THE TEXAS RURAL TECHNOLOGY (R-TECH) PILOT PROGRAM

CYCLE 1 FINAL EVALUATION REPORT
EXECUTIVE SUMMARY

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Acknowledgments

The evaluation of the Texas Rural Technology (R-Tech) Pilot sought to understand how districts implemented R-Tech grants, the effects of implementation on student and teacher outcomes, as well as the cost effectiveness and sustainability of R-Tech. The Texas legislature (80th Texas Legislature, Regular Session, 2007) authorized the creation of R-Tech in order to support the state's small, rural districts in implementing technology-based supplemental education programs. R-Tech grants were intended to support supplemental educational programs, including online courses, offered outside of students' regularly scheduled classes (e.g., before or after school). Districts that received grants were required to provide students in Grades 6 through 12 with access to technology-based instructional resources for a minimum of 10 hours a week; however, the grant did not establish minimum requirements for students' use of R-Tech resources.

In establishing R-Tech, the legislature required that the program be evaluated to assess its effects on student and teacher outcomes, as well as the program's cost effectiveness. In addressing these goals, the evaluation considered the following research questions:

1. How is R-Tech implemented across grantee districts and schools?
2. What is the level of student participation in R-Tech?
3. What is the effect of R-Tech on teachers?
4. What is the effect of R-Tech on student outcomes?
5. How cost effective is R-Tech?

The evaluation is made up of two interim reports (December 2008 and February 2010) and a final report (fall 2010). The findings presented here are drawn from the evaluation's final report (fall 2010). The report considers outcomes for 63 districts that received Cycle 1 grant awards[1] across the 2-year grant period (May 2008 through May 2010).

KEY FINDINGS BY RESEARCH QUESTION

The sections that follow present key findings relative to each of the evaluation's research questions. Results are drawn from data collected across the full 2-year implementation period for Cycle 1 districts.

Research Question 1: How Is R-Tech Implemented Across Grantee Districts and Schools?

The following sections present information about the types of programs districts implemented using R-Tech funds and finds that some districts encountered challenges in implementing supplemental programs that caused them to revise their plans. District representatives explained that many students resisted participating in programs offered before or after school. Further, some students were not able to participate in R-Tech services because of conflicts with extra-curricular activities and bus schedules that limited their ability to arrive early or stay after school.

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[1]To date, there have been three cycles of R-Tech grant awards.

- Most districts (87%)[2] implemented R-Tech as a self-paced program focused on tutoring, remediation, or credit recovery. Self-paced programs provided access to online lessons that students worked through at their own pace. Many self-paced programs included diagnostic assessments of students' individual learning needs and tailored instruction based on assessment outcomes. Some programs enabled students to complete entire courses online, allowing students to make up credit for incomplete or failed courses.

- About 30% of Cycle 1 districts offered dual credit coursework using R-Tech funding. Dual credit courses enable students in Grades 11 and 12 to take courses that fulfill high school graduation requirements and earn college credit. R-Tech districts implementing dual credit courses partnered with community colleges and universities to provide instruction, and some programs were facilitated by regional Education Service Centers (ESCs).

- Although R-Tech was intended to support districts' efforts in implementing supplemental educational programs offered outside the regularly scheduled school day, a substantial proportion of Cycle 1 districts (40%) implemented R-Tech as part of classroom instruction (i.e., non-supplemental programs). Many districts used R-Tech funding to update their computer labs and teachers scheduled class time in the lab for students to access resources. Two districts implemented R-Tech as a technology immersion program and used funding to support the purchase of laptop computers for all teachers and students in Grades 6 through 12. Students and teachers used laptops throughout the school day and schools may have permitted students to take laptops home.

Research Question 2: What Is the Level of Student Participation in R-Tech?

The sections that follow summarize student participation in R-Tech across the 2-year grant period and discuss how most students were identified for R-Tech services.

- In the second year of implementation, a larger proportion of districts and campuses reported greater numbers of students participating in R-Tech. About 1,400 students participated in R-Tech in summer 2008, about 8,800 participated in fall 2008, and nearly 12,800 participated in spring 2009; while approximately 3,300 students participated in summer 2009, about 13,000 participated in fall 2009, and nearly 14,000 participated in spring 2010.

