



Advanced Placement and Industry Certification Exam Fee Pilot Programs: Conclusions and Policy Considerations

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Executive Summary

Public Chapter 351 (2013) created a two-year pilot program to pay the cost of Advanced Placement (AP) and Industry Certification exam fees at pilot schools across the state. The state appropriated \$200,000 for the program, which was designed and administered by the Tennessee Department of Education (TDOE).

The program consisted of the AP Exam Fee pilot, which included the AP Math pilot (fees paid for AP math exams) and the AP Knox County pilot (fees paid for all AP exams), and the Industry Certification Exam Fee pilot. Each pilot had the same goals:

- increase course enrollment,
- increase exam participation, and
- increase exam success.

Public Chapter 351 also required the Comptroller's Offices of Research and Education Accountability (OREA) to report on the effectiveness of the pilot program and either make recommendations regarding the potential statewide expansion of the pilot or suggest that more study is needed.

AP Exam Fee Pilot

OREA obtained course enrollment, exam participation, and exam success data for pilot schools. This evaluation reviewed the two school years preceding the pilot (SY 2011-12 and SY 2012-13) and the two years of the pilot (SY 2013-14 and SY 2014-15).

Overall, the outcomes of the AP Exam Fee pilot were as follows:

1. **Enrollment was lower than in the two years preceding the pilot.** (An important note: the pilot program likely did not have an effect on course enrollment in year one because pilot sites were not notified of their eligibility until after the start of pilot year one in SY 2013-14.)
2. **Exam participation was higher than in the two years preceding the pilot.**
3. **The pass rate was lower, but the number of exams passed was slightly higher.**

Based on these outcomes, OREA suggests that more study should be done prior to considering possible statewide expansion.

Public Chapter 351 authorizes TDOE to continue the pilot program for an additional two years, contingent on available state funding. The Governor's 2015-16 budget allocated \$400,000 for the AP and Industry Certification Exam Fee pilot program and the funds were appropriated for SY 2015-16, though details of the program are still being finalized.

In addition to reviewing the results of OREA's evaluation, the General Assembly may wish to consider the following policy considerations in continuing the pilot program.

The degree of alignment between the goals and the design of the pilot program should be closely considered. In the case of the AP pilot, state funding was more closely aligned with the pilot's second goal – to increase exam participation – and the results for this effectiveness measure were positive: exam participation increased and was higher than in the two years preceding the pilot. The other two pilot goals (to increase course enrollment and to increase exam success) were less closely aligned with the pilot's design (to pay exam costs), and the results for these effectiveness measures were less positive.

Depending on its goal or goals, a continued pilot program could again concentrate funding on reducing exam costs or direct some portion, or all, of pilot funding for other purposes, such as AP-related professional development for teachers, administrators, and school counselors. Other alternatives might include funding for classroom materials (books, lab equipment, etc.) and/or student tutoring and other academic assistance designed to increase student success on AP exams. Some of these options were included in the original House Bill 705 (2013), which was later amended to create the AP/ Industry Certification Exam Fee pilot program.

As another example, the pilot could include a goal to increase student access to AP courses. A TDOE report on school level barriers to AP success found that 46 Tennessee high schools have students who are considered AP-ready, meaning they had high scores on the 8th grade TCAP achievement test, but had either no AP courses or only AP courses in one subject area available.¹

TDOE has an existing pilot program that is providing participating rural and small school districts with technical assistance and funds for teacher training to build out AP programs in SY 2015-16.² The pilot could also include a goal to increase student readiness for AP courses. The TDOE report notes that there are 167 high schools in Tennessee that "lack a critical mass of AP-ready students."³

In addition, the pilot could be structured as a competitive grant, which would garner applications from motivated schools and districts for programming best suited to address their specific needs. Applications could be rated based on their current or planned efforts to address their AP-specific needs (e.g., create an AP program, increase the number of AP courses offered, etc.). Pilot sites might be granted more or less latitude in terms of allowable uses of the funds based on clear goals and desired program outcomes.

If exam fee reductions are a component of a continued pilot program, the General Assembly may wish to consider the interaction between state subsidies and federal subsidies, because Tennessee pilot sites were unable to receive federal subsidies for economically disadvantaged (ED) students. Federal rules require that all non-federal funds are first applied before federal funds are triggered.⁴ Tennessee's pilot was structured so that the state paid the full exam cost after the College Board reduction for ED students was applied; thus, there were no leftover exam costs after all non-federal aid was applied. Had Tennessee pilot sites been able to access federal funding, the state would have spent \$41 less per exam taken by ED students in 2014-15.

Texas has an AP program that reduces the exam costs for qualifying students by a specific dollar amount: eligible students received an exam fee reduction of \$30 per exam in SY 2014-15. The Texas program does not cover all remaining exam costs, and this enables the state to continue to access some amount of federally funded exam fee reductions (\$16 per exam in SY 2014-15).⁵

In addition, the Texas program limits state funding to students with demonstrated financial need. Tennessee's program was designed to pay the entire cost of the exam for all participating students, regardless of socioeconomic status. For non-economically disadvantaged students, the state paid the full cost of the exam less the College Board administrative rebate (\$82 in 2014-15). For ED students, the state paid the remaining costs after the College Board reduction was applied and the administrative rebate was waived (\$53 in 2014-15).

By comparison, ED students in *non-pilot* sites in Tennessee qualify for the College Board *and* the federal exam fee subsidy. ED students in non-pilot sites were ultimately responsible for \$12 of the AP exam fee in SY 2014-15 after these two subsidies were applied.^A

^A The \$12 fee is based on the assumption that the student's school chose to forgo the administrative rebate provided by the College Board.

