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# PLATO Learning Secondary Solutions: An Efficacy Report

Descriptive White Paper

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August 2009

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## I.0 Summary

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This external analysis of *PLATO® Secondary Solutions* documents the solution's ability to help young people stay in school, succeed while in school, and graduate from school. *PLATO Secondary Solutions* provides online solutions for course completion, credit recovery, and progress toward graduation. The data are from several large districts that have used PLATO Learning to improve student achievement and course and graduation attainment.

- **North Carolina's Winston-Salem/Forsyth County Schools** used *PLATO Secondary Solutions* during the regular school year and in summer school. Across all Winston-Salem/Forsyth County Schools, 88% of the students who completed a PLATO Learning course in 2007–08 received academic credit for the course. Since implementing *PLATO Secondary Solutions*, the district has decreased its dropout rate by two percent. One school enrolled more than 1,800 students in *PLATO Secondary Solutions*, and 90% of those students earned the district's course credit.
- **In Akron Public Schools, Ohio**, the amount of PLATO Learning use and the number of credits successfully recovered have increased significantly since 2006. The efficiency and success of PLATO Learning's solutions is demonstrated by the fact that the total hours of use have doubled while the credits earned have increased four-fold. One Akron high school increased its graduation rates from 75% to 81%. Some of the district's high schools doubled, tripled, or quadrupled the number of credits recovered with PLATO Learning during the past three years.
- **Canton City Schools, Ohio**, using *PLATO Secondary Solutions*, had an average 400% growth in credits recovered during the past three academic years. Seventy-two students recovered 67.5 credits and 47 of the 72 completed their diploma requirements. These students received an average course grade of 82% and spent a total of 4,423 hours using PLATO Learning. One teacher said, "Thanks to PLATO Learning we have students walking the stage who would not have done so."
- **Sarasota County Public Schools, Florida**, has used *PLATO Secondary Solutions* to help a good district become more successful. After a year in its dropout prevention program, Performance-Based Diploma (PBD), the percent of students doing "B" work or better has increased and the percent doing "C" work or less has decreased. The average student in the PBD has earned six to eight credits. Eighty-six percent of the students believe they are on track for graduation, and at least 69% of the students agree they are improving in each of the four core academic subject areas.
- **The Columbus City Schools, Ohio**, have improved from "Academic Emergency" status in 1998–1999 to "Academic Watch" status in 2002–2003 to "Continuous Improvement" status in 2008–2009. In six years (2002–2008), graduation rates increased from 56% to 73.9%. The district now outperforms similar districts, and seven of its high schools have been named "Schools of Distinction" by the *US News and World Report*.

## 2.0 The Need for *PLATO Secondary Solutions*

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Schools with high dropout rates suffer from low student and faculty morale, lose state aid and other enrollment-linked revenues, and become vulnerable to NCLB sanctions. Among high school dropouts, the opportunity for professional advancement decreases dramatically, and the likelihood of social dependency or incarceration increases dramatically. Societal and economic consequences include lost productivity, lost tax revenue, and income maintenance obligations incurred.

High school dropouts earn \$9,600 less every year than high school graduates, and those dropouts are three times more likely to be unemployed than college graduates (Alliance for Excellent Education, 2007). Dropouts from the national class of 2008 will cost the United States \$319 billion over the dropouts' lifetimes (ASCD Smart Brief, 2009). America must improve high school student achievement and secondary school teaching and learning. On the evidence of this review, *PLATO Secondary Solutions* is an evidence-based, technology-mediated tool for students, their schools, and their teachers.

Dropping out of school is the result of cumulating difficulties, especially a lack of success in school. Although it is actually a short-term and mistaken response, dropping out of school can seem a rational response to chronic failure from the student's perspective. Consider being held back or retained in grade. Twenty-one percent of youth aged 16–19 who dropped out of high school had been retained compared with 4% of those who completed high school.