- The average amount of time each student accessed R-Tech services during the grant's second year decreased from levels reported in year 1, with approximately half of all students accessing R-Tech services less than 2 hours a week. Districts varied in how they implemented R-Tech and how students were identified to receive services, but most campuses identified students because of weak academic outcomes, including poor Texas Assessment of Knowledge and Skills (TAKS) scores, failing grades, and teacher referrals.

- Student resistance, transportation challenges, and scheduling conflicts created the greatest barriers to participation in supplemental R-Tech programs. Districts addressed participation barriers by expanding available times and locations for R-Tech services, requiring participation of some students, and increasingly integrating R-Tech services into regular classroom instruction (i.e. non-supplemental implementation).

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[2]The percentage of districts included in each program type will not total to 100 because districts were able to implement more than one type of program. Districts were able to implement separate programs in their middle and high schools. For example, a district may have implemented dual credit instruction in its high school, but offered a self-paced tutoring program in its middle school.

Research Question 3: What Is the Effect of R-Tech on Teachers?

In grant applications, all Cycle 1 districts indicated that R-Tech resources would be used to expand teachers' access to technology-based professional development activities; however, results from teacher surveys and focus group discussions suggest that many teachers were unaware of the R-Tech resources available to them and that few teachers participated in R-Tech professional development opportunities across implementation years. However, teachers working in districts in which R-Tech was incorporated as part of regular instruction reported using resources to a greater extent than teachers in districts implementing supplementary programs. Teachers in non-supplementary districts reported using R-Tech resources to differentiate instruction, provide remediation and support for struggling learners, and to reinforce concepts taught in class.

- According to results from surveys and focus group discussions, teachers on R-Tech campuses received limited training. Specifically, less than 5% of teachers responding to the fall 2008 survey (54 individuals), 38% of spring 2009 survey respondents (215 individuals), and 29% of spring 2010 respondents (392 individuals) knew they had participated in R-Tech professional development. Most teachers receiving R-Tech training attended sessions provided by vendors onsite and in-person which addressed preparation for standardized tests, integrating instructional technology into classroom instruction, and working with at-risk students.

- Beyond professional development opportunities, teachers reported that they benefitted from the increased access to technology provided by R-Tech, which allowed them to enhance their lesson plans, provide visual and auditory examples of lesson content, differentiate instruction, and provide remediation to struggling students. Additionally, teachers reported increased student engagement when students used instructional technology resources.

Research Question 4: What Is the Effect of R-Tech on Student Outcomes?

The sections that follow present results from analyses of R-Tech on students' TAKS and attendance outcomes. Given differences in the availability of data, the evaluation's analyses of attendance outcomes are limited to R-Tech's first implementation year, while analyses of TAKS outcomes consider the program's full 2-year implementation period.

- Comparisons of changes in the percentages of R-Tech participants and non-participants[3] who met TAKS passing standards from 2008 (the year prior to R-Tech implementation) to 2010 (the grant's final year) indicate that R-Tech participants had larger gains in TAKS passing rates than non-participants in mathematics and science. These gains were not found in reading/English language arts (ELA) or social studies.

- Students who spent more time participating in R-Tech services did not experience improved testing or attendance outcomes relative to students who spent less time in R-Tech. However, researchers were not able to control for unobserved student differences that may have affected outcomes. For example, students who spent more time in R-Tech may have been at greater academic risk, requiring more remediation time than students who spent less time using resources.

- Students participating in self-paced programs experienced reduced TAKS scores in reading/ELA and mathematics relative to R-Tech students who participated in other program types; however, self-paced programs had no demonstrated relationship to TAKS outcomes in science and social studies. R-Tech dual credit and distance learning programs did not demonstrate a statistically significant relationship

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[3]Non-participants are students who attended R-Tech campuses but did not receive R-Tech services.

with students' TAKS reading/ELA and mathematics scores. Again, results should be interpreted with caution because it was not possible to control for the student characteristics that may have caused students to be identified for self-paced programs. If students identified for self-paced programs had more serious academic deficiencies than students identified for other types of R-Tech programs, then results may have been produced by unobserved student characteristics rather than program participation.