Industry Certification Exam Fee Pilot

The results of the Industry Certification Exam Fee pilot are inconclusive. The structure of the pilot did not allow for adequate study of outcomes. The pilot would have benefitted from improved data collection (course enrollment), a larger sample of students, and more time. Some of the CTE programs eligible for the Exam Fee pilot required multiple courses culminating in the student industry certification, which were not able to be captured in the two-year time period.

The Tennessee Department of Education has issued a brief response to the evaluation:

Over the last several years, the TN Department of Education and its postsecondary partners (TN Board of Regents, University of TN system, TN Higher Education Commission, and the TN Independent Colleges and Universities Association) have worked together to implement several initiatives intended to expand the number of TN high school students earning postsecondary credits and industry certifications prior to graduation. The pilot program detailed in this report by the Office of Research and Education Accountability (OREA) represents one element of this larger commitment.

Other initiatives include:

- *the statewide dual credit program (established under Public Chapter 967 of 2012), which has provided thousands of students the opportunity to earn postsecondary credit at no cost,*
- *an AP rural expansion initiative, in partnership with the College Board, targeting rural districts with no AP offerings,*
- *the addition of Cambridge International courses leading to postsecondary credit, and*
- *the identification of aligned capstone industry certifications leading to postsecondary transferability and viable employment.*

The department is committed to expanding the state's portfolio of early postsecondary course and industry certification offerings, and it looks forward to working with OREA on future opportunities to examine the full breadth of work in this critical area.

Introduction

The Tennessee General Assembly created a two-year pilot program to increase the number of students enrolling in Advanced Placement (AP) and Career Technical Education (CTE) coursework, choosing to take the respective exams, and achieving passing scores.⁶ The pilot provided \$200,000 in state appropriations over two years to pay the cost of exam fees for AP and industry certification exams, regardless of a student's financial status. The Tennessee Department of Education (TDOE) administered and implemented the pilot program.

Public Chapter 351 (2013) requires the Comptroller's Offices of Research and Education Accountability (OREA) to report on the effectiveness of the project after year one and at the conclusion of the project. This final report includes analysis for both years of the pilot and discusses project outcomes.^B

Pilot Costs

The total expenditures for the two-year AP and Industry Certification pilot was \$204,060. The General Assembly allocated \$100,000 for each year of the pilot.

Exhibit 1: AP and Industry Certification Exam Fee Pilot / State Expenditures

	2013-14		2014-15		2 year Total	
	Exams	Expense	Exams	Expense	Exams	Expense
AP Exam Fee Pilot	1,193 ^(a)	\$90,391	1,220	\$92,674	2,413	\$183,065
Industry Certification Exam Fee Pilot	149	\$9,992	215	\$11,003	364	\$20,995
Total	1,342	\$100,383	1,435	\$103,677	2,777	\$204,060 ^(b)

Note: (a) The total number of exams taken in the AP Math Exam Fee pilot was 238 in Y1 and 193 in Y2. The total number of exams taken in the AP Knox Exam Fee pilot was 955 in Y1 and 1,027 in Y2.

(b) The additional \$4,060 dollars was provided for by TDOE's Career and Technical Education division funds.

Source: Tennessee Department of Education.

Overview: AP Exam Fee Pilot

The AP program, administered by the College Board, provides high school students the opportunity to take rigorous, college-level courses and exams and earn college credit.

TDOE identified pilot schools for the AP Exam Fee pilot using the following criteria: low percentage of AP-ready students sat for exams in 2011-12 across all AP subjects; fewer than 50 percent of AP math students sat for the AP exam in 2012-13; and at least 25 percent of the student population receives free and reduced price lunch (FRPL).^{7, 8}

^B Some data in this report is suppressed to meet Family Educational Rights and Privacy Act (FERPA) guidelines and maintain student privacy.

TDOE identified 23 schools to participate;⁹ 18 were eligible to receive exam fee reimbursements for AP math exams (Calculus AB, Calculus BC, and Statistics)¹⁰ and five schools (Knox County) were eligible to receive exam fee reimbursements for all AP exams offered at their school site.¹¹

TDOE defines pilot participation as: (1) submission of Memorandum of Understanding (MOU) on the exam fee pilot and (2) submission of reimbursement requests.¹² Of the 23 schools selected in the AP Exam Fee pilot program, 16 schools participated (11 math exam pilot schools and five all exam pilot schools). Throughout this analysis, the AP Exam Fee pilot is discussed in two parts: the AP Math Exam Fee pilot and the Knox County Exam Fee pilot.

See [Exhibit 2](#) for a list of eligible and participating AP Math Exam Fee pilot schools. Each of the five Knox County schools selected to participate in the pilot submitted MOUs and reimbursement requests for each year of the pilot study.¹³ See [Exhibit 3](#) for a list of participating Knox County pilot schools.

Exhibit 2: AP Math Exam Fee Pilot Schools and Eligibility ^(a)

School Name	School District	MOU	Reimbursements ^(b)
Heritage High School	Blount County	Yes	Yes
Cannon County High School	Cannon County	Yes	Yes
Creek Wood High School	Dickson County	Yes	No
Henry County High School	Henry County	Yes	No
Madison Academic Magnet High School	Jackson-Madison County	Yes	Yes
Central High School	McMinn County	Yes	Yes
McMinn High School	McMinn County	Yes	Yes
McGavock Comp High School	Metro Nashville Public Schools	Yes	Yes
John Overton Comp High School	Metro Nashville Public Schools	Yes	Yes
Oliver Springs High School	Roane County	Yes	Yes
Lavergne High School	Rutherford County	Yes	No
Smyrna High School	Rutherford County	Yes	Yes
Sullivan South High School	Sullivan County	Yes	No
Sullivan Central High School	Sullivan County	Yes	Yes
Warren County High School	Warren County	Yes	Yes
Munford High School	Tipton County	No	No
Hardin County High School	Hardin County	No	No
Haywood County High School	Haywood County	No	No

Note: (a) If a school submitted both an MOU and reimbursements, they were considered participating in the pilot.

