Education is the only business still debating the usefulness of technology. Schools remain unchanged for the most part, despite numerous reforms and increased investments in computers and networks.

- U.S. Secretary of Education Rod Paige, quoted in National Educational Technology Plan, 2004
We need to embrace technology to make learning more engaging. Because when students are engaged and they are interested, that's where learning takes place.

- Unknown, quoted in Gupta, (2015 September 14), 20 population technology in education quotes, EdTechReview
Steve Baule

715-394-8054
sbaule1@uwsuper.edu

Assistant Professor, Educational Leadership
UW – Superior

Former IT director, HS principal, superintendent, media specialist, teacher
Recognize Jason Smith’s Contributions

- @JasonSmithCSBO

- Jason developed the original version of this workshop and then we collaborated on creating the Admin Academy

- We have presented together and separately
Workshop Goal:

Participants will gain the necessary skills and understanding to properly develop and implement an effective evaluation program for a 1:1 program.
<table>
<thead>
<tr>
<th>Please Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>School/Organization and your role</td>
</tr>
<tr>
<td>Current 1:1 Situation</td>
</tr>
<tr>
<td>Primary reason for attending today</td>
</tr>
<tr>
<td>Any specific questions you have</td>
</tr>
</tbody>
</table>
Overview

- Introductions
- Why Program Evaluation
- Facets of a 1:1 Program
- Determining Key Performance Indicators (KPI)
- Policy
- Infrastructure *writ large*
- Instructional Planning
- Selecting the Device(s), BYOD & Equal Access
- Professional Development
- Implementation and Revision
- Wrap Up
Four Days of No Tech for Roxbury Students

By FRED J. AIN
October 5, 2018 at 4:15 PM
Program Evaluation
Program evaluation is essential in today’s high stakes accountability environment
Collect and Analyze Data
Why Program Evaluation

- Demonstrate program effectiveness to administration and Board of Education
- Improve the implementation and effectiveness of programs
- Better manage limited resources
- Document program accomplishments
- Justify current program funding or support the need for increased levels of funding
- Demonstrate positive and negative effects of program participation
- Document program development and activities to help ensure successful replication
Have districts have assessed their 1:1 Programs

Q21 Have you assessed the impact of the 1:1 program?

Answered: 236  Skipped: 127

Yes

No
Have you assessed the impact of the 1:1 program?

Answered: 165  Skipped: 27

- Yes
- No
Important Questions to Ask

- Does your district already have a formal evaluation process for programs, initiatives, etc.?
  - If so, can you utilize those effectively?
  - If no, are there accepted practices, authors, etc. that would be easier to integrate into district practice?

- Who is responsible for the evaluation process?

- When is evaluation considered? What is the timeline?
Program Evaluation: Following the Correct Steps

1. Determine project goals & objectives to be measured ~ Key Performance Indicators
2. Determine criteria (or norms) to measure success
3. Determine measurement period(s)
4. Determine who will collect the data and how it will be collected
5. Conduct an analysis of the data & present your results
Evaluation Design Models

- Experimental Design (Possible in some cases using control and experimental groups; requires random assignment of students)
- Quasi-experimental design
- Non-experimental design (Comparison of variables within a single sample; Pre-test / Post-test model)
- Qualitative methods (Interviews, observations and descriptive data)

