

Credit Recovery: A Technology-Based Intervention for Dropout Prevention at Wichita Falls High School

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Abstract

Attempts are being made across the country to develop programs to improve graduation rates. One type of program is credit recovery. One such program is the Continuous Advancement Placement System (CAPS) at the Wichita Falls High School. This program is based on self-paced, computer-delivered instruction using the *A+dvanced Learning System (A+LS)* to accelerate students' earning of credits. The findings show that the students attend school at a higher rate and earn credits at twice the rate of the general student population. Additionally, the CAPS students pass the Texas Assessment of Knowledge and Skills (TAKS) at nearly the rate of the general population. English Language Learners and Economically Disadvantaged students in the CAPS program passed the TAKS test at a rate significantly greater than the general student population in Wichita Falls High School and the comparable populations for the entire state of Texas.

Introduction

The rate at which students drop out of high school is alarming. Nearly every school district has a program to address this national problem. The Wichita Falls Independent School District (WFISD) has a unique intervention program. It is called the Continuous Advancement Placement System (CAPS) and is targeted for students in the last half of their high school career. It is an intensive credit recovery program that relies on technology delivered curriculum content.

The instructional content is provided by the American Education Corporation's *A+dvanced Learning System*TM. *A+LS*[®] is highly individualized and each student progresses at his or her own rate. In the CAPS program, even the earning of credits toward graduation is at each student's pace. Additionally, the CAPS focuses on creating a collegial atmosphere where students receive individual attention to address personal issues, and meta-cognitive strategies are emphasized in the approach to everyday academic issues. WFISD perceives the program to be highly effective in reducing the dropout rate and improving the performance of at-risk students in the district. This study was conducted as a formal examination of this program and its efficacy.

Background

The rate at which students drop out of high school is a major concern in the United States. Statistics from the National Center for Educational Statistics (NCES) show that the median dropout rate each year across the U.S. is 4.2% (NCES, 2002). This may not sound alarming, but those numbers add up. As of the year 2000, the percentage of 18 through 24-year-olds who were high school completers was 86.5. This statistic excludes students who were still enrolled. But even this somewhat masks the problem. The question remains, of students who begin high school, how many graduate. The numbers, here, vary tremendously by state. They vary from a high in North Dakota of 90.1% to a low of 65% in Louisiana (NCES, 2002).

Sometimes, reporting percentages dulls the enormity of the problem. Let's put this in perspective.

"In October 2000, some 3.8 million young adults were not enrolled in a high school program and had not completed high school. These youth accounted for 10.9 percent of the 34.6 million 16- through 24-year-olds in the United States in 2000." (NCES, Dropout Rates, page v).

Concern about the dropout rate is greater now than ever before. The reasons for this

concern are noted in a research review by Woods (2001).

- As the pool of dropouts continues to grow, employment opportunities for them are more limited, because today's economy requires of the labor force increased literacy, more education, enhanced technological skills, and lifelong learning.
- The rate of engagement in high-risk behaviors such as premature sexual activity, early pregnancy, delinquency, crime, violence, alcohol and drug abuse, and suicide has been found to be significantly higher among dropouts.
- Dropouts are more likely than other citizens to draw on welfare and other social programs throughout their lives.
- Income differences between dropouts and other citizens can be expected to widen as the economy evolves, "pitting Americans with less education against computerized machines and people in low-wage nations."
- A growth of unskilled laborers in low-wage jobs will increase the trend toward developing a large American underclass that "some analysts argue, threatens the continuing existence of a democratic way of life" (Asche 1993, p. 13).

These reasons show that there is a real need for students to complete their education. The job market for the present and the future will require a higher degree of education than ever before.

Acknowledging this need, most states have dropout prevention initiatives. For example, both Texas and Florida state departments of education provide materials to assist local districts in developing intervention programs. In fact, there is a "Dropout Prevention Team" at the U.S. Department of Education and federal funds are available to support dropout prevention programs. Finally, research regarding dropout prevention interventions is one of the topics for the first year of the "What Works Clearing House."