(b) Reimbursements were submitted for both years of the pilot project.

Source: Tennessee Department of Education and OREA review of MOUs and district reimbursement requests.

This report details course enrollment, exam participation, and exam passage for all students for the two pilot years and the two years preceding the pilot, for comparison.

Exhibit 3: AP Knox County Pilot Schools

School Name
Carter High School
Gibbs High School
Halls High School
Karns High School
South Doyle High School

Exam Fees and Reductions

The AP Exam Fee Pilot, for both Math and Knox County programs, provides funds to districts that, in conjunction with College Board exam discounts, result in students having no expense for the covered AP exams. The U.S. Department of Education also provides funding to reduce AP exam costs for low-income students, but Tennessee

Source: Tennessee Department of Education and OREA review of MOUs and district reimbursement requests.

pilot sites could not access such funding because federal rules require that all non-federal funds are first applied before federal funds are triggered.¹⁴ Tennessee’s pilot was structured so that the state paid the full exam cost; thus, there were no leftover exam costs after all non-federal funding was applied. Had Tennessee pilot sites been able to access federal funding, the state would have spent \$41 less per exam taken by low-income students in 2014-15.

State Funding (for pilot schools) – In total, the state contribution per AP exam in the 2013-14 school year was \$55 for economically disadvantaged students and \$81 for all other students. In the 2014-15 school year, the state paid \$53 for economically disadvantaged students’ exams and \$82 for all other students’ exams.¹⁵

College Board discounts – In 2014, the College Board charged \$89 for an AP exam and provided an \$8 rebate to schools for administration. The College Board also provided a fee reduction of \$26¹⁶ for eligible economically disadvantaged students;^c in cases where the economically disadvantaged student reduction is applied, the school may forgo the \$8 rebate.¹⁷

In 2015, exam fees were \$91 and the College Board provided a \$9 rebate to schools for administrative costs. The College Board fee reduction for economically disadvantaged students was \$29, and, as in the previous year, schools may forgo their rebates for students receiving the economically disadvantaged discount.¹⁸ Participating pilot schools were required, by the TDOE, to waive the school rebate for all students, regardless of socioeconomic status.¹⁹

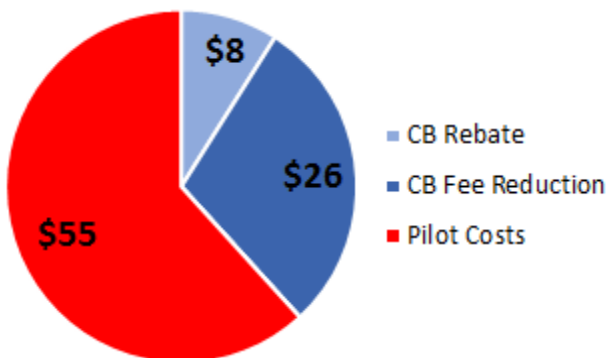
^c College Board’s criteria for economically disadvantaged: (1) a student who is enrolled or eligible to participate in the Federal Free and Reduced-Price Lunch Program or (2) if a school or district participates in the Community Eligibility Provision, a student has to have a family income at or below 185 percent of the poverty level OR qualify as an “identified student.” More information is available at <http://professionals.collegeboard.com/testing/waivers/guidelines/ap>.

Federal Subsidies – The U.S. Department of Education awards state agencies funds to pay AP exam fees for economically disadvantaged students who enroll in AP courses and take the exam, through the federal Advanced Placement Test Fee program (APTF).²⁰ For non-pilot schools APTF provided subsidies of \$37 per exam in SY 2013-14²¹ and a subsidy of \$41 per exam in SY 2014-15 for low income students in Tennessee.²² It is important to note that schools participating in the AP Math pilot and the Knox County pilot are not eligible to use funds from the federal APTF program.²³

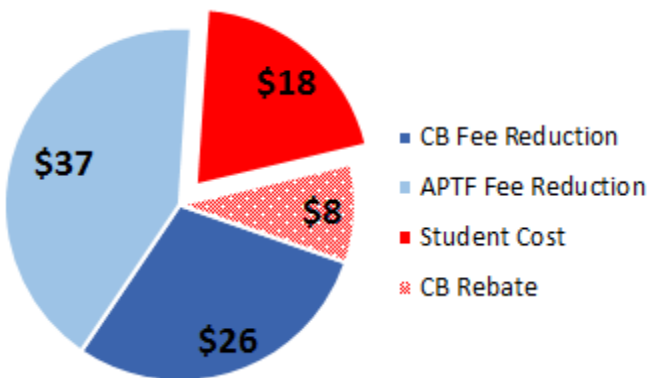
Exhibit 4 illustrates the costs and reductions for economically disadvantaged students in Tennessee at pilot and non-pilot schools. The Exam Fee pilot paid exam costs for non-economically disadvantaged students at pilot schools, while students incurred exam fees at non-pilot schools. The fees charged by the College Board for non-economically disadvantaged students were not substantially different at pilot

Exhibit 4: AP Exam Costs and Reductions, Economically Disadvantaged (ED) Students^{(a), (b)}