Success or failure in the ninth grade is strongly related to being held back (Neild, 2008). Few students can recover from grade failure, and early failure often compounds later failure (Roderick and Camburn, 1999). The most effective dropout prevention programs are those that “target groups at risk of dropping out and those that offer systematic redress of the educational system to encompass a broader range of learning needs.” (Orr, 1987).

Stated differently, not everyone learns the same way—a reality that almost every teacher understands but that few have the resources to address. Too many students with disparate learning needs overwhelm conventional classrooms and conventional print-and-lecture curriculums. Some students are bored and unchallenged. Others have fallen far behind their peers and need remediation. Still others need learning materials to be presented in different, more stimulating ways. Without attractive, engaging options to recover lost credits, students may feel their only solution is to give up and drop out. The focus of *PLATO Secondary Solutions* is to keep students on track to pass required tests and graduate on time.

## 3.0 PLATO Secondary Solutions

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*PLATO Secondary Solutions* are online solutions for course completion, credit recovery, and progress toward graduation. PLATO Learning courses emphasize:

1. Interactive digital content to engage students
2. Pre- and post-assessments to exempt already-mastered content and measure mastery of learning objectives
3. Tracking and reporting to monitor completion and generate course grades
4. Professional services to equip districts and schools with the tools they need for student success

The following overviews of significant PLATO Learning implementations represent five school districts that used *PLATO Secondary Solutions* for credit recovery. PLATO Learning content is aligned to state and national standards. Additionally, PLATO Learning content can be customized to meet local standards and district and school requirements. The details of PLATO Learning implementations, such as customized content, can limit the ability to compare results among sites.

## 4.0 Winston-Salem/Forsyth County Schools, NC

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**Summary.** Winston-Salem/Forsyth County Schools is one of North Carolina's largest school districts. The district used *PLATO Secondary Solutions* during the regular school year and in summer school. Among all schools, 88% of the Winston-Salem students who completed a PLATO Learning course in 2007–08 received academic credit<sup>1</sup> for the course. One school enrolled students into more than 1,800 sections of PLATO Learning courses for Algebra 1, English 1, Biology, and Civics and Economics and incorporated the course modules into their instructional plans. Ninety percent of the students enrolled in those 1,800 sections earned the district's course credit. Overall, the district has decreased its dropout rate by 2%.

**The District.** Winston-Salem/Forsyth County Schools enroll 52,000 students in 74 schools, making it the fifth largest school system in North Carolina and one of the 100 largest in the US. The county's students are 47% White, 34% Black, 14% Hispanic, 2% Asian, and 3% Multi-Racial. The school district serves the second-highest population percentage of economically disadvantaged students in the state.

**How PLATO Learning was Used.** This jurisdiction has used PLATO Learning for credit recovery for two years and has experienced a two percent decrease in the number of dropouts. PLATO® online solutions were used in each of the 11 high schools in 2007–08, and 2,267 students earned credits that year. Another 1,024 students earned credits using PLATO solutions in summer school. Several students enrolled in these courses had not previously been successful at school and had little reason to persist with their course work.

<sup>1</sup>Note: A "credit" is defined as credit for a single year-long course. For students trying to graduate from high school, receiving course credit is a substantial achievement.

**Winston-Salem Results.** The following table indicates the percentage of students who completed PLATO® coursework and earned academic credits. If students completed PLATO coursework at an established proficiency level, then the district accepted that achievement for official course credit. For example, the table indicates that two out of three of the East High School students completed PLATO coursework at a level of proficiency necessary to earn Winston-Salem course credit. Overall, Winston-Salem students used PLATO Learning to earn credit for 2,267 year-long courses.

The Carver High School experience is especially noteworthy. Carver enrolled students into more than 1,800 PLATO Learning sections and 90% of the students earned the district's course credit. Across all schools, 88% of the Winston-Salem students who completed a PLATO Learning course in 2007–08 also earned academic credit for their work.