Completing education is more important than ever in the current and future job market, but dropout rates are remaining steady at a very high level. In order to address this problem, it makes sense to look at the reasons students leave school before graduation. With this knowledge, programs can be developed to address the perceived needs.

The 1994-95 Texas Dropout Report named the top ten reasons students in Texas decided to leave school.

- poor attendance
- to enter a non-state-approved GED program
- employment
- low or failing grades
- over-age for grade level
- to get married
- pregnancy
- suspension/expulsion
- failed exit test/did not meet graduation requirements
- to enter a non-state-approved alternative program

Characteristics of Effective Dropout Prevention Programs

Many programs have been developed over the years. There has been considerable research regarding the characteristics of effective dropout prevention programs. An article by Woods (2002) summarizes much of the research in five categories of characteristics. (The summary provided below highlights many of the categories: it is not exhaustive but illustrative to serve as background for the development of the CAPS program.)

The first category is organization and administration: How a school is set up and how it runs. These essential characteristics form the basis of effective programs.

- The programs form smaller learning communities by creating schools within a school.
- The program maintains a low student/teacher ratio.
- The program is fair but uncompromising in its discipline.
- The program is flexible in its delivery and scheduling.
- The program is careful about its staff selection and development.

The second category is school climate: What is the essential feeling of programs that work for students?

- The programs emphasize safety and orderliness.
- The programs build a family atmosphere.

Third is the way the program and instruction is delivered to the students: Is the program student-centered in the way it is delivered?

- Intensive intervention is undertaken to insure early success.
- There is an emphasis on tutoring and mentoring.
- There is extensive use of instruction technologies to assure student success.
- There are clear instructional objectives.

Fourth is the instructional content and curriculum. How does instruction differ from traditional classroom education?

- There is a mix of academic instruction and experiential learning.
- There is concentrated reading and writing activities, basic skills remediation, self-esteem building, and social skills training.

Finally, is the culture of the teaching staff: What is the culture of the program teaching staff that is required for a dropout prevention program to be effective?

- The staff must be committed to program success.
- The staff must hold high expectations for student academic achievement.
- The staff must be caring adults that deal with the "whole child."
- There must be a climate of collegiality among staff that extends to engendering a sense of belonging to the students.

The Role of Instructional Technology

One of the basic characteristics of a successful program is extensive use of instructional technologies to assure the academic success of the students. The effectiveness of computers in academic achievement was examined as a primary scientific research base for the *A+ Software* (Trautman, 2002). The review found a strong basis over a 25 to 30 years period. A major synthesis of research (Cotton, 1995) showed:

- faster learning rate
- better retention of learning
- improved attitude
- increased internal locus of control
- improved school attendance
- increased motivation
- increased time on task

It should not escape the reader's attention that these outcomes in students using computer-aided instruction are especially important for students at risk of dropping out or for students who are returning after having already dropped out. It is of little wonder that computers are widely used in alternative education and dropout prevention programs.

Credit Recovery Programs

One specific application of dropout prevention programs is known as Credit Recovery. An Internet search revealed numerous programs in many school districts called credit recovery programs. But, it is difficult to find a definition of credit recovery in state statutes. Nevertheless, a definition of these programs can be ascertained by examining their descriptions. Most credit recovery programs identify the population they serve as students who are toward the second half of their high school career, who are older, and whose main focus is the completion of the credit requirements to graduate from high school. By being in the second half of their high school careers, it means that the students have already earned approximately $\frac{1}{2}$ of the credits needed for graduation.

Credit recovery programs seem to be distinct from alternative programs designed for students who need to be in a setting other than standard education for the majority of their school career. Most of the districts surveyed that have credit recovery programs also have other alternative education programs serving different populations of students.

The program being investigated by this study is the Continuous Advancement Placement System (CAPS) of the Wichita Falls Independent School District. It is a school-within-a-school at the Wichita Falls High School. It is designed expressly for students who have earned approximately $\frac{1}{2}$ or more of the necessary credits for graduation. The *A+Software* from the American Education Corporation provides the core instructional content for the program. Two teachers and an aide staff the program. The program and its design will be discussed in detail in the methods section of this report.