From KC-AERC, 1:1 Technology in Classrooms: Establishing Plans for Evaluation
<table>
<thead>
<tr>
<th>Evaluation Types</th>
<th>When to use</th>
<th>What it shows</th>
<th>Why it is useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formative Evaluation</td>
<td>• During the development of a new program.</td>
<td>• Whether the proposed program elements are likely to be needed, understood, and accepted by the population you want to reach.</td>
<td>• It allows for modifications to be made to the plan before full implementation begins.</td>
</tr>
<tr>
<td>Evaluability Assessment</td>
<td>• When an existing program is being modified or is being used in a new setting or with a new population.</td>
<td></td>
<td>• Maximizes the likelihood that the program will succeed.</td>
</tr>
<tr>
<td>Needs Assessment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process Evaluation</td>
<td>• As soon as program implementation begins.</td>
<td>• How well the program is working.</td>
<td>Provides an early warning for any problems that may occur.</td>
</tr>
<tr>
<td>Program Monitoring</td>
<td>• During operation of an existing program.</td>
<td>• The extent to which the program is being implemented as designed.</td>
<td>Allows programs to monitor how well their program plans and activities are working.</td>
</tr>
<tr>
<td>Outcome Evaluation</td>
<td></td>
<td>• Whether the program is accessible an acceptable to its target population.</td>
<td></td>
</tr>
<tr>
<td>Objectives-Based Evaluation</td>
<td>• After the program has made contact with at least one person or group in the target population.</td>
<td>• The degree to which the program is having an effect on the target population’s behaviors.</td>
<td>Tells whether the program is being effective in meeting it’s objectives.</td>
</tr>
<tr>
<td>Economic Evaluation:</td>
<td>• At the beginning of a program.</td>
<td>• What resources are being used in a program and their costs (direct and indirect) compared to outcomes.</td>
<td>Provides program managers and funders a way to assess cost relative to effects. “How much bang for your buck.”</td>
</tr>
<tr>
<td>Cost Analysis, Cost-Effectiveness Evaluation, Cost-Benefit Analysis, Cost-Utility Analysis</td>
<td>• During the operation of an existing program.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact Evaluation</td>
<td>• During the operation of an existing program at appropriate intervals.</td>
<td>• The degree to which the program meets its ultimate goal on an overall rate of STD transmission (how much has program X decreased the morbidity of an STD beyond the study population).</td>
<td>Provides evidence for use in policy and funding decisions.</td>
</tr>
<tr>
<td></td>
<td>• At the end of a program.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What to Measure
Key Performance Indicators (KPIs)
Technology in Classrooms Doesn’t Always Boost Education Results, OECD Says

Overexposure to computers and the Internet causes educational outcomes to drop, study finds
Key Performance Indicators (KPIs) are the critical (key) indicators of progress toward an intended result (KPI, 2018)

For more information go to KPI.org
Good KPIs:

- Provide objective evidence of progress towards achieving a desired result
- Measure what is intended to be measured to help inform better decision making
- Offer a comparison that gauges the degree of performance change over time
- Can track efficiency, effectiveness, quality, timeliness, governance, compliance, behaviors, economics, project performance, personnel performance or resource utilization
- Are balanced between leading and lagging indicators

From KPI.org
Potential Aspects of Instructional Technology Programming

- Student Achievement
- Student Growth
- Student Engagement
- Student Behavior
- Cost Effectiveness
- Instructure Effectiveness
- Professional Development
- Hardware Reliability
- Time on Task
Potential Student Performance Indicators

- State Test Scores
- ACT Scores
- Individual Improvement Over Time (Growth)
- AP Test Success
- Success in Courses (Failure Rate)
- Graduation Rate / Drop Out Rate
- College Matriculation Rate
- Attendance Rate
- Extra-curricular Participation
- Discipline Rates (Expulsion / Suspension / Referrals)
CoSN’s Elements

- Devices
- Networks
- Systems
- IT Spending
- Support
- Online Learning
- IT Key Performance Indicators -
37 Information Technology Key Performance Indicators for CoSN Members

DEVICES - 6 Measures
- Advanced Presentation Devices per Teacher
- Average Age of Computers
- Computers per Employee
- Tablets per Student (Student Use)
- Devices per Student
- Devices per Teacher (Dedicated Teacher Use)

IT SPENDING - 6 Measures
- Capital Investments
- Hardware, Systems And Services
- Personnel Costs
- IT Spending Per Student
- IT Spending Percent Of District Budget
- IT Spending Spending Per District FTE

NETWORK - 5 Measures
- Bandwidth per Student
- Bandwidth per User
- Days Usage Exceeds 75% of Capacity
- Overflow Capacity
- WAN Downtime

