

Technology in Rural and Urban Schools: A Comparison Study

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Abstract

This article examines the availability, use, and integration of technology in rural schools versus technology in urban schools in Nebraska. Data was gathered through interviews with eleven schools in central and eastern Nebraska, seven rural and four urban. Representatives from schools were excited about implementing technology in the classroom but acknowledged a variety of problems ranging from insufficient funding to unwilling teachers. Though several significant differences were noted among availability and training opportunities, much of the data was similar between rural and urban schools. The key similarity found was the passion of educators, administrators, and specialists for the engagement and the individual learning that the implementation technology in the classroom creates.

#SchoolsUnderAttack

“Public Education’s Biggest Problem Keeps Getting Worse” from the Washington Post

“The Failure of American Schools” by Joel Klein from The Atlantic

“How Bad Are the Public Schools?” from PBS

“Top 5 Reasons Why Public Schools are Failing Our Children” from education-portal.com



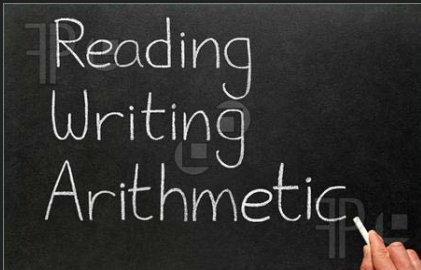
Public education's biggest problem keeps getting worse



The Failure of American Schools



Back to Basics?



What does "rural" mean?

- Less than 2,500 people
- Located in:
 - Rural or farming community
 - Small city or town
- Not a suburb of larger city

Literature Review

- 1/6 of US children live rurally
- 244/250 poorest counties in America are rural
- 20% of rural students live in poverty
- Rural schools spend approximately \$2,000 less per pupil
- Rural school administrators pursue technological educational aids at a greater rate than larger schools

Methodology

Purpose of Study

- Compare in rural and urban schools:
 - availability of technology
 - implementation of technology

1. What technology is currently available and how is it being used in the participating rural and urban schools?
2. How is professional development achieved at the participating schools?
3. How do teachers from these schools describe their experience using technology in teaching?

Research Design and Procedure

- Qualitative approach
- Agreement to participate
- Schedule interview
- Pre-interview email
- Consent form

Data Collection

- Data were collected via:
 - In-person interviews
 - Email questionnaire.
- The interviews:
 - Conducted with staff from:
 - Rural Area Schools
 - Urban Area Schools
 - Lasted about thirty minutes
 - Were held at a place and time chosen by the participants.
 - Were audio recorded

Population & Sampling Procedures

- Non-probability voluntary sample
- E-mail invitations sent to thirty (N=30) rural and urban schools across Nebraska
- Eleven (n=11) schools agreed to participate

Study Limitations

- Access to specific schools
- Location
- Data collection targets

Ethical Considerations & IRB

- Potential ethical considerations
- Methods and procedures ensure protection of:
 - Subjects identity
 - Schools identity
 - Anonymity of responses
 - Voluntarily participation

Data Analysis

Table 1: Identification of Schools as Rural or Urban

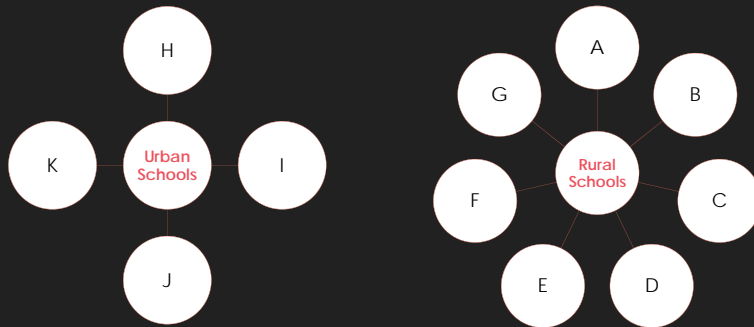
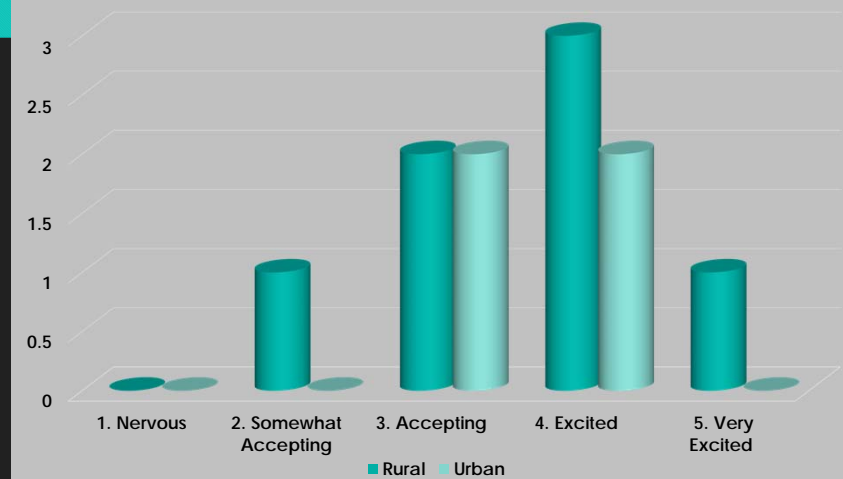