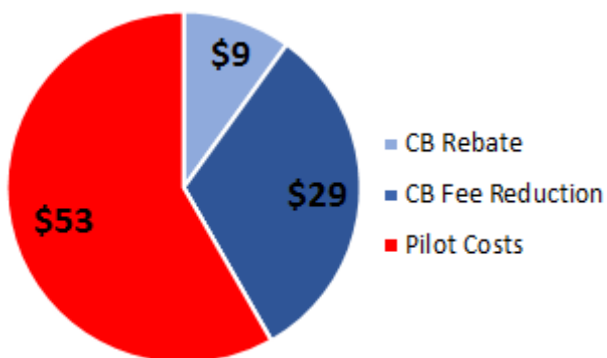
Pilot ED Student SY 2013-14



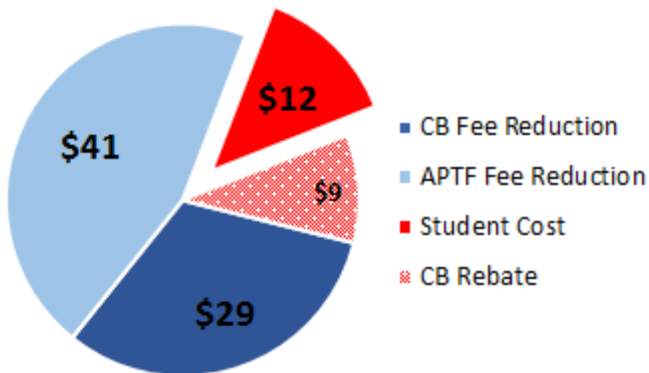
Non-Pilot ED Student SY 2013-14



Pilot ED Student SY 2014-15



Non-Pilot ED Student SY 2014-15



Notes:

(a) The TN Pilot Costs represents the total cost reimbursed for each Economically Disadvantaged student who took an AP exam using pilot funds. The Student Cost figure represents the cost billed to the economically disadvantaged student for exam fees.

(b) The CB Rebate is provided by College Board to schools for administration. A school may forgo the CB Rebate in the case of economically disadvantaged students, thus reducing students' exam costs. All pilot schools, regardless of the economic status of test takers, had to waive the College Board rebate.

Source: Tennessee Department of Education; College Board Bulletin (2013-14) and (2014-15).

and non-pilot schools, except that pilot schools were required to waive the administrative rebate (meaning that the state paid the non-economically disadvantaged exam fee, less the administrative rebate available for schools).²⁴

Exhibit 4 shows that an economically disadvantaged student at a non-pilot school paid \$12 in SY 2014-15 after all eligible reductions,^D while an economically disadvantaged student at a pilot school would pay nothing. Instead, the state’s pilot funding covered both the \$12 remaining student fee and the \$41 federal APTF subsidy no longer available to schools participating in the pilot program.

Results: AP Math Exam Fee Pilot

The AP Math Exam Fee pilot paid the examination fees for students who enrolled in the coursework and took one or more AP Math exams, including Calculus AB, Calculus BC, and Statistics at pilot schools.

Overall, AP course enrollment at pilot schools was lower during the pilot than in the two years preceding it. The pilot program schools were not notified of their selection, however, until after the SY 2013-14 had begun, so the pilot program likely did not have an effect on course enrollment in year one.

Exhibit 5 illustrates math pilot schools’ enrollment, exam participation, and exam passage in the aggregate. Enrollment fluctuated over the four years illustrated and was lower during pilot years than in the two years preceding it. Despite a decline in enrollment, the number of exams taken increased in the pilot years. Exam participation rate was higher during pilot years than in the years preceding. Pass rates declined during pilot years, though the number of exams passed was slightly higher.

Exhibit 5: AP Math Pilot – Course Enrollment, Exam Participation, and Success

School Year	Student Enrollment ^(a)	Number of Exams Taken ^(b)	Exam Participation Rate ^(c)	Number of Exams Passed ^(b)	Pass Rate
2011-12	420	103	25%	48	47%
2012-13	473	114	24%	42	37%
2013-14	395	231	58%	51	22%
2014-15	409	190	46%	50	26%

Note: (a) Student enrollment is a duplicated count – meaning a student could be enrolled in both AP Calculus AB and AP Statistics and would be counted twice in this figure.

(b) Number of exams taken is a duplicated count – meaning one student could have taken both an AP Calculus AB and an AP Statistics exam and would be counted twice in this figure. Number of exams passed may also be a duplicated count.

(c) Exam participation rate and pass rate were calculated by OREA.

Source: Tennessee Department of Education.

^D This assumes that the student’s school chose to forgo the administrative rebate provided by the College Board.

OREA also reviewed enrollment, exam participation, and success by AP math exam. Enrollment declined in Calculus BC courses during the pilot. AP Statistics experienced an initial drop in enrollment in year one of the pilot and then an increase in enrollment in SY 2014-15 that exceeded the three previous years.

The exam participation rate increased across both pilot years and across all exams, but these increases should be considered in the context of fluctuating enrollments in AP math coursework. For example, there is a notable increase in the exam participation rate for Statistics between SY 2012-13 and SY 2013-14; however, there was also a considerable drop in student enrollment.

Pass rate changes were variable across AP exams and in the years illustrated. The exam pass rate is related to the number of exams taken, and the exam pass rate can decline even as the number of exams passed increases. This phenomenon occurs in cases where the increase in the number of exams taken is sufficiently greater than the increase in the number of exams passed. For example, Calculus AB experienced a larger number of AP exams passed in pilot years, but the pass rate in

Exhibit 6: AP Math Pilot – Course Enrollment, Exam Participation, and Success by Math Subject

Subject	School Year	Student Enrollment	Number of Exams Taken	Exam Participation Rate	Number of Exams Passed	Pass Rate
Calculus AB	2011-12	222	49	22%	21	43%
	2012-13	299	56	19%	15	27%
	2013-14	285	162	57%	26	16%
	2014-15	249	107	43%	31	29%
Calculus BC	2011-12	91	26	29%	17	65%
	2012-13	60	39	65%	18	46%
	2013-14 ^(a)	21	29	138%	15	52%
	2014-15 ^(a)	15	21	140%	--	--
Statistics	2011-12	107	28	26%	10	36%
	2012-13	114	19	17%	--	--
	2013-14	67	40	60%	10	25%
	2014-15	131	62	47%	10	16%

Note: (a) Students enrolled in the Calculus AB/BC course (22 students in SY 2013-14 and 14 students in SY 2014-15) are not included in this table because the course enrollment cannot necessarily be attributed to any specific exam. It is important to note, however, that they may be included in data for exams taken and passed. This may explain the number of exams taken exceeding student enrollment in SY 2013-14 and SY 2014-15.