SUPPORT - 6 Measures
- Break/Fix Staffing Cost per Ticket
- First Contact Resolution Rate
- District Employees per Help Desk FTE
- Help Desk Call Abandonment Rate
- Help Desk Staffing Cost per Ticket
- Mean Time to Resolve Tickets

SYSTEMS - 10 Measures
- Business Systems Cost Per Employee
- Instructional Systems Cost Per Student
- Systems Downtime - E-Mail
- Systems Downtime - ERP
- Systems Downtime - Finance System
- Systems Downtime - HR System
- Systems Downtime - LCMS/IMS
- Systems Downtime - Online Assessment System
- Systems Downtime - Payroll System
- Systems Downtime - SIS

ONLINE LEARNING - 4 Measures
- Blended Courses Completed Per Course Offering
- Blended Courses Offered
- Online Courses Completed Per Course Offering
- Online Courses Offered

<table>
<thead>
<tr>
<th>Enrollment</th>
<th>Annual License Fee</th>
</tr>
</thead>
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From CoSN, KPI, 2014.
Some Flaws with CoSN KPIs

- IT Key Performance Indicators -

37 Information Technology Key Performance Indicators for CoSN Members

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<td></td>
</tr>
</tbody>
</table>
Factors for Evaluation from Intel

- 1:1 Computing Implementation
- Contextual Factors (Background Characteristics)
- Student Outcomes
- Classroom Practice
- Teacher Knowledge and Skills

Rockman, 2011.
First and foremost, the 1:1 program needs to be focused on student learning, personalization and the most effective methods for the delivery of instruction. A 1:1 program’s vision and goals will vary from district to district, but maximizing the learning potential of each individual student must remain the core of established goals.
Education Success Measures (ESMs)

What are the outcomes we wish to improve?

All Schools
1. Fewer disciplinary actions
2. Lower dropout rates
3. Less paperwork
4. Lower paper and copying expenses
5. Higher teacher attendance
6. Higher test scores

High Schools
7. Higher AP course enrollment
8. Higher college attendance plans
9. Higher course completion rates
10. Higher dual/joint enrollment in college
11. Higher graduation rates

From ProjectRED
How can district leaders help this happen?

- Providing ongoing systemic professional learning for everyone, at all levels
- Being skilled in leading reform measures
- Creating a shared vision based on research and best practices
- Ensuring the use of assessments and evaluations to collect data that will be used to continuously improving learning and instruction.
- Transformative leadership
And you must consider...

- How to cultivate district, building and staff leadership
- What is the short and long-term financial planning
- Expectation management
- Infrastructure
- Technology preparation, rollout and support
- Communications
- Policies

Of major importance in successfully engaging a 1:1 program is the community's will to let go of outdated, ineffective practices to make way for the new...
How to Measure Success

- Compare to Benchmarks
  - Criterion Referenced
  - Rubrics can work well here
- Measure Growth
  - Norm Referenced
- Qualitative Measures
For a 1:1 Program

- What would you want to measure?
- How would you measure each?
<table>
<thead>
<tr>
<th><strong>What</strong> will you measure?</th>
<th><strong>How</strong> (What is the measurement tool)?</th>
<th><strong>When</strong> (Annually, Quarterly, etc.)</th>
<th>Success will equal what?</th>
<th><strong>Who</strong> (Which stakeholders are involved in the goal setting and reporting?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Engagement and Motivation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost savings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased Student Achievement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SMART Goals

S.M.A.R.T. Goals

Specific → Measurable → Attainable → Realistic → Tangible
A Student Engagement Example

- Goal to increase student engagement through the implementation of 1:1 technology

- How will you measure student engagement?
  - Survey data?
  - Attendance?
  - Observation?
“The use of today’s meet [sic] resulted in the participation of 100% of the students. So many students are too shy to share aloud, but a discussion board gives them an opportunity to express themselves without feeling as self-conscious.”

“The discussion board then served as a quick-reference. I could quickly and easily see and address any misconceptions and provide reinforcement of how accurate the students were.”