Table 2: Technologies Available as Reported by School Representative

| Technologies | Number of Rural Schools | Number of Urban Schools |
|---------------------------------|-------------------------|-------------------------|
| Laptops | 7 | 2 |
| MacBooks | 2 | 2 |
| Google Chromebooks | 1 | 1 |
| Mac/PC Desktop Computers | 5 | 3 |
| iPads/iPad Minis | 6 | 3 |
| PC Tablets | 0 | 1 |
| SmartBoard | 5 | 1 |
| AppleTV | 3 | 0 |
| Schoolology | 3 | 0 |
| Mimeos | 1 | 1 |
| WiFi Printers | 1 | 0 |
| Elmo Projector/Document Cameras | 2 | 2 |
| Jot Pro | 1 | 0 |
| Digital Microscopes | 1 | 0 |
| e-Textbooks | 1 | 1 |
| Digital Graphing Calculators | 1 | 0 |
| Robotics | 1 | 0 |
| iPods | 0 | 1 |
| Clickers | 0 | 2 |
| Wireless Sound System | 0 | 1 |
| LCD Projector | 0 | 3 |
| Video Cameras | 0 | 1 |

Table 3: Teachers' Reaction to Technology as Reported by School Representative



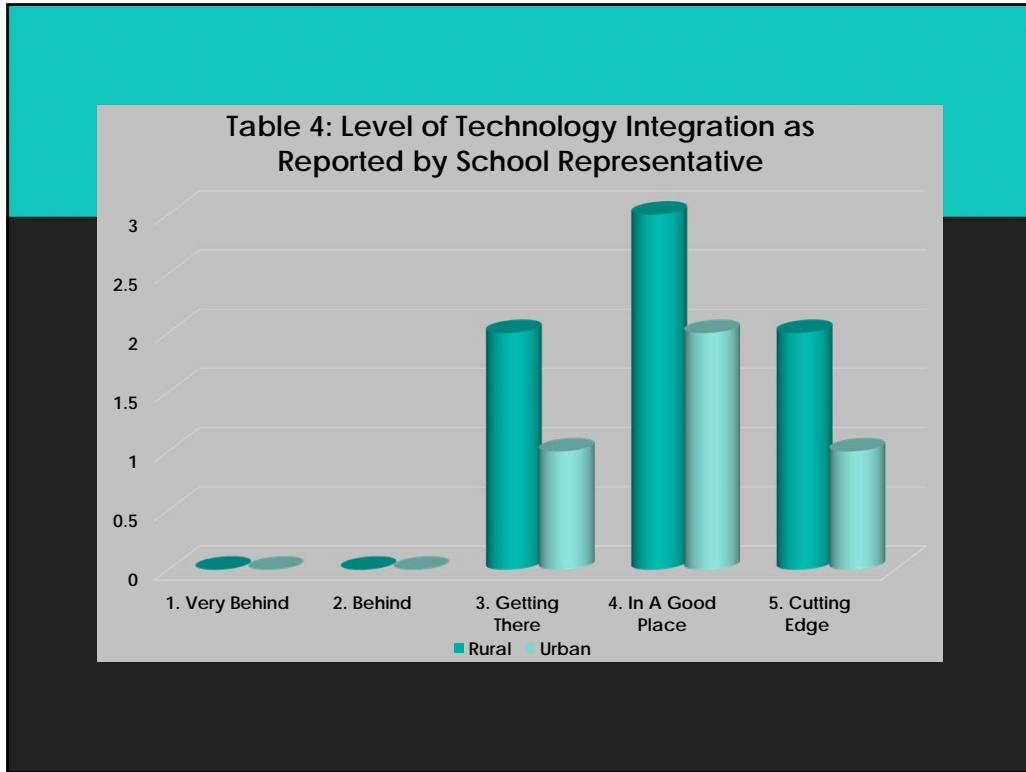


Table 5A: Methods of Teacher Training as Reported By School Representative

| Method | Number of Rural Schools | Number of Urban Schools |
|--|-------------------------|-------------------------|
| ESU | 7 | 0 |
| In-Service Professional Development | 3 | 3 |
| Technology Specialist | 3 | 1 |
| Summer Workshops | 2 | 1 |
| Teaching Themselves | 3 | 0 |
| Teacher-to-Teacher Sharing | 3 | 0 |
| Regional/State Conventions/Conferences | 3 | 0 |
| NETA | 2 | 0 |
| Google Summit | 1 | 0 |
| Learning Coach | 0 | 1 |
| District Provided Training | 0 | 1 |
| Online Video Training Courses | 0 | 1 |