<b>Name of School</b>	<b>A. Percent of students who earned course credit by completing PLATO coursework</b>	<b>B. Completed PLATO coursework at any level</b>	<b>C. Earned Winston-Salem course credit through PLATO coursework</b>	<b>D. Initially enrolled</b>
Reynolds	100	23	23	35
Mt. Tabor	98	52	51	98
Reagan	96	117	112	131
Atkins	94	17	16	40
North Forsyth	91	81	74	226
Carver	90	1,691	1,514	1,838
Career Center	90	222	199	332
West Forsyth	88	98	86	160
Glenn	81	21	17	53
East	74	111	83	126
Parkland	64	143	92	198
<b>Totals</b>		<b>2,576</b>	<b>2,267</b>	<b>3,237</b>

\*Values in column A were derived by dividing the number of students who earned course credit by the number of students who completed PLATO coursework ( $C/B = A$ ).

Of students who used PLATO Learning in summer school—a focused intervention—70% finished at a proficient level and earned course credit from Winston-Salem. Some students took summer school to make up previous deficiencies on North Carolina's end-of-year exams. Of those students, an average of 25% (with a range of 11–45%) scored at the proficient level on an end-of-course re-test at the end of the PLATO coursework.

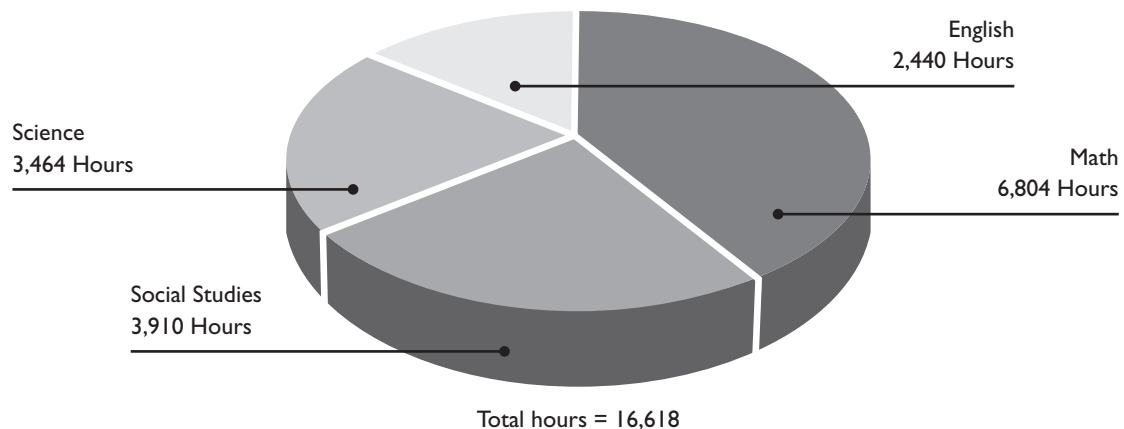
**Table 2. Winston-Salem Summer School PLATO Learning Use: 2007-08**

Session	Percent of enrolled students passing course	Percent of students enrolled for credit	Number of students passing	Total enrollment
1 and 2	78.2	585	458	861
3 and 4	64.6	803	519	903
<b>Total</b>		<b>1,388</b>	<b>977</b>	<b>1,764</b>

The availability of credit recovery in Winston-Salem schools has created opportunities for young people who would not otherwise graduate from high school. In Winston Salem Preparatory Academy, a choice high school, for example, 14 of the 50 graduates in 2008–09 would not have met credit requirements for a diploma without *PLATO Secondary Solutions*. The county's assistant superintendent for high schools commented, "PLATO Learning can be very effective when it is organized and supported...and the results show it."

In the 2008–09 academic year, several students used PLATO Learning for tutorials and remediation to keep their grades up—avoiding the need for credit recovery. Thus, the number of students using PLATO Learning is increasing, but the number of students using PLATO solutions for *credit recovery* is decreasing. The chart below indicates the amount of time students used PLATO Learning for remediation and tutorial functions in four core topics.