Dana Rosenquist, 7th grade language arts teacher
<table>
<thead>
<tr>
<th>Page Views</th>
<th>Participations</th>
<th>Submissions</th>
<th>On Time</th>
<th>Late</th>
<th>Missing</th>
<th>Current Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>321</td>
<td>14</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>97.41%</td>
</tr>
<tr>
<td>210</td>
<td>21</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>98.15%</td>
</tr>
<tr>
<td>134</td>
<td>17</td>
<td>11</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>97.03%</td>
</tr>
<tr>
<td>384</td>
<td>18</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>97.04%</td>
</tr>
<tr>
<td>494</td>
<td>20</td>
<td>11</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>99.69%</td>
</tr>
<tr>
<td>211</td>
<td>10</td>
<td>11</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>97.5%</td>
</tr>
<tr>
<td>291</td>
<td>17</td>
<td>11</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>98.13%</td>
</tr>
<tr>
<td>273</td>
<td>15</td>
<td>10</td>
<td>9</td>
<td>1</td>
<td>0</td>
<td>93.7%</td>
</tr>
</tbody>
</table>
Current Grade v. Page Views

From CANVAS Data EDAD 866, Fall 2018 Term 1
Example: How to measure?

How Michigan’s 1:1 computing program is meeting its goals.

GOAL 1: Enhance student learning and achievement in core academic subjects with an emphasis on developing the knowledge and skills requisite to the establishment of a 21st century workforce.

FINDING: Student scores on the MEAP increased after their participation in the program. Results identify 1:1 as the reason for this increase.
## Example: How to measure?

<table>
<thead>
<tr>
<th>Action Items</th>
<th>Person(s) Responsible</th>
<th>Source Timeline</th>
<th>Source of Funds/Resources</th>
<th>Formative Evaluation</th>
<th>Summative Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Establish online learning communities anytime, anywhere.</td>
<td>All Staff</td>
<td>Ongoing</td>
<td>Time to share ideas</td>
<td>Learning communities are created, listservs</td>
<td>Educators will collaborate with others electronically Number of hits Number of job alike courses created</td>
</tr>
<tr>
<td>2. Provide technology training that is job embedded.</td>
<td>Director of Inst. Tech., Tech Coordinators, ITSs</td>
<td>Ongoing</td>
<td>Tech Allotment</td>
<td>ITSs conduct training at campuses on specified topics</td>
<td>Number of hours provided at each campus Evidence of technology being used in the classroom</td>
</tr>
<tr>
<td>3. Provide more time for staff development through the district calendar.</td>
<td>Asst to the Supt Staff Dev. Coord. IISD Board</td>
<td>TBA</td>
<td>Two days of student instruction</td>
<td>District calendar is changed to provide two more days for teacher training, waiver submitted to state</td>
<td>Teachers have more time to learn and collaborate with colleagues</td>
</tr>
</tbody>
</table>
Each 7th & 8th Grader had a ASUS Droid Tablet.

Teachers and students were using Google Apps for Education (GAFE) to produce much of their work.

Teachers, parents and students all have access to student work via Schoology, a learning management system or LMS.
Improving Student Motivation & Engagement

**Success Indicators**
- A decrease in office referrals, detentions and suspensions
- A decrease in the number of days absent
- An increase in homework completion

**Results**
- Reduced from 138 to 28
- 45.8% decrease in days absent
- Completion increased from 59% to 76.2%
Increase Student Achievement

Success Indicators
- Increase MAP and ISAT scores
- Increase the use of formative assessment via Schoology
- Increase RTI interventions for struggling students

Results
- 77% of students met benchmarks in reading; 68% in math ~ highest rate in district
- 100% of 7th grade staff reported an increase
- The delivery of accommodations and modifications through the use of the tablet has been more than we could have asked for.
### Reduce Ongoing Instructional Costs

