLE SCHOOLS
USING I CAN LEARN

CLASS MEANS

Table J.1:

MJ-3 -FCAT Exempt - Traditional Classes -14 Middle Schools Using I Can Learn						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
227	11	192.18	77.22	11	25.03	8.99
136	1	194.00	.	1	33.00	.
318	2	196.00	135.76	2	28.05	24.96
278	9	204.44	80.46	9	28.61	10.56
279	9	206.78	68.43	9	29.86	8.03
130	9	209.00	71.13	9	29.72	8.49
139	3	209.67	15.14	3	26.40	12.25
228	6	212.50	90.23	6	33.08	10.40
154	4	219.50	79.88	4	32.13	11.71
218	2	221.50	43.13	2	31.90	10.89
133	10	224.40	91.75	10	34.26	15.53
93	6	231.00	64.89	6	25.35	12.78
132	6	233.83	70.41	6	36.73	9.92
155	2	239.00	46.67	2	34.35	7.42
225	7	240.57	40.05	7	19.23	10.71
323	1	241.00	.	1	27.20	.
193	1	244.00	.	1	31.50	.
216	1	245.00	.	1	24.20	.
280	2	245.00	50.91	2	43.45	10.82
34	5	246.20	23.02	5	19.06	13.26
151	6	247.17	36.65	6	34.28	9.48
152	5	248.20	20.61	5	25.80	9.20
131	11	248.36	20.39	11	29.79	9.14
81	1	250.00	.	1	18.90	.
226	3	250.67	28.29	3	28.70	11.76
316	3	252.00	36.59	3	33.53	7.56
117	2	254.00	29.70	2	34.95	15.20
138	1	254.00	.	1	44.10	.
16	2	254.50	19.09	2	35.55	5.73
134	1	257.00	.	1	33.00	.
20	8	258.00	37.29	8	25.85	10.40
143	1	258.00	.	1	37.70	.
192	3	259.67	40.53	3	29.47	6.88
84	8	260.13	24.77	8	30.83	11.79
263	9	266.44	23.51	9	31.59	9.45
229	2	266.50	0.71	2	48.85	13.08
19	7	268.71	37.40	7	30.73	12.50
197	2	273.00	41.01	2	23.10	17.96
317	9	273.22	31.28	9	37.23	10.17
289	4	274.75	17.54	4	40.90	13.69
118	1	277.00	.	1	31.50	.
135	2	278.00	33.94	2	41.70	5.66
82	3	280.00	23.07	3	24.20	12.47
80	3	280.67	27.79	3	30.57	3.01
224	5	281.80	52.61	5	38.26	19.92
287	2	283.50	38.89	2	34.05	1.48
127	1	286.00	.	1	33.00	.
141	1	287.00	.	1	31.50	.
129	1	291.00	.	1	43.60	.

Table J .1 (cont.):

MJ-3 -FCAT Exempt - Traditional Classes -14 Middle Schools Using I Can Learn						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
18	3	291.67	42.19	3	20.47	4.55
262	3	293.33	17.56	3	51.43	15.11
123	4	296.75	37.58	4	55.48	9.94
213	1	298.00	.	1	33.00	.
94	3	309.33	8.14	3	50.37	2.68
83	2	310.50	51.62	2	44.80	18.81
145	3	310.67	27.93	3	40.67	11.66
91	1	313.00	.	1	48.40	.
322	1	314.00	.	1	37.70	.
10	2	316.00	14.14	2	46.95	10.39
92	1	319.00	.	1	41.90	.
321	1	325.00	.	1	58.10	.
290	1	340.00	.	1	59.80	.