**Hours of PLATO Learning Remediation and Tutorial use by topic in Winston-Salem/Forsyth County Schools**



**Additional Implementation Priorities.** In addition to credit recovery and remediation for public school students, Winston-Salem/Forsyth County extended PLATO Learning into the community in 2008–09 for credit recovery, remediation, and enrichment in the following sites—where students, as early as eighth grade, prepare for high school:

- YMCA summer- and after-school programs
- Community in Schools (6 sites)
- The Housing Authority
- Goodwill

## 5.0 Akron Public Schools, Ohio

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**Summary.** The amount of PLATO Learning use and the number of credits successfully recovered in Akron have both increased significantly since 2006. The total hours of use have doubled but the credits have increased four-fold. That is a measure of the efficiency and success of PLATO online solutions—where both students and schools are earning an increased return on their investment. Some of Akron’s high schools doubled, tripled, or quadrupled the numbers of credits recovered with PLATO Learning during the past three years. One Akron high school increased its graduation rates from 75% to 81%.

**The District.** Ohio’s Akron Public Schools enroll 23,850 students in 24 elementary schools, 8 middle schools, and 7 high schools (totaling 39 schools). Akron’s students are 42% White, 48% Black, 2% Asian, and 6% Multi-Racial.

**How PLATO Learning was Used.** Akron used PLATO Learning in each of the seven high schools and in one alternative school for remediation, for credit recovery, and for general education. In addition, at a juvenile detention center, school-age detainees use PLATO Learning to recover credits and fill the gaps in their learning.

Akron Public Schools implemented *PLATO Secondary Solutions* for reading, writing, math, science, and social studies for credit recovery and for test preparation for high-stakes exams. To accommodate young people’s paid employment and other realities, PLATO Learning has been used before school, during school, and after school for the last three years. Counselors decide which students should use PLATO Learning to recover credits, and in most cases, these students have failed a class and use *PLATO Secondary Solutions* to remediate and master information.

**Akron Results.** Most students in Akron who have been successful with PLATO Learning have recovered a full credit (a transcript entry of one full year’s achievement in a topic), and some have recovered as many as three credits.

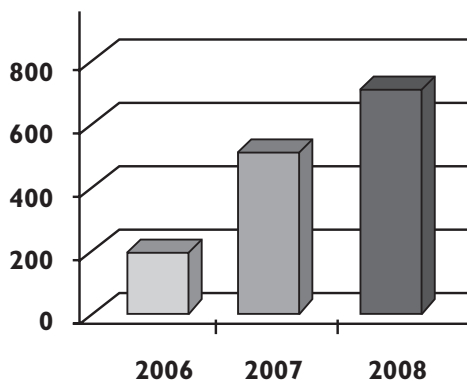
Seventy-five Akron students who earned credit using *PLATO Secondary Solutions* would not have graduated on time without the opportunity to recover those courses. In addition to credit recovery opportunities in school, students are able to complete courses in night school and summer school. These learning environments allow teachers to monitor students in a variety of topics at once—a feature that has saved Akron time and money. In the past, when students realized that they had run out of time to complete their high school course work, they dropped out, and that cost the school system tens of thousands of dollars in lost state aid. Since the districts began using PLATO Learning, fewer students are dropping out and more students are walking the stage with their classmates. For example, by using PLATO Learning for credit recovery and exit test preparation, one Akron high school increased its graduation rates from 75% to 81%.

The amount of PLATO Learning use and the number of credits successfully recovered in Akron has increased significantly since 2006 (refer to the table and figures below). Note that the credits have increased four-fold while the total hours of use have only doubled. That is a measure of the efficiency and success of PLATO Learning—where both the students and the schools are earning an increased return on their investment.