Table 5B: Frequency of Teacher Training as Reported By School Representative

| | Number of Rural Schools | Number of Urban Schools |
|-------------------------------------|-------------------------|-------------------------|
| Frequency | | |
| Continually | 0 | 1 |
| Once A Week | 1 | 0 |
| Once A Month | 1 | 1 |
| Several Times A Semester | 1 | 0 |
| Whenever A New Device is Introduced | 0 | 1 |
| Not Often Enough | 1 | 0 |
| Didn't Say | 3 | 1 |

Table 6: Challenges of Teacher Training as Reported by School Representatives

Rural Schools



Urban Schools

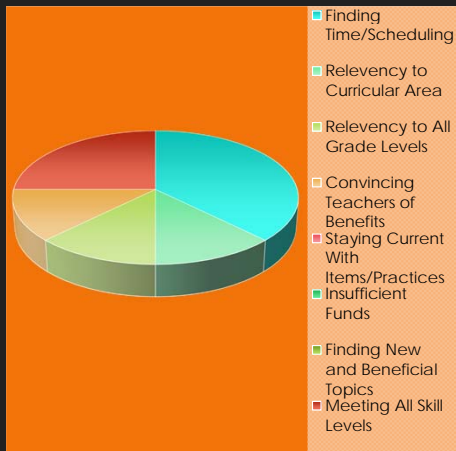


Table 7: Challenges of Technology Integration as Reported By School Representative

| Challenge | Number of Rural Schools | Number of Urban Schools |
|-------------------------------------|-------------------------|-------------------------|
| Staff Willingness | 2 | 1 |
| Student Behavior/Misuse | 2 | 1 |
| Monitoring/Restricting Device Usage | 2 | 1 |
| Parental Acceptance | 2 | 1 |
| Insufficient Funds | 1 | 2 |
| Adequate Infrastructure | 1 | 1 |
| Basic Care of Devices | 2 | 0 |
| Staff Preparedness | 2 | 0 |
| Allowing Students Equal Time/Access | 0 | 1 |
| No Challenges | 1 | 0 |

Table 8: Technology "Wish List" of Schools Over Next Two Years as Reported By School Representative

| Desired Technologies | Number of Rural Schools | Number of Urban Schools |
|-----------------------|-------------------------|-------------------------|
| No "Wish List" Items | 3 | 1 |
| 1:1 iPads/Devices | 2 | 2 |
| Additional iPads | 3 | 0 |
| e-Textbooks | 1 | 1 |
| More Mobile Labs | 1 | 1 |
| Filters for Devices | 1 | 0 |
| Flat Screen TVs | 1 | 0 |
| 3D Opportunities | 1 | 0 |
| New Management System | 1 | 0 |

Table 9: Emerging Themes from Interview Data

| Teacher Development | Student Engagement | 21 st Century Learning Skills | Funding |
|---|--|---|--|
| Willingness and enthusiasm depends on teacher age | Individualized learning opportunities | Technology changes the way teachers assess creativity | Cannot afford updates in content management systems |
| Not enough time | Independent learning | Independent assignments | |
| Scheduling is impossible for everyone | Effective use of technology for learning | Digital Citizenship | Not enough funds for proper teacher development |
| Patience and willingness to try and fail are important | Differentiated instruction | Students connecting and interacting globally | |
| Not enough funding available | Formative assessment | Collaboration opportunities | |
| Devices are available, but no knowledge on effective curriculum integration | Increased student retention | Communication skills | Funds are too limited to be 1:1 school and/or 1:1 district |
| | Active learning | Critical thinking | |
| | | Project-based learning | |

Results

21st Century Skills

The 4 C's:

- Collaboration
- Creativity
- Communication
- Critical Thinking

"As educators, we must meet the students where they are in today's world, and that is a technological world, or else we won't be able to make a meaningful connection and we've lost them."

-Representative from School J

"gives kids the opportunity to travel out into the world beyond them"

Beyond What the Book Says

Leveling the Playing Field

- Extra opportunities for exceptional students
- Beneficial for students with disabilities

"In all aspects"

- Grading Online
- Google Docs
- Writing Papers
- Apps
- Social Media
- Multimedia Projects

How is technology being used
in the classroom?

In A Perfect
World

- Equality
- Access
- Understanding
- Connection

Discussion

Differences

Rural Schools

- Saturation of Technology
 - 6 of 7 schools 1:1
- Maintenance and Support
 - One Technology Specialist

Urban Schools

- Saturation of Technology
 - 2 of 4 schools 1:1
- Maintenance and Support
 - Technical Team

"If all schools had adequate resources, on an equal scale, I am confident all schools would be able to offer the kind of education required for post-secondary success...However, as is often the case in Nebraska, some schools have more funding available to them while others have very little."

-Representative from School C

Questions?

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