This research was designed to study the effectiveness of the CAPS program in addressing

the dropout problem at Wichita Falls High School. CAPS serves students in danger of dropping out, or who have already dropped out. The effectiveness of this program will be compared to students admitted to the CAPS program who had not previously completed ½ of their credits. The program for this second group also had two significant program modifications. The first was that attendance was only required for ½ day. The second was that if the students attended Monday through Thursday with no absences, they would be excused from class for Friday. The success rates will also be compared to students in the regular program at the high school and state as a whole.

The essential question is: Is the CAPS program effective in addressing the needs of credit recovery students as evidenced by their attendance, rate of completing credits toward graduation, and pass rates on required state tests?

Methodology

First, the Continuous Advancement Placement System (CAPS) program will be described according to the five program characteristics categories described by Woods (2002) with one addition. There will be a full description of the students targeted for this intervention.

Targeted Students

The CAPS program was designed to serve students in danger of not graduating on time. This means that the program serves mainly 11th and 12th graders. As such, it is an intensive program to regain lost credits and accelerate the earning of remaining credits toward graduation. It is a highly focused program that is strongly goal directed with a continuous emphasis on graduation.

Students who enroll in the CAPS program are in danger of not graduating on time for a variety of reasons. These students may fit one or more of the following descriptions:

- Parent or Parent-to-be
- Runaway
- Special Ed./Inclusion (Tactile Kinesthetic Learner)
- Senior at Risk (Quit at Mid Term)
- Transfer from another state(criteria)
- ESL/migrant
- Truancy case
- Substance abuse
- Visual learner

It should be noted that the reasons cited for students entering the CAPS program does not include students with persistent discipline referrals, expulsion, or suspensions. The District has a different program designed specifically for students with persistent disciplinary issues.

Organization and Administration

The CAPS program is a school within a school at the Wichita Falls High School. It consists of two classrooms with 18 to 24 computers in each room. The program forms a smaller learning community within WFHS. The staff ratio is planned at approximately 20 to 1 with a bi-lingual assistant to serve the entire student body. The program emphasizes personal responsibility and is fair but uncompromising in its discipline.

Students are referred to the CAPS program by the school counselor through the student study team (SST). The SST, as part of its referral, recommends the courses required for

graduation, but the sequence in which the courses are taken is left to the CAPS instructional staff.

School Climate

The CAPS program emphasizes a cooperative, collaborative environment. The goal of graduation is kept in the forefront of thinking. Instructional staff strive to create an atmosphere of a collaborative "family" that supports each other in achieving common goals. Students are engaged in a mentoring relationship in contrast to a traditional didactic relationship where the teacher is expected to teach and the student learn. As part of the mentoring relationship, instructional staff get to know students and provide support in general problem solving. The problem solving begins with academic topics but is likely to include general life issues.

Service Delivery/Instruction

CAPS is, at its core, an intensive intervention to ensure success. The student is first engaged in a course where immediate success can be expected. Once the pattern of success is established, the student is encouraged to take the hardest courses next and "get them out of the way." For most students, this is math. Finally, the remaining required courses for graduation are taken.

All of the students' courses are delivered through instructional technology in the form of the *A+Software* from The American Education Corporation. The instructional staff provide mentoring support as the student works through lessons delivered on the computer.

Students know and understand the objectives of the program: to learn, to pass the state required exit examination, and to earn credits to graduate. The learning is self-paced. Students

understand that when they complete a course, they receive credit for that course, and they move on to the next course. So, feedback and reinforcement (earning the credit) is immediate.

As the CAPS program began, the target rate for earning credits was four credits per semester. It was believed that this was a reasonable goal because of the nature of the instruction delivery system. Time is not lost to group activities. All of the instruction is individual and individualized.

Students primarily work independently. Headphones are permitted and the result is that distractions are minimized and each student remains highly focused on the lessons presented through the computer. As a student enters the CAPS program, he or she is paired with a student who is already succeeding. This encourages a collaborative learning environment and promotes social skills that are essential in the workplace environment. Students attend the program from 7:45 a.m. to 2:45 p.m., the same hours as a standard school day at WFHS.