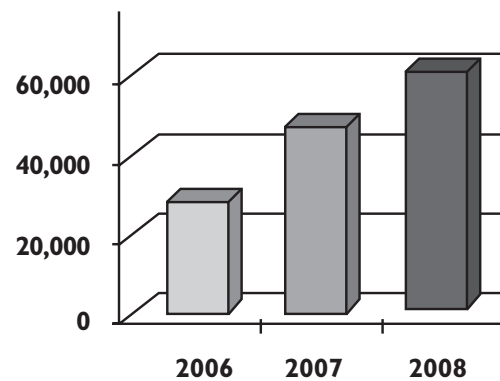
**Table 3. Total Credits Recovered and Total Use of PLATO Learning in Akron Public Schools: 2006–08**

	2006	2007	2008
Total credits recovered	164.5	518	706.5
Total hours of use	27,252	42,657	59,960

**Figure 2. Credits Recovered in Akron Public Schools (2006–08)**



**Figure 3. Hours of Usage in Akron Public Schools (2006–08)**



Some of Akron’s high schools doubled, tripled, or quadrupled the numbers of credits recovered with PLATO Learning during the past three years (refer to Table 4).

<b>Table 4. Credits Recovered in Akron Public Schools: 2006–08</b> (Schools by most-to-least by percent gain in credits recovered)				
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Percentage gain in credits recovered from 2006 to 2008*</b>
East	11	13.5	58	427
Kenmore	3.5**	10	17	386
Night School	6.5	20	28.5	338
Buchtel	18	27.5	60.5	236
Garfield	15	30.5	49.5	230
Summer School	39.5	77.5	55	39
North	0	12.5	39	***
Alternative	0	0	22.5	***
Firestone	0	4	9.5	**
Ellet	0	5.5	7	**
<b>Totals</b>	<b>93.5</b>	<b>201</b>	<b>346.5</b>	<b>Average gain: 271%</b>

\*Percentage gain was calculated using the following formula:  $P = 100[(2008-2006)/2006]$

\*\*0.5 indicates a semester’s credit recovered or half a year.

\*\*\*Denotes that the base value is zero and therefore the percent calculation is meaningless.

One teacher in Akron said her school used PLATO Learning “to provide an alternative to overcrowded classrooms and repeated failure in traditional classrooms. We have credit recovery students succeeding in this alternative course work. Thanks to PLATO Learning we have students walking the stage who would not have done so.”

## 6.0 Canton City Schools, Ohio

**The District.** Canton City Schools is one of the eight largest urban school systems in Ohio. The district enrolls 10,600 students in 2 high schools, 4 middle schools, 17 elementary schools, and a kindergarten center. Enrollment is 50.3% White, 35.8% Black, 12.1% Multi-Racial, 1.3% Native American, and 1.2% Hispanic. A total of 73.5% of the student population is economically disadvantaged.

**How PLATO Learning was Used.** Canton City Schools uses *PLATO Secondary Solutions* for career education, remediation, recovery, and general education. One program in Canton uses customized courses from PLATO Learning for ninth grade dropout prevention for boys. Another program allows students to recover credits during school, after school, and on Saturdays.

**Canton Results.** The following table lists the average 400%-plus growth in credit recovery in Canton during the past three academic years.

<b>Table 5. Credits Recovered in Canton City Schools 2006-08</b> (Schools by most-to-least percent gain in credits recovered)*				
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Percentage gain in credits recovered from 2006 to 2008*</b>
Night School	3	19.5	22.5	650
McKinley	36	163	178	394
Timken	15	20	71.5	377
Pact	17	80	47.5	179
Summer School	0	34.5	40.5	*
<b>Totals</b>	<b>71</b>	<b>317</b>	<b>360</b>	<b>Average gain 407%</b>

\* See notes to previous table.

In 2008–09, counselors identified 72 students to use *PLATO Secondary Solutions* to recover credits toward graduation. The 72 students recovered 67.5 credits, and 47 of them completed their diploma requirements. These students received an average course grade of 82% and spent a total of 4,423 hours using PLATO Learning.

