
Thank you for your request to our REL Reference Desk regarding efforts being made in rural school districts to close the technology gap in order to better qualify students in the new flat world. Ask A REL is a collaborative reference desk service provided by the ten regional educational laboratories (REL) that, by design, functions much in the same way as a technical reference library. It provides references, referrals, and brief responses in the form of citations on research based education questions.

The information below represents the most rigorous research available. Researchers consider the type of methodology and give priority to research reports that employ well described and thorough methods. The resources were also selected based on the date of the publication with a preference for research from the last ten years. Additional criteria for inclusion include the source and funder of the resource.

Question: *What are rural school districts in the South doing to close the gap in technology to better qualify students to succeed in the new flat world?*

Key words and search strings used in the search: *technology in rural school districts; rural schools AND technology integration; computer uses OR online learning AND rural schools; distance learning AND rural school districts*

Search databases and websites:

1. ERIC: <http://www.eric.ed.gov/>
2. JSTOR: <http://www.jstor.org/action/showAdvancedSearch>
3. Google Scholar: www.google.com/scholar
4. Institute of Education Sciences (IES) Resources: <http://ies.ed.gov/pubsearch/>
5. What Works Clearinghouse: <http://ies.ed.gov/ncee/wwc/>

Citations Retrieved: (NOTE: Abstracts and executive summaries are copied directly from the reports when possible to ensure accuracy):

Results:

Based on the database searches described above, there were no causal studies on this topic. Below are some related articles and resources to guide your search for information pertinent to your question.

Hannum, W. H., Irvin, M. J., Banks, J. B., & Farmer, T. W. (2009). Distance education use in rural schools. *Journal of Research in Rural Education*, 24(3), 1–15. Retrieved from <http://dose.wallacehannum.com/DE%20Survey.pdf>.

Abstract/Summary: A national survey of rural school systems in the United States was conducted to determine the extent to which distance education is being utilized by rural schools, the

technologies used, the curriculum areas impacted, the perceived needs for distance education, their satisfaction with distance education, and the barriers to distance education use. Data were collected through telephone surveys with 394 school districts selected at random. Most rural school districts were currently using distance education. The subjects most often offered by distance education were math, foreign language, and English. A large majority of the districts indicated satisfaction with distance education courses; almost half stated they were very satisfied. The majority of students who enrolled in distance education courses completed these courses. Two-thirds of the districts indicated a need for additional distance education courses. Only a small portion of school districts indicated they are able to offer all the advanced and enrichment classes that students need without using distance education. The large majority of the districts did not see connectivity as a barrier to distance education use. Common barriers were funding, scheduling, and difficulty implementing distance education courses. The two most common formats for distance education courses in rural schools were two-way videoconferencing courses and online courses. Implications for future research are discussed. (Contains 8 tables.)

Holian, L., Alberg, M., Strahl, J. D., Burgette, J., & Cramer, E. (2014). *Online and distance learning in southwest Tennessee: Implementation and challenges* (REL 2015-045).

Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Appalachia. Retrieved from <http://ies.ed.gov/ncee/edlabs>.

Abstract/Summary: The purpose of this study was to increase the understanding among members of the Southwest Tennessee Rural Education Cooperative (SWTREC), a coalition of superintendents from 12 districts (half of which are rural) surrounding Memphis, about the online and distance-learning courses offered by schools that compose the Cooperative. Data for this report were collected through an online questionnaire administered by districts in the SWTREC in April 2013 and completed by one person from each participating school. Seventeen of the twenty-one high schools within the SWTREC districts responded to the survey. More than 80 percent of responding schools reported offering online or distance-learning courses in school year 2012/13. On average, schools provided more online than distance-learning courses, and they had higher enrollments in online courses. Both online and distance-learning courses were used to provide students with access to dual enrollment courses. Schools that offered online courses most often identified the opportunity for students to accelerate credit accumulation as a "very important" reason for offering the courses. Technological limitations--both the availability of technology and restricted periods when technology was available--were barriers schools perceived in offering online and distance-learning courses. A survey instrument is appended.