Instructional Content/Curriculum

As noted above, The American Education Corporation delivers instruction primarily through the *A+Software*. It provides a complete range of high school level courses in the four main subjects: Language Arts, Mathematics, Science, and Social Studies. There is also instruction in the four core academic areas down through the elementary grades. Using instructional content from the elementary level materials often provides support for students with lower level skills.

The software is characterized by direct instruction that is clear, uncluttered, and highly focused. It provides immediate feedback as students are learning the material and provides a comprehensive management system so that instructional staff can use data to inform instruction and make individualized modifications to student assignments as needed. Through the software,

all student learning is self-paced and students progress at a rate in which they can be successful.

While the software has diagnostic assessments that can identify previously mastered objectives and provide individualized prescriptions based on student need, students in the CAPS program take entire A+LS courses. The main reason for this practice is to ensure success.

Finally, the students are encouraged to take notes as they take lessons using the *A+Software*. There are two reasons for this practice. First, it appears that students who take notes while they are learning are more efficient and have better retention of what they have learned. The second, the student who takes courses in a standard education environment will be better prepared to be successful in that learning environment.

Staff/Teacher Culture

The final category in describing the CAPS program is the instructional staff culture. Many of the qualities have been alluded to in describing the program above. The instructional staff are clearly committed to the program and the success of the students. They are part of serving this at-risk group of students by choice. They clearly have high expectations of the students and their achievement. Instructional staff members view students as "whole people" where academic success is a part of "life success." As a result, they interact with the students in a way that encourages problem solving and a proactive approach to dealing with life.

This can be clearly seen in interactions with students when there is a question. Instructional staff members are carefully trained in a specific approach. A student's question is usually answered with an open-ended question. The question is designed to help the student alter his or her perspective on the original question and engage the student in problem solving. The CAPS instructional staff is teaching students meta-cognitive strategies for dealing with academic

problems and, in the end, life problems. In short, the entire approach of the CAPS program is to teach students to be learners and help them acquire the skills to be successful in life.

Formal Research Hypotheses:

a) Students who participate in CAPS have a higher credit completion rate than . . .

- Students in regular education programs

b) Students who participate in CAPS have a higher attendance rate than . . .

- Students in the Fasttrack program
- Students in regular education programs

c) Students who participate in CAPS have a higher TAKS pass rate than . . .

- Students in regular education programs
- Students in the State of Texas as a whole, analyzed by group

Results

The results will be reported in terms of each research hypothesis addressed.

Credit Completion

The first hypothesis on which to report is that students who participate in CAPS have a higher credit completion rate than other students at Wichita Falls High School. The data for credit completion per year is shown in the table below. Students in the CAPS program earn credits at a significantly faster rate than students as a whole at Wichita Falls High School. Their

rate of earning credits was slightly more than twice as many credits per year as in the standard education program (Table 1). The data to compare the credit completion of students in the Fasttrack program to those in the CAPS program were not available.

Table 1. Credits earned by CAPS, Fasttrack, and Standard Education students

	Number of Students	Credits Completed	Average Credits Per Student
CAPS	130	1300	10
Fasttrack	Not available	Not available	Not available
Standard Education	1354	6060	4.47

Attendance

The second question asked was in regard to attendance. Do students who participate in CAPS have a higher attendance rate than students in the Fasttrack program or students in standard education programs at Wichita Falls High School? Table 2, below, shows the data that addresses this question.

Table 2: Average daily attendance for CAPS, Fasttrack, and Standard Education students

	Average Daily Attendance
CAPS	96.5%
Fasttrack	90%
Standard Education	93.7%

The CAPS students had better attendance than the student body at large. However, the Fasttrack student attendance was less than the other two groups. These differences were analyzed according to the procedures for testing hypotheses of proportions between Independent Samples described by Hinkle, Wiersma, and Jurs (2002). Each of the comparisons approached statistical significance. The average daily attendance observed for the CAPS students was higher than the average daily attendance recorded for the Standard Education students, and the difference approached statistical significance, $z = 1.27$, $p = .102$. In contrast, the average daily attendance

observed for the Fasttrack students was lower than the average daily attendance for the average daily attendance for the Regular Education students. This difference also approached statistical significance, $z = 1.25$, $p = .106$. Finally, the average daily attendance observed for the CAPS students was higher than the average daily attendance recorded for the Fasttrack students. This difference also approached significance, $z = 1.36$, $p = .087$.]