One teacher in Canton believes that “PLATO Learning has given students the opportunity to recover a variety of classes and go on to graduate. These students would not have been able to recover the number of credits in time for graduation without PLATO Learning. PLATO solutions expose students to easy-to-understand information they need to be successful on the state-mandated exit tests. Both the increase in credit recovery and the successful completion of the OGT, which increase graduation, have a direct correlation to driving up our Adequate Yearly Progress.”

## 7.0 Sarasota County Public Schools, Florida

**Summary.** Sarasota County Public Schools has used *PLATO Secondary Solutions* to help a good district become more successful. After a year in its dropout prevention program, “Performance-Based Diploma” (PBD), the percent of students doing “B” work or better has increased and the percent doing “C” work or worse has decreased. The average PBD student has earned six to eight credits. Eighty-six percent of the students believe they are on track for graduation, and at least 69% of the students agree that they are improving in all four core academic subject areas.

**The District.** Eighty-three percent of the County’s schools received “A” grades from the Florida Department of Education in 2008. On several FCAT measurements, the district outperforms the statewide average. The district enrolls 47,000 students in 11 high schools, 9 middle schools, 24 elementary schools, 4 alternative schools, 10 charter schools, and 7 “special schools.”

**How PLATO Learning was Used.** Sarasota County Public Schools uses *PLATO Secondary Solutions* in their Performance Based Diploma (PBD) program—used in five high schools to prevent at-risk students from dropping out. The initiative began as a pilot at Booker High School in 2006. It offers individualized, computer-assisted instruction in math, English, social studies, and science. Students receive one-on-one help as necessary with *PLATO Secondary Solutions* for new credit and credit recovery. Each classroom in the program includes 10 computers, and students spent an average of 50 minutes each day per subject on the computer.

**Sarasota Results.** After one year in the PBD program (2008), the percent of students receiving a 3.0 GPA and above increased, while the percent of students receiving a 2.0 GPA and lower decreased. In the same year, students earned an average of six to eight credits in the program (Judge and Knopp, 2008).

In 2008–09, students earned 1,862 credits in Sarasota’s PBD program, and 216 students graduated from high school. PBD students had a mean attendance rate of 77.4% district-wide. Table 7 lists enrollment and credits earned in each of the past three academic years.

**Table 7. Sarasota County Public Schools  
Total Credits Earned in Performance Based Diploma Program 2007–09**

2007	2008	2009
1,375.5	1,692.5	1,862.5

Student survey results from 2008 indicate that more than 50% of PBD student respondents spent two to five hours per day using PLATO Learning. Eighty-six percent of the students felt they were on track for graduation, and at least 69% of the students agree or somewhat agreed that they had improved in each of the four subject areas.

On a 2008 teacher survey, 71% of Sarasota teacher respondents reported that they were able to monitor student progress with PLATO Learning reports. And all teachers surveyed agreed or strongly agreed they were able to adjust classroom practices based on individual needs.

## 8.0 Columbus City Schools, Ohio

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**The District.** Columbus City Schools is Ohio's largest district and enrolls 53,548 students in 76 elementary schools, 23 middle schools, 20 high schools, 4 career centers, and 6 alternative schools. The district's high schools have used PLATO *Secondary Solutions* for ten years. In 1999, the state labeled Columbus City Schools "Academic Emergency" because of low test scores and graduation rates.

**Summary.** The Columbus City School District, Ohio, has improved from "Academic Emergency" status in 1998–1999 to "Academic Watch" status in 2002–2003 and to "Continuous Improvement" status in 2006–2007. Between 2002 and 2008, graduation rates increased from 56% to 73%. The district now outperforms similar districts, and seven of its high schools have been named "Schools of Distinction" by the *US News and World Report*.