<table>
<thead>
<tr>
<th>Success Indicators</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction in the paper budget</td>
<td>Saved 30% of paper budget in first year</td>
</tr>
<tr>
<td>Decrease in staff absences</td>
<td>Staff absences decreased by about 66%</td>
</tr>
<tr>
<td>Long term reduction in textbook costs as we move to digital resources</td>
<td>Undetermined at this point</td>
</tr>
</tbody>
</table>
## Technology Integration Rubric

<table>
<thead>
<tr>
<th></th>
<th>Initiating</th>
<th>Developing</th>
<th>Demonstrating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attitudes</strong></td>
<td>Teacher is not sure that technology will enhance their teaching or their students’ learning, but tries to integrate nonetheless.</td>
<td>Teacher has some positive experiences with technology and begins to see its potential to enhance their teaching and to enhance student learning.</td>
<td>Teacher has had many positive experiences with technology integration.</td>
</tr>
<tr>
<td></td>
<td>Teacher is fearful of change.</td>
<td>Teacher occasionally shares practices with other teachers.</td>
<td>Teacher is a champion of technology integration.</td>
</tr>
<tr>
<td><strong>IT Fluency</strong></td>
<td>Teacher uses technology primarily for presentation or demonstration purposes.</td>
<td>Teacher sometimes uses technology for both presentation and interactive student activities (communication, production, collaboration).</td>
<td>Teacher regularly uses technology for both presentation and interactive student activities (communication, production, collaboration).</td>
</tr>
<tr>
<td></td>
<td>Teacher begins to use technology for interactive student activities.</td>
<td>Teacher uses online access to information from within school and from home, or from other settings.</td>
<td>Teacher uses online access to information from within school and from home, or from other settings.</td>
</tr>
<tr>
<td></td>
<td>Teacher uses online access to information from within school.</td>
<td>Teacher uses technology for personal and professional use, such as Microsoft Office software or e-mail.</td>
<td>Teacher uses technology for personal and professional use such as MS Office, e-mail, and is comfortable with different Web 2.0 technologies.</td>
</tr>
<tr>
<td></td>
<td>Teacher uses technology for professional and personal use, such as Microsoft Office software or e-mail.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Planning and Instructional Design</strong></td>
<td>Teacher is comfortable with the Common Instructional Framework and is starting to plan lessons that have a technology component.</td>
<td>Teacher is comfortable with the Common Instructional Framework and has planned some lessons that integrate technology.</td>
<td>Teacher integrates technology seamlessly within the Common Instructional Framework.</td>
</tr>
<tr>
<td></td>
<td>Teacher is somewhat comfortable with the Common Instructional Framework, but has started to plan lessons with technology components.</td>
<td>Teacher most often chooses technologies appropriate to their activity and need.</td>
<td>Teacher regularly uses technologies to support higher-level learning objectives.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Teacher begins to evaluate effectiveness of technology</td>
<td>Teacher chooses technologies appropriate to their activity and need.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Teacher encourages students to</td>
</tr>
</tbody>
</table>

*Technology Integration Rubric, ©, 2010, Jobs for the Future*
Performance Management Resources

- CoSNs KPI

- Information Technology Infrastructure Library (Best Practices)

- ISTE Standards and Performance Indicators

- ISTE Essential Conditions
  - [http://www.iste.org/standards/essential-conditions](http://www.iste.org/standards/essential-conditions)
Rubric Websites

- Rubistar
  - http://rubistar.4teachers.org
- iRubric
  - http://www.rcampus.com/indexrubric.cfm
- Teacher Planet
  - http://www.sites4teachers.com/ (search for rubric or assessment generators)
- How & When to Use Rubrics
  - http://pareonline.net/getvn.asp?v=7&n=3
Policy Aspects

- This is one of the Board’s most direct roles in the process
- Board’s set policy and direction with guidance from the administrative team
Building Policy

- Board Policy
- AUP & Social Media
- Administrative Procedures
- Student Handbooks
- Progressive Discipline
- Communicating it to Parents
Policy and Legal Considerations for Social Networking in Schools

- Web 2.0
- Acceptable Use Policy
- Policy Review & Guidelines
- First Amendment Considerations

Reference: "Policy and Legal Considerations for Social Networking in Schools"
By Dr. Steven M. Baule & Julie E. Lewis, ESQ
Used with permission.