Pass Rates

The third question under consideration was in regards to pass rates on the Texas Assessment of Knowledge and Skills (TAKS). It was shown that students in the CAPS program earned credits at a faster rate than students in the regular education program. The question that comes next is whether the students are learning and retaining what they have learned at rates that exceed standard education. In a very practical sense, this can be evaluated by means of the TAKS. Not only does it measure student learning, but it is also a test that students must pass to graduate.

Student Pass Rates on the TAKS

	Math	ELA	Social Studies	Science
CAPS	47%	59%	96%	70%
CAPS - LEP	92%	68%		
CAPS - Economically Disadvantaged	89%	97%		
Wichita Falls High School	58%	84%	89%	58%
Texas Average	85%	87%	97%	85%
Texas - LEP	59%	42%	81%	47%
Texas - Economically Disadvantaged	76%	79%	94%	74%

Please refer to Appendix 1 for the statistical analyses.

It can be seen that the CAPS students compared favorably to the Wichita Falls High School as a whole. Students who are generally considered to have had educational difficulties, the students in the credit recovery program, are performing within a few percentage points of their standard education peers. In fact, the rate at which the CAPS students pass the Texas Assessment of Knowledge and Skills exceed their standard education peers in Social Studies and Science. The exception is in the area of English Language Arts.

Perhaps of more interest are the results of the Limited English Proficiency (LEP) and Economically Disadvantaged students. These students with limited English proficiency out-performed their peers in math at Wichita Falls High School. The LEP and Economically Disadvantaged students also out-performed their peers in the CAPS program in English Language Arts. In all cases, these differences were statistically significant as analyzed by the procedures for testing hypotheses in One-Sample Cases described by Hinkle, Wiersma, and Jurs (2002).

Finally, using the One-Sample Cases statistic described by Hinkle, Wiersma, and Jurs (2002), the pass rates on the TAKS test for the students with limited English proficiency and the economically disadvantaged were compared to the pass rates of these groups in Texas as a whole. In each instance, the performance of these groups at the Wichita Falls CAPS program exceeded the same groups for the State of Texas.

Students with Limited English Proficiency (LEP) in the CAPS program took the TAKS high school exit test. Of the students who took the test, 92% passed the mathematics portion of the test. This compares to 58% of the students in the general education program at Wichita Falls High School, $z = 26.15$, $p > .01$. The pass rate of the students with LEP in the CAPS program also exceeded the pass rate of LEP students in all of Texas (59%), $z = 66$, $p > .01$.

In addition, 68% of the students with LEP in the CAPS program passed the Language Arts portion of the TAKS. This compares to 87% of all Texas students and 42% of students with LEP in all of Texas. So, while the CAPS-LEP students' pass rate on the TAKS Language Arts test is significantly lower than the general population in Texas ($z = -271$, $p > .01$), the pass rate is significantly higher than students with LEP throughout the state of Texas ($z = 52$, $p > .01$).

Similar results were found for students who are Economically Disadvantaged (ED). Of the students who took the test, 89% passed the mathematics portion of the test. This compares to

58% of the students in the general education program at Wichita Falls High School, $z = 23.85$, $p > .01$. The pass rate of the students who are ED in the CAPS program also exceeded the pass rate of ED students in all of Texas (76%) by 13 percentage points which was statistically significant, $z = 65$, $p > .01$. The ED CAPS students' pass rate on the TAKS mathematics test also exceeded the all of the students in Texas (85%) by a margin of 4 points which was also significant, $z = 57.1$, $p > .01$.