(b) – Data is suppressed to protect student privacy.

Source: Tennessee Department of Education.

SY 2013-14 was lower than the two years preceding the pilot. Similarly, AP Statistics experienced a decline in pass rate over pilot years, despite having approximately the same number of exams passed.

AP Math Exam Fee Pilot: Economically Disadvantaged Students

In selecting pilot schools, TDOE considered indicators of economic disadvantage, including the percentage of students eligible for free and reduced priced lunch (FRPL). Due to the timing of this report, the exam participation and success data for students eligible for FRPL is available only for year one of the pilot.

Exhibit 7 illustrates economically disadvantaged (ED) student enrollment, exam participation, and exams passed, in the aggregate, across math pilot schools. ED enrollment in AP coursework was similar across pilot year one and the preceding year. ED participation in AP exams grew from 22 percent to 77 percent. The pass rate for ED students declined over SY 2012-13 and SY 2013-14, but the number of students passing stayed about the same.

Results: AP Knox County Pilot

The Knox County portion of the Exam Fee pilot paid the examination fees for students who enrolled in any AP course and took the respective AP exam. This comprehensive exam fee pilot took place at the five high schools listed in Exhibit 3.

Overall, the number of students enrolling in AP courses at Knox County pilot schools decreased in the pilot years. Despite the decrease in enrollment, the number of exams taken increased in the pilot years. The exam participation rate rose in the pilot years and was 70 percent in SY 2014-15. Note that these numbers are an aggregate across all AP exams offered at the Knox County schools.

The pass rate declined in the pilot years, although the number of exams passed during the pilot exceeded the number of exams passed prior to the pilot in SY 2012-13.

Exhibit 7: Economically Disadvantaged (ED) Student Enrollment, Exam Participation, and Exams Passed in AP Exam Fee Pilot Schools

	2012-13	2013-14
Total Enroll	473	395
ED Enroll^(a)	128	117
% ED Enroll	27%	30%
Total Exams Taken	114	231
ED Exams Taken^(b)	28	90
ED Participation Rate	22%	77%
Total Exams Passed	42	51
ED Exams Passed	--	10
ED Pass Rate	--	11%

Notes: (a) Student enrollment is a duplicated count – meaning a student could be enrolled in both AP Calculus AB and AP Statistics and would be counted twice in this figure. (b) Number of exams taken is a duplicated count – meaning one student could have taken both an AP Calculus AB and an AP Statistics exam and would be counted twice in this figure. (c) % ED Enrolled, ED Participation Rate, and ED Pass Rate are OREA calculations. (d) – Data is suppressed to protect student privacy
Source: Tennessee Department of Education.

Exhibit 8: AP Knox Pilot – Course Enrollment, Exam Participation, and Success

School Year	Student Enrollment ^(a)	Number of Exams Taken ^(b)	Exam Participation Rate	Number of Exams Passed	Pass Rate
2011-12	1,605	652	41%	300	46%
2012-13	1,538	540	35%	230	43%
2013-14	1,531	946	62%	294	31%
2014-15	1,454	1,021	70%	317	31%

Note: (a) Student enrollment is a duplicated count – meaning a student could be enrolled in both AP Calculus AB and AP U.S. History and would be counted twice in this figure.

(b) Number of exams taken is a duplicated count – meaning one student could have taken both an AP Calculus AB and an AP Statistics exam and would be counted twice in this figure.

(c) Exam participation rate and pass rate were calculated by OREA.

Source: Tennessee Department of Education.

Course enrollment, exam participation, and pass rate vary among AP exams. Exhibits 9 and 10 illustrate this information for AP Math, AP English, and select AP history exams.

Enrollment declined in Calculus AB and Statistics at Knox County pilot schools during SY 2013-14 and SY 2014-15. The number of exams taken in Statistics and Calculus BC was higher during pilot years, despite a decline in course enrollment. Exam participation was higher among these exams for pilot years.

Pass rate declined for both Calculus BC and Statistics.

Exhibit 9: AP Knox Pilot – Course Enrollment, Exam Participation, and Success by AP Exam (Math)

Subject	School Year	Student Enrollment	Number of Exams Taken	Exam Participation Rate	Number of Exams Passed	Pass Rate
Calculus AB	2011-12	114	14	12%	--	--
	2012-13	129	21	16%	--	--
	2013-14	106	12	11%	--	--
	2014-15	82	0	0%	--	--
Calculus BC	2011-12	74	37	50%	14	38%
	2012-13	80	41	51%	14	34%
	2013-14	81	66	81%	18	27%
	2014-15	61	51	84%	12	24%
Statistics	2011-12	126	33	26%	20	61%
	2012-13	121	21	17%	11	52%
	2013-14	100	43	43%	--	--
	2014-15	72	36	50%	--	--

Note: — Data is suppressed to protect student privacy.

Source: Tennessee Department of Education.