Table J. 2:

MJ-3 -FCAT Exempt - I Can Learn Classes - 14 Middle Schools						
Class	2002 FCAT Scale Score			2001 FCAT NRT NCE		
	n	Mean	Sta Dev	n	Mean	Sta Dev
282	1	213.00	.	1	10.40	.
220	4	244.50	71.90	4	44.68	14.58
115	2	245.50	57.28	2	36.45	13.08
255	2	252.00	12.73	2	40.65	4.17
145	1	260.00	.	1	15.40	.
259	1	260.00	.	1	41.90	.
148	1	277.00	.	1	31.50	.
14	2	278.50	9.19	2	39.45	34.01
116	3	278.67	60.38	3	45.13	4.82
147	2	282.50	17.68	2	41.25	8.70
256	2	282.50	28.99	2	28.30	13.29
32	1	286.00	.	1	45.70	.
15	3	286.33	23.12	3	37.47	2.26
281	2	287.00	24.04	2	46.95	10.39
89	2	289.00	2.83	2	26.65	6.86
212	2	291.00	83.44	2	52.10	14.42
150	2	292.00	1.41	2	46.10	9.19
78	1	294.00	.	1	29.10	.
120	1	294.00	.	1	39.60	.
285	1	298.00	.	1	48.40	.
121	1	301.00	.	1	43.60	.
114	3	302.67	19.86	3	44.97	18.02
122	4	303.00	22.09	4	44.13	11.36
291	3	304.33	34.93	3	50.43	13.39
209	2	306.00	2.83	2	52.70	2.26
33	1	307.00	.	1	47.40	.
222	3	307.00	30.05	3	48.33	16.13
146	1	309.00	.	1	15.40	.
283	2	309.00	24.04	2	41.30	13.86
260	1	313.00	.	1	64.90	.
221	1	316.00	.	1	56.40	.
320	2	317.50	13.44	2	52.95	13.22
11	1	318.00	.	1	71.80	.
211	1	319.00	.	1	81.10	.
286	1	320.00	.	1	56.40	.
13	2	322.50	0.71	2	51.90	6.36
189	2	323.50	28.99	2	45.35	8.13
294	5	328.20	35.66	5	49.78	18.73
194	3	330.67	29.02	3	47.03	18.64
191	1	336.00	.	1	52.60	.
324	2	340.00	35.36	2	58.10	2.40
210	1	342.00	.	1	71.80	.
325	1	352.00	.	1	33.00	.

From: What Works
Sent: Tuesday, April 27, 2010 4:27 PM
To: 'johnrlee@icanlearn.com'
Subject: What Works Clearinghouse (2010006)
Attachments: What Works Clearinghouse (2010006).pdf

Dear Mr. Lee,

Attached is a response to the questions you raised in your March 8 message to the What Works Clearinghouse (WWC).

Thank you,

What Works Clearinghouse

The What Works Clearinghouse was established by the U.S. Department of Education's Institute of Education Sciences to provide educators, policymakers, researchers, and the public with a central and trusted source of scientific evidence of what works in education. For more information, please visit http://ies.ed.gov/ncee/wwc/.

From: John Lee [mailto:johnrlee@icanlearn.com]
Sent: Monday, March 08, 2010 5:17 PM
To: What Works
Subject: Recent Review

Dear What Works Reviewers,

I read with interest your recent review of Ritter, Kulikowich, Lei, McGuire, & Morgan (2007) assessing the impact of *Cognitive Tutor® Algebra I* on the math achievement of ninth-grade students in three suburban junior high schools in Oklahoma. During the 2000–01 school year

I have concerns regarding the WWC determination that the Ritter et al. (2007) study of Cognitive Tutor meets evidence standards. This study included 11 control students who crossed over to treatment. These students should have been analyzed as controls through a conventional intent-to-treat (ITT) analysis, but the authors of the study dropped these students from the analysis (according to footnote 2 in Appendix A1 in the WWC Intervention Report for the Ritter et al., 2007 study of Cognitive Tutor). Because the authors did not conduct a proper ITT analysis, the WWC should reconsider its conclusion that this study meets evidence standards. As stated in the WWC Procedures and Standards Handbook (V 2.0): "Any movement or nonrandom placement of students, teachers, classrooms, or schools after random assignment jeopardizes the random assignment design of the study." Clearly, this non-random placement of 11 control students into the treatment condition, and the systematic exclusion of these students from the impact analysis of Cognitive Tutor compromises the integrity of this random assignment study. Because we would expect that the crossover students experienced the same benefit as treatment students, their systematic exclusion from the control group analytical sample overstates the magnitude of the Cognitive Tutor effect, especially in such a small study population of 255 students.Could you please address my concerns and respond back?

Thank you very much,

John Lee