In addition, 97% of the Economically Disadvantaged students in the CAPS program passed the Language Arts portion of the TAKS. This compares to 87% of all Texas students and 79% of Economically Disadvantaged students in all of Texas. So, the CAPS-ED students pass rate on the TAKS Language Arts test is significantly higher the general population in Texas ($z = -142$, $p > .01$), and the pass rate is significantly higher that Economically Disadvantage students throughout the state of Texas ($z = 35.3$, $p > .01$).

Discussion

Based on several indicators, the results indicate that the Continuous Advancement Placement System (CAPS) program that relies on A+LS for its instructional content appears to be a successful credit recovery program. Students earn credits at a more rapid rate than their standard education peers, their attendance is better, and the rate at which they pass the Texas Assessment of Knowledge and Skills is within the range anticipated. In as much as the students who attend the CAPS program are at-risk of dropping out, the increased attendance rate is an important finding of the study. While this increased attendance merely approached statistical significance ($z = 1.4$, $p = .08$), it is worthy of note and attention to this observation is important. It should be obvious that students who attend school on a regular basis will tend to learn better. It

is the opinion of these writers that attendance that is nearly 3% better than the student body at large speaks highly of the CAPS program and the motivation of the students that attend it.

Of special interest is the fact that the English Language Learners and Economically Disadvantaged students significantly out-performed other students in the CAPS program, their peers in the general education program at Wichita Falls High School, and their peers in the State of Texas as a whole. Providing education for these two groups of students has been a challenge for public education throughout the country. As the statistics for these groups in the State of Texas show, English Language Learners and Economically Disadvantaged students typically perform quite a bit lower than their English-speaking peers and students who are Economically Advantaged. Nevertheless, several observations should be made.

The Continuous Advancement Placement System (CAPS) program appears to be effective in three domains. First, the rate of earning credits by the CAPS students far exceeds that of students in the standard education program. This was the intended purpose of the credit recovery program. Students were to be able to earn credits at a more rapid rate. But, the Texas Assessment of Knowledge and Skills (TAKS), an external, independent measure, can be viewed as a more valid measure of its success for learning. Without an external measure of learning, credits earned can be interpreted as "grade inflation," or "social promotion," covering the fact that no real learning has occurred. Additionally, in the State of Texas, passing the TAKS is required for high school graduation. Because of these factors, the success of the students from the CAPS program on the TAKS test is important.

Second, students attend the program at a rate better than students in the general population. This measure is an excellent indication of ongoing student motivation and attention to the program. The lower attendance of the Fasttrack student suggests that the altered model from the original CAPS program is not as effective in maintaining student interest and

motivation. While the Fasttrack program allows students to take Friday off if they attend for Monday through Thursday, the hope is that students would be highly motivated and attend on Friday. As data for the rate of credit completion was not available, the question cannot be resolved at this point as to whether the students earn their credits is the most important measure of success. Therefore, it is recommended for further study that the credit completion data for the Fasttrack students should be analyzed to determine whether the lower attendance results in a decline in credit completion as well as attendance days, or whether it represents a reward for work well done.

Third, as noted, the pass rate for students in the CAPS program compared favorably to students in the standard education program. Of great interest is the greater effectiveness of the CAPS program with students with Limited English Proficiency and Economically Disadvantaged Students. These students' achievement on the TAKS exceeds their peers from the CAPS program and even some of their peers in standard education programs at Wichita Falls High School. Also, the LEP and Economically Disadvantaged students' performance on the TAKS far exceeds that of their peers in the State of Texas as a whole. What are the reasons for this success? It is a population that is difficult to reach effectively. The rate at which these students pass the TAKS on a statewide basis is significantly lower than the population as a whole. Why, then, is the pass rate so much better with the CAPS students using *A+LS*? Two hypotheses can be made that suggest further research. The first is the LEP and Economically Disadvantaged students in the CAPS program at Wichita Falls High School are more highly motivated than in other locations. The second is that the *A+LS* software has a style and format that is especially suited for the ELL and Economically Disadvantaged students. Both of these questions are reason for further research.

Conclusion

The Continuous Advancement Placement System (CAPS) program that relies on the *A+LS* Software Program from The American Education Corporation for its instructional content is an effective credit recovery program. Students earn credits toward graduation at an accelerated rate, they maintain attendance at a rate higher than their standard education peers, and the pass rates on the TAKS test compares favorably to their standard education peers. The program appears to be exceptionally effective for Limited English Proficient and Economically Disadvantaged students.