Exhibit 10 displays course enrollment, exam participation, and success for Knox County pilot schools in AP English Language and Composition, AP Literature and Composition, AP U.S. Government and Politics, and AP U.S. History. Outcomes vary across these AP exams. For example, AP English Language and Composition saw an increase in course enrollment and an increase in exam participation. AP U.S. Government and Politics experienced more volatility: an increase in course enrollment over SY 2012-13, though an overall decline from SY 2011-12, an increase in exam participation, and a variable pass rate, though a general decline from SY 2012-13.

Exhibit 10: AP Knox Pilot – Course Enrollment, Exam Participation, and Success by AP Exam (English and History)

	School Year	Student Enrollment	Number of Exams Taken	Exam Participation Rate	Number of Exams Passed	Pass Rate
English Language and Composition	2011-12	245	139	57%	85	61%
	2012-13	178	87	49%	39	45%
	2013-14	267	211	79%	85	40%
	2014-15	271	220	81%	83	38%
Literature and Composition	2011-12	163	94	58%	40	43%
	2012-13	225	79	35%	44	56%
	2013-14	112	89	79%	41	46%
	2014-15	150	123	82%	55	45%
US Government and Politics	2011-12	320	139	43%	45	32%
	2012-13	127	68	54%	29	43%
	2013-14	148	118	80%	45	38%
	2014-15	204	161	79%	23	14%
US History	2011-12	203	81	40%	25	31%
	2012-13	239	96	40%	40	42%
	2013-14	267	191	72%	30	16%
	2014-15	260	202	78%	58	29%

Source: Tennessee Department of Education.

AP Knox County Pilot: Economically Disadvantaged Students

Due to the timing of this report, the exam participation and success data for students eligible for FRPL is available only for year one of the pilot.

Exhibit 11 displays ED student course enrollment across Knox County pilot schools for SY 2012-13 and SY 2013-14; there was no substantive change in the percent of ED students enrolled in AP courses at Knox school sites. The number of ED exams taken and ED exam participation rate went up considerably in pilot year one. Though the ED pass rate declined, the number of ED exams passed went up in pilot year one.

Overview: Industry Certification Exam Fee Pilot

Industry certifications are recognized by industry and/or employers and illustrate a student’s knowledge and technical skills. The Industry

Certification Exam Fee pilot pays exam fees for students who enroll in certain CTE courses and take the corresponding exams, at select pilot schools. The eligible industry certification exams include First Responder, Certified Nursing Assistant, Certified EKG Technician, Certified Pharmacy Technician, CompTIA A-Plus, AWS (American Welding Society), NIMS, and ServSafe. TDOE added Siemen’s certifications (Levels I, II, and III) to the list of eligible certifications for the 2014-15 school year. The two-year grant provides up to \$3,000 per year for each selected school site.

TDOE selected the industry certification exams eligible for the pilot program using the strategic economic priorities for the State of Tennessee.²⁵ Pilot schools were selected through a competitive grant application process. Applicants were asked to outline their promotion of industry certification exam participation among students, their approach to implementation of the pilot, and alignment with industry and postsecondary institutions in their area.²⁶ Of the 27 schools that applied for the grant, 15 schools were selected to participate.²⁷ Nine of the 15 schools submitted both MOUs and reimbursement requests for at least one year of the study. Exhibit 12 shows the schools that were eligible to participate and their participation status in the Industry Certification Exam Fee Pilot.

Exhibit 11: Economically Disadvantaged (ED) Student Enrollment, Exam Participation, and Exams Passed in AP Knox County Pilot

	2012-13	2013-14
Total Enroll	1,538	1,531
ED Enroll	310	320
% ED Enroll	20%	21%
Total Exams Taken	540	946
ED Exams Taken	89	196
ED Participation Rate	29%	61%
Total Exams Passed	230	294
ED Exams Passed	33	49
ED Pass Rate	37%	25%

Notes: (a) Student enrollment is a duplicated count – meaning a student could be enrolled in both AP Calculus AB and U.S. History and would be counted twice in this figure. (b) Number of exams taken is a duplicated count – meaning one student could have taken both an AP Calculus AB and the U.S. History exam and would be counted twice in this figure. (c) % ED Enrolled, ED Participation Rate, and ED Pass Rate are OREA calculations. Source: Tennessee Department of Education.

Exhibit 12: Industry Certification Exam Fee Pilot Schools ^(a)

LEA	School	MOUs	Reimbursement Y1 ^(b)	Reimbursement Y2
Anderson	Anderson County Career and Technical Center (ACCTC)	Yes	Yes	Yes
Anderson	Clinton High School	Yes	No	No
Bradley	Bradley Central	Yes	Yes	No
Knox ^(c)	Carter High School	No	No	No
Knox	Gibbs High School	No	No	No
Knox	Halls High School	No	No	No
Knox	Karns High School	No	No	No
Knox	South Doyle High School	No	No	No
Loudon	Loudon County High School	Yes	Yes	Yes
Maury	Columbia Central	Yes	Yes	Yes
Maury	Spring Hill	Yes	Yes	Yes
Metro Nashville Public Schools	Hunters Lane	Yes	Yes	Yes
Metro Nashville Public Schools	Overton	Yes	No	Yes
State	York Institute	Yes	Yes	No
Wilson	Lebanon High School	Yes	Yes	Yes

Note: (a) If a school submitted both an MOU and reimbursements, it was considered participating in the pilot.

(b) Note that there are schools that did not participate in Y1 that did participate in Y2 and vice versa.

(c) The five Knox County schools selected did not submit MOUs and did not seek reimbursement for any SIC exams covered under the grant in both years of the pilot.

Source: Tennessee Department of Education.

Exam Fees and Reductions

Costs for industry certification exams vary based on industry area and type of exam. Some school districts or local organizations provide industry certification exam fee reductions to cover a portion or all of remaining student costs. Based on grant applications for the Industry Certification Exam Fee pilot, some of the selected schools had pre-existing partnerships that discounted or provided funds to cover exam fees for select students.²⁸ Exam costs that were reimbursed by TDOE varied from \$10 to \$210. (See Exhibit 13.)