- Students who received R-Tech services as non-supplemental instruction offered during the regular school day experienced improved TAKS testing outcomes in reading/ELA and mathematics relative to students who participated in supplemental R-Tech programs. Students who participated in R-Tech during the regular school day also experienced improved attendance outcomes. These findings suggest that R-Tech services implemented as part of regular instruction may improve students' TAKS and attendance outcomes; however, the characteristics of students identified for supplemental services may have affected outcomes. That is, students identified for supplemental services may have struggled academically, while students participated in non-supplemental services irrespective of academic need, which may indicate that testing outcomes resulted from students' academic characteristics rather than program participation.

Research Question 5: How Cost Effective Is R-Tech?

Similar to findings for R-Tech's effects on student achievement, readers are asked to use caution when interpreting the results of the evaluation's cost effectiveness analysis. At the time of the report's writing, only 31 Cycle 1 districts had accessed their full grant awards, and the remaining 32 districts had used only 71% of their grant funding.

- In spite of substantial start up costs in terms of investments in technology resources, districts that implemented R-Tech for larger numbers of students experienced the lowest per-student program costs. Across Cycle 1 districts, the average per-student cost of providing R-Tech services in terms of state-provided grant funding across the 2-year grant period was $294. Districts that implemented programs serving 1,000 or more students experienced average per-student costs of $141, while districts that served fewer than 100 students had average per-student costs of $774.

- Districts that implemented R-Tech as part of regular classroom instruction (i.e., non-supplemental programs) experienced substantially lower per-student costs than supplemental programs ($212 vs. $353, on average). The difference in costs results from differences in the numbers of students served. Districts implementing supplemental programs served an average of 346 students across the 2-year grant period, while districts implementing non-supplemental programs served an average of 692 students.

- More than half (58%) of principals responding to the spring 2010 survey reported that insufficient financial resources created a *moderate* or *substantial* barrier to continuing R-Tech after grant funds expired in May 2010. Most surveyed principals (60%) indicated that they would seek additional funding to continue the program, and 31% indicated they would continue services by incorporating R-Tech into regular classroom instruction.

CONCLUSION

The overarching finding of the evaluation is that rural districts struggled to implement supplementary R-Tech programs in which instruction was offered outside of the regular school day. Many rural students travel great distances to school and depend on buses for transportation. In many districts, bus schedules did not permit students to arrive early or remain after school in order to receive supplementary instruction. Conflicts with extracurricular activities, student work schedules, and family responsibilities also limited some students' ability to participate in R-Tech programs, and some students simply refused to participate in instruction offered outside of the school day.

Findings from the evaluation's second interim report indicated that many districts revised their implementation plans in order to overcome these challenges. As a means to ensure greater student participation in R-Tech, many districts included services as part of the school day and encouraged teachers to use resources as part of classroom instruction. Findings from the 2-year evaluation indicate that districts that incorporated R-Tech as part of regular instruction (i.e., non-supplementary programs) experienced benefits relative to districts that adhered to the grant's intent and implemented supplementary programs. The evaluation's results indicate that districts implementing non-supplementary programs:

- Served more students using R-Tech resources,
- Experienced lower average per-student implementation costs,
- Had better student outcomes in reading/ ELA and mathematics,
- Improved attendance outcomes, and
- Achieved greater teacher buy-in and support for grant goals.

Recognizing the challenges that rural districts experience in implementing supplemental instructional programs and the benefits of including technology-based resources as part of classroom instruction, the evaluation recommends grant guidelines be revised to enable districts to include R-Tech services as part of regular instruction in addition to offering supplementary programs. Doing so will enable more students to access R-Tech resources, increase teacher awareness of services, reduce program costs, and may lead to improved achievement outcomes.

For additional detail and discussion, the complete report is located at the following website: http://www.tea.state.tx.us/index4.aspx?id=2926&menu_id=949.

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