References

- Ash, J. (2001). *The effectiveness of A⁺ software on achievement of mathematics students in a high school setting*. Unpublished master's thesis: Middle Tennessee State University.
- Asche, J.A. (1993). *Finish for the future: America's communities respond*. Alexandria, VA: National Association of Partners in Education, Inc.
- Cotton, K. (1995). *Effective schooling practices: A research synthesis 1995, Update*. Northwest Regional Education Laboratory, Retrieved March 3, 2004, from <http://www.nwrel.org/scpd/esp/esp95.html>.
- Hinkle, T., Wiersma, W., & Jurs, S. (2003). *Applied statistics for the behavioral sciences (5th Edition)*. New York, NY: Houghton Mifflin.
- Kaufman, P., Alt, M.N., & Shapman, C.D. (2001). *Dropout rates in the United States: 2000*. Washington, D.C.: National Center for Educational Statistics.
- Texas Education Agency. Office of Dropout Prevention and Initiatives. *Summary of dropout prevention focus group meetings 2002*. Retrieved from March 3, 2004 from <http://www.tea.state.tx.us/dpchse/docs/dropoutfocusgroupreport1.pdf>
- Trautman, T. (2002). *The scientific research basis for the A+dvanced Learning System® and the A+nyWhere Learning System® instructional software programs.*, Oklahoma City, OK: The American Education Corporation: 2002.
- Woods, E. G.(2001). School improvement research series: Reducing the dropout rate. Northwest Regional Education Laboratory. Retrieved March 2, 2004, from <http://www.nwrel.org/scpd/sirs/9/c017.html>

Appendix 1

Statistical Analysis of TAKS Pass Rates for Mathematics ¹

		Comparison Groups			
Treatment Groups		WFHS General Education Students	State of Texas Students	State of Texas LEP Students	State of Texas Economically Disadvantaged Students
	CAPS - All Students	CAPS = 47% WFHS = 58% z = -8.46 $\alpha > .01$	CAPS = 47% TX-ALL = 85%		
	CAPS - LEP Students	CAPS = 92% WFHS = 58% z = 26.15 $\alpha > .01$	CAPS-LEP = 92% TX-ALL = 85% z = 100 $\alpha > .01$	CAPS-LEP = 92% TX-LEP = 59% z = 66 $\alpha > .01$	
	CAPS - Economically Disadvantaged	CAPS = 89% WFHS = 58% z = 23.85	CAPS-ED = 89% TX-ALL = 85% z = 57.1 $\alpha > .01$		CAPS-ED = 89% TX-ED = 76% z = 65.0 $\alpha > .01$

¹ All z scores were obtained by the following analysis. $z = \frac{p-P}{s_p}$ $s_p = \sqrt{\frac{PQ}{n}}$, Hinkel, et al, p 223.

Statistical Analysis of TAKS Pass Rates for Language Arts ¹

		Comparison Groups			
Treatment Groups		WFHS General Education Students	State of Texas Students	State of Texas LEP Students	State of Texas Economically Disadvantaged Students
	CAPS - All Students	CAPS = 59% WFHS = 84%	CAPS = 59% TX-ALL = 85%		
	CAPS - LEP Students	CAPS = 68% WFHS = 84%	CAPS-LEP = 68% TX-ALL = 87% $z = -271.0$ $\alpha = >.01$	CAPS-LEP = 68% TX-LEP = 42% $z = 52.0$ $\alpha > .01$	
	CAPS - Economically Disadvantaged	CAPS = 97% WFHS = 58% $z = 14.44$	CAPS-ED = 97% TX-ALL = 87% $z = 142.0$ $\alpha > .01$		CAPS-ED = 97% TX-ED = 79% $z = 35.3$ $\alpha > .01$

¹ All z scores were obtained by the following analysis. $z = \frac{p-P}{s_p}$ $s_p = \sqrt{\frac{PQ}{n}}$, Hinkel, et al, p 223.