Exhibit 13: Exam Fees in the Industry Certification Exam Fee Pilot

Industry Certification	Exam Fee Reimbursement Provided by TDOE Y1	Exam Fee Reimbursement Provided by TDOE Y2
First Responder (Emergency Medical)	\$110 (registration plus exam fee)	\$110 (registration plus exam fee)
Certified Nursing Assistant (C.N.A)	\$90	\$90
CompTIA (A+)	\$133	\$210
AWS (American Welding Society)	\$15	Not Available
ServSafe (National Restaurant Association)	\$15	\$10-36 ^(c)
Certified EKG Technician (Electrocardiogram Technician)	Not Available ^(a)	Not Available
Certified Pharmacy Technician	Not Available	\$149
NIMS (National Institute for Metal Working Skills)	Not Available	Not Available
Siemens Mechatronics Systems Certification (I, II, and III)^(b)	Not Applicable	Not Available

Notes: (a) Not available indicates that this exam was not taken at any Industry Certification Exam Fee Pilot site for that year; therefore, TDOE did not have to determine exam cost or reimburse the exam fee.

(b) The Siemens Mechatronics Systems Certification (Levels I, II, and III) was added for the 2014-15 school year.

(c) Note the price change year over year – this could be due to pre-existing agreements with the certification provider and the local education agency or it could be the result of the varying levels of the examination (i.e., ServSafe offers three certifications: ServSafe Food Safety Manager, ServSafe Food Handler, and ServSafe Alcohol).

Source: Tennessee Department of Education.

Results: Industry Certification Exam Fee Pilot

The Industry Certification Exam Fee pilot aimed to increase the number of eligible students enrolling in CTE courses, taking industry certifications, and passing industry certifications.

Industry Certification Exam Fee pilot schools had already enrolled students in CTE courses before schools confirmed their participation, so the pilot program likely had no effect on course enrollment in the first year. In addition, it may not be expected that course enrollment in SIC aligned courses would increase over this time period, because certain SICs require students to take a series or sequence of classes. (See [Exhibit 14.](#)) For example, the Certified Nursing Assistant (CNA) is the industry certification for the Therapeutic Nursing Services program of study, which requires a series four courses.²⁹

Since multiple courses are needed to culminate in an SIC-aligned course, it is likely that the Industry Certification Exam Fee pilot was unable to provide incentives for any increased enrollment that would have been captured in SIC-aligned course enrollment data.^E

Exhibit 14: Student Industry Certifications and Program of Study^(a)

Student Industry Certification	SIC Aligned Course	Program of Study	Number of Courses^(b)
First Responder (Emergency Medical)	Emergency Medical Services (5995)	Emergency Services	4
Certified Nursing Assistant (C.N.A)	Nursing Education (6000)	Therapeutic Nursing Services	4
CompTIA (A+)	Information Technology Foundations (6095)	All Information Technology Programs	1
AWS (American Welding Society)	Welding II (6033)	Welding	3
ServSafe (National Restaurant Association)	Culinary I (5979)	Culinary Arts	1
Certified EKG Technician (Electrocardiogram Technician)	Cardiovascular Services (6131)	Diagnostic Services	4
Certified Pharmacy Technician	Pharmacological Science (6133)	Therapeutic Clinical Services	3
NIMS (National Institute for Metal Working Skills)	Principles of Manufacturing (5922)	Machining Technology	1
Siemens Mechatronics Systems Certification (I)	Mechatronics II (6157)	Mechatronics	4

Notes: (a) TDOE has undergone revisions to its CTE Programs of Study. Each of the Programs of Study and SICs in this exhibit have been affected by the new course implementation for either the 2014-15 or 2015-16 school years.

(b) The levels to certification represents the number of courses that lead up to and include the SIC aligned course.

Source: Tennessee Department of Education.

TDOE provided test taking and passing data for participating pilot schools and participating schools provided course enrollment figures. As noted in [Exhibit 15](#), some schools participated only in one year of the pilot or took advantage of certain certifications in one year, but not another. In other instances, the pilot was the first year that a school participated in the industry certification, meaning there was no comparable baseline data.^F The number of students participating in industry certification exams across pilot sites was small and will not be displayed in this report for student privacy purposes.

^E Participation in an industry certification does not require completion of certain coursework. According to TDOE, there is no mechanism in place to prevent a student from signing up for an industry certification before completing all related courses (shown in Exhibit 14). In addition, a student may complete all courses, but may not be able to sit for the exam due to industry certification rules (e.g., must be at least 18 years old to take the First Responder Certification exam).

^F The MOU signed by pilot schools required that at least one section of one or more of the eligible courses be offered at the school site. In addition, grant applicants were not notified of their selection until after the start of the first year of the pilot in SY 2013-14. These reasons may explain the addition of new programs at the onset of the pilot.

In sum, nine schools participated in six industry certifications in the pilot years. Some schools, such as ACCTC in Anderson County, participated in three industry certifications, while others, such as Hunters Lane in Metro Nashville Public Schools, participated in only one industry certification.

Exhibit 15 illustrates that nine cases could be reviewed for year over year changes. In general, enrollment in CTE coursework (culminating in an SIC) was low. ServSafe certification courses had the highest course enrollment figures in both pilot years. Exam participation and pass rates across schools and programs, with more than one year of data, were mixed.