**How PLATO Learning was Used.** Columbus City Schools adopted PLATO *Secondary Solutions* for credit recovery, course completion, and drop out prevention. PLATO Learning is now an integral part of the system's credit recovery and distance learning initiatives. All PLATO® Courses are aligned to Ohio standards and tests.

Beginning in 1999, the district implemented PLATO in their middle and high school buildings with the objective of improving test scores for the state mandated tests. At that time, the district was rated in "Academic Emergency" by the state reporting standards.

In 2003, Columbus piloted 12 core academic PLATO Courses in 10 high schools and has since expanded their use of PLATO Courses to 16 academic subjects in each of the district's 18 high schools for the district's credit recovery programs.

**Columbus Results.** By 2003, the district's report card status improved from "Academic Emergency" to "Academic Watch."

Following that success, the Columbus City Schools implemented the Columbus Virtual High School, Credit Recovery Program, and various summer school programs. In four years, graduation rates increased from 56% to 73.9%. In 2006–2007, the district's report card status advanced to "Continuous Improvement." The district aspires to exact a 90% graduation rate by 2012.

Columbus also implemented the PLATO Elementary Solutions in 2006 for all of the district's elementary buildings.

**Table 6. PLATO Learning Use in Columbus City Schools: 2003-09**  
(Modules listed as most-to-least mastered)

	Number of modules mastered	Number of learners enrolled	Average number of modules mastered per learner
Algebra I	19,143	874	21.9
Geometry	18,179	469	38.8
English 9	17,050	803	21.2
English 12	16,372	250	65.5
English 10	9,771	502	19.5
English 11	8,429	344	24.5
Physical Science	5,033	744	6.8
World Studies	4,494	377	11.9
Algebra 2	4,341	183	23.7
US Studies	4,242	515	8.2
Biology	3,933	395	10.0
Chemistry	3,302	90	36.7
<b>Totals</b>	<b>114,289</b>	<b>5,546</b>	

## 9.0 Conclusion

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These five districts used *PLATO Secondary Solutions* to increase the numbers of credits recovered and to decrease dropout rates. Their total hours of use have also increased and that represents a vote of confidence from students who are looking to improve their school success.

- In the Winston-Salem/Forsyth District, 88% of the Winston-Salem students who completed a PLATO Learning course earned academic credit, and the district decreased its dropout rate.
- In Akron, the total hours of PLATO Learning use has doubled while the credits earned has increased four-fold. One high school increased its graduation rates from 75% to 81%.
- In Canton, schools using *PLATO Secondary Solutions* had an average 400% gain in credits recovered. One teacher said, “Thanks to PLATO Learning we have students walking the stage who would not have done so.”
- In Sarasota, 86% of the students believe they are on track for graduation and at least 69% of the students agree that they are improving in each of the four core academic subject areas.
- In Columbus, graduation rates have grown from 56% to 73.9%, and seven of its high schools have been named “Schools of Distinction” by the *US News and World Report*.

This analysis documents that *PLATO Secondary Solutions* is an evidence-based, technology-mediated tool for students, their teachers, and their schools. It is being used successfully during the academic year, during the summer, and in other special programs. Improved secondary schooling is a high priority for these students, their families, and the economy and polity of the United States. PLATO Learning has produced a set of solutions that address multiple, overlapping students’ needs, are practical and easily accessible for teachers to use, and power student performance gains.

## About Interactive, Inc.

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Interactive, Inc. is listed on the US Department of Education’s Institute of Education Science ‘gold standard’ *Registry of Outcome Evaluators* and was one of the Department’s contractors for a longitudinal, West Virginia statewide documentation of the effects of technology on student achievement and school improvement. The firm’s founder and managing director is Dale Mann, Ph.D., Professor Emeritus at Columbia University (Teachers College and the School for International & Public Affairs). Since 1985, he has concentrated in developing and evaluating the gains from e-learning, a field in which Mr. Mann has been identified as one of America’s ten most influential leaders.

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