Howley, A., Wood, L., & Hough, B. (2011). Rural elementary school teachers' technology integration. *Journal of Research in Rural Education*, 26(9). Retrieved from <http://jrre.vmhost.psu.edu/wp-content/uploads/2014/02/26-9.pdf>

Abstract/Summary: Based on survey responses from more than 500 third-grade teachers, this study addressed three research questions relating to technology integration and its impact in rural elementary schools. The first analyses compared rural with non-rural teachers, revealing that the rural teachers had more positive attitudes toward technology integration. Then analyses examined dynamics influencing technology integration (operationalized as the sophistication of students' technology use) in rural schools only. Regression results showed that attitudes, teachers' preparation for using technology, and the availability of technology had significant positive associations with technology integration, whereas the schools' remoteness and socioeconomic status did not have significant associations. Notably and in contrast to some recent reports, responses from a number of rural teachers indicated that their access to instructional technology continues to be limited and that their preparation for using technology has been inadequate to support the engagement of students with sophisticated technology applications. (Contains 1 table and 5 footnotes.)

Irvin, M. J., Hannum, W. H., Farmer, T. W., de la Varre, C. & Keane, J. (2009). Supporting online learning for advanced placement students in small rural schools: conceptual foundations and intervention components of the facilitator preparation program. *The Rural Educator*, 31(1), 29-37. Retrieved from <http://files.eric.ed.gov/fulltext/EJ876131.pdf>

Abstract/Summary: This paper examines the need for interventions to support students who are taking advanced placement courses in small rural districts and describes the Facilitator Preparation Program (FPP) as a strategy to address this need. Issues in the delivery of Online Distance Education (ODE) in small rural schools are summarized and the conceptual foundations and service delivery considerations of the FPP are outlined. Future research needs are also considered.

Jones, R., Hall, S., Thigpen, K., Murray, T., Loschert, K. (2015). *Building a foundation: How technology-rich project-based learning transformed Talladega county schools*. Alliance for Excellent Education Retrieved from Alliance for Excellent Education website: <http://all4ed.org/wp-content/uploads/2015/04/Talladega.pdf>

Abstract/Summary: This report demonstrates how one predominantly low-income school district dramatically improved student engagement in the classroom and increased high school graduation rates through project-based learning (PBL) and the effective use of technology. The report, which includes short video segments with educators and students, focuses on Talladega County Schools in Alabama, where technology is an important component that builds students' abilities to solve real-world problems; master college- and career-ready academic standards; and develop skills in communication, collaboration, critical thinking, and other deeper learning competencies.

Mokher, C., Lee, S., & Sun, C. (2015). *Preliminary findings from impact and implementation analyses of the northeast Tennessee i3 consortium: Quarterly report, October 2014–December 2014*. Retrieved from the Center for Naval Analyses website:
<http://www.cna.org/sites/default/files/research/IRM-2015-U-2015-009660.pdf>

Abstract/Summary: In Fall 2010, the Niswonger Foundation received a five-year validation grant from the Investing in Innovation Fund (i3) to create the Northeast Tennessee College and Career Ready Consortium of 29 high schools and five colleges. This report evaluates the Consortium's impact on student outcomes three years in. Students in Consortium schools had slightly higher ACT scores, were more likely to participate in Advanced Placement (AP) courses, and were more likely to score a 3 or higher on an AP exam than students in matched comparison schools. Findings on the impact of the Consortium on college enrollment are mixed. Also almost all program components scored 2.0 or higher on a 3-point scale, indicating "moderate" fidelity of implementation. This report previews information to be submitted to the National Evaluation of i3 (NEi3), which determines the overall impact of the federal investment in the i3 program.

Referrals

Federally Funded Resources:

- Institute of Education Sciences (IES), public search engine available at:
<http://ies.ed.gov/pubsearch/>
- What Works Clearinghouse: <http://ies.ed.gov/ncee/wwc/>
- National Resource Center on Rural Education Support:
http://www.nrcres.org/distance_ed.htm

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