Exhibit 15: School Participation by Industry Certification

Industry Certification	LEA	HS	Baseline Data	Participated Pilot Y1	Participated Pilot Y2
First Responder	Anderson	ACCTC	No	Yes	Yes
Certified Nursing Assistant	Anderson	ACCTC	No	Yes	Yes
	Maury	Columbia Central	Yes	Yes	Yes
	Maury	Spring Hill	No	Yes	Yes
	Wilson	Lebanon	Yes	Yes	Yes
	State	York Institute	Yes	Yes	No
A+ and Net+	Maury	Spring Hill	No	Yes	No
	Metro Nashville Public Schools	Overton HS	No	No	Yes
AWS	Bradley	Bradley Central	Yes	Yes	No
ServSafe	Loudon	Loudon HS	No	Yes	Yes
	Metro Nashville Public Schools	Hunters Lane	No	Yes	Yes
	Anderson	ACCTC	No	No	Yes
Certified Pharmacy Technician	Metro Nashville Public Schools	Overton HS	No	No	Yes

Endnotes

- ¹ Mary Batiwalla and Brad Walker, *Advanced Placement Strategy: A Framework for Identifying School-Level Barriers to AP Success*, Tennessee Department of Education, May 2014, pp. 3, 6.
- ² Tennessee Department of Education, Division of Career and Technical Education, *2014 Year in Review and Upcoming Initiatives for 2015*, p. 4.
- ³ Mary Batiwalla and Brad Walker, *Advanced Placement Strategy: A Framework for Identifying School-Level Barriers to AP Success*, Tennessee Department of Education, May 2014, p. 5.
- ⁴ U.S. Department of Education, *Programs: Inside No Child Left Behind – Section 1706 Supplement, Not Supplant*, <http://www2.ed.gov/> (accessed Oct. 16, 2015).
- ⁵ Texas Education Agency, *Texas Advanced Placement and International Baccalaureate Incentive Program*, <http://tea.texas.gov/> (accessed Oct. 21, 2015).
- ⁶ Public Chapter 351 (2013).
- ⁷ Tennessee Department of Education, Division of Career and Technical Education, *2013-15 AP Exam Fee Pilot*; Tennessee Department of Education, e-mail attachment, Oct. 7, 2014.
- ⁸ Melissa Canney, Director of Divisional Operations; Casey Haugner, Executive Director, Office of Student Readiness and Early Postsecondary; Danielle Mezera, Assistant Commissioner of Career and Technical Education, Division of Career and Technical Education; and Nate Schwartz, Data and Research, Tennessee Department of Education, interview, Sept. 9, 2015.
- ⁹ Tennessee Department of Education, Division of Career and Technical Education, *2013-15 AP Exam Fee Pilot*; Melissa Canney, Director of Divisional Operations, Tennessee Department of Education, e-mail attachment, Sept. 10, 2015.
- ¹⁰ Tennessee Department of Education, Division of Career and Technical Education, *2013-15 AP Exam Fee Pilot*.
- ¹¹ Tennessee Department of Education, e-mail attachment, Oct. 7, 2014.
- ¹² Canney, Haugner, Mezera, and Schwartz, Tennessee Department of Education, interview, Sept. 9, 2015.
- ¹³ Tennessee Department of Education, *Memorandum of Understanding and Reimbursement Requests for AP and CTE Exam Fee pilots*.
- ¹⁴ U.S. Department of Education, *Programs: Inside No Child Left Behind – Section 1706 Supplement, Not Supplant*, <http://www2.ed.gov/> (accessed Oct. 16, 2015).
- ¹⁵ Casey Haugner, Executive Director, Office of Student Readiness and Early Postsecondary, Tennessee Department of Education, e-mail attachment, Sept. 9, 2015.
- ¹⁶ Tennessee Department of Education, *2014 Federal AP Exam Grant Procedures for Economically Disadvantaged Students*.
- ¹⁷ College Board, *2013-14 Bulletin for AP Students and Parents*, p. 2.
- ¹⁸ College Board, *2014-15 Bulletin for AP Students and Parents*, p. 2, <https://collegeboard.org/> (accessed Oct. 16, 2015).
- ¹⁹ Melissa Canney, Director of Divisional Operations, Division of Career and Technical Education, Tennessee Department of Education, May 7, 2015.
- ²⁰ U.S. Department of Education, *Programs: Inside No Child Left Behind – Section 1704 Advanced Placement Test Fee Program*, <http://www2.ed.gov/> (accessed Oct. 16, 2015).
- ²¹ Tennessee Department of Education, *2014 Federal AP Exam Grant Procedures for Economically Disadvantaged Students*.
- ²² Melissa Canney, Director of Divisional Operations, Division of Career and Technical Education, Tennessee Department of Education, May 7, 2015.

- ²³ Melissa Canney, Director of Divisional Operations, Division of Career and Technical Education, Tennessee Department of Education, May 7, 2015; U.S. Department of Education, [Programs: Inside No Child Left Behind – Section 1706 Supplement, Not Supplant](http://www2.ed.gov/), <http://www2.ed.gov/> (accessed Oct. 16, 2015).
- ²⁴ Canney, Haugner, Mezera, and Schwartz, Tennessee Department of Education, interview, Sept. 9, 2015.
- ²⁵ Tennessee Department of Education, e-mail message, Oct. 15, 2014.
- ²⁶ Tennessee Department of Education, 2013-15 Student Industry Certifications (SIC) Grant – Scoring Rubric.
- ²⁷ Melissa Canney, Director of Divisional Operations, Division of Career and Technical Education, Tennessee Department of Education, e-mail message, Aug. 27, 2014.
- ²⁸ Tennessee Department of Education, Division of Career and Technical Education, 2013-15 Student Industry Certifications Grant.
- ²⁹ TDOE, Division of College, Career and Technical Education, Office of Career and Technical Education, [Student Industry Certification](http://tn.gov/), Sept. 2015, <http://tn.gov/> (accessed Sept 23, 2015).



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