Notification once may not be enough...

How do you deliver it?

Use a Captive Portal: Any device that connects to the network is prompted to review and “acknowledge” the AUP each time they connect...
What is the purpose?
Be responsible for your content
Be authentic
Address your audience
Use good judgment
Respect copyright
Protect confidential information
Bring value to the organization
Policies to Check

IASB Press Service

5.120; 5.125

6.235 (electronic resources)

7.20, 7.180, 7.190 (cyberbullying, electronic devices, sexting), 7.310
Guidelines

Do not post financial, confidential, sensitive, proprietary, etc…
Speak respectfully…about everyone associated with the district
Beware of comments about your posts…
If there are unfavorable comments, etc: don't remove the post and
don't reply as to escalate…
Disclaimer…the views of me the employee do not reflect…
Stick to the facts…accurate information
Do not post obscenities, slurs, etc… i.e. reputation!
Do not post about students w/o permission of _________
Is you post adding value to the district's reputation?
Don't violate copyright or trademarks

Think before you Post…
Time to Think and Plan...

What does your current policy allow? Revisions?

One2One Program
Evaluation Form
Infrastructure Considerations
Facets of infrastructure

- ISP Connectivity
- Firewalls / CIPA Compliance
- Data Storage: SAN v. Cloud, etc.
- Wired Network / Electrical Capacity
- Wireless Network
- E-mail and Account Management
- Hardware Base
- Help Desk Support / Repair Support
Bandwidth

- Brookings Institute Data
  - [https://www.brookings.edu/blog/brown-center-chalkboard/2016/06/15/are-school-internet-connections-fast-enough-to-support-personalized-learning/](https://www.brookings.edu/blog/brown-center-chalkboard/2016/06/15/are-school-internet-connections-fast-enough-to-support-personalized-learning/)

- K-12 Bandwidth Goals (FCC)
  - [https://upgrade.educationsuperhighway.org/types-of-fiber-services/k-12-bandwidth-targets/](https://upgrade.educationsuperhighway.org/types-of-fiber-services/k-12-bandwidth-targets/)

- Kajeet (How much does a student need?)
Digital Learning Requires High Speed Internet

Typical School has 10-15 Mbps

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partnership for Assessment of Readiness for College and Careers (PARCC)</td>
<td>100 kbps/student recommended</td>
</tr>
</tbody>
</table>

http://partners.schoolspeedtest.org/illinois.html
Topography

- Internet "Pipe"
- WAN
- Intranet
- PRI:Voice
- Private "Dark" Fiber Optic
- POTS
- LAN
- Purchased "Leased" Fiber Optic
- Fiber Optic, Coaxial, D-1
- Internet
Firewall

Filtering
Bandwidth Management
VPN
Gateway
A/V & Intrusion Protection
NAT
DMZ

EDGE
Heat Maps
Determine AP placement to maximize coverage...

WiFi/AP Types
n - up to 600 MB/s
b - 11 MB/s
g - 54 MB/s

2.4 GHz Band

How many connections per AP?
Don’t forget the need for non-1:1 devices

- Rotation plan
- Reduce the number of labs?
- Loaner equipment
- Loaner mice, keyboards, headphones?
Help Desk Organization

- Help desk process for 1:1 devices
- Repair staff
- Updates for devices
- Summer and breaks
- Metrics used to determine effectiveness
Devices

WARNING: Don’t Start Here

- Probably the most obvious piece of the puzzle
- Device policies
  - Student handbook considerations
  - Take home v. Stay at school
  - Summer use
  - Insurance and damage issues
What type of device are you using for 1:1 deployments?

Answered: 251  Skipped: 112

- iPad: 30%
- Chromebook: 60%
- Android Tablet: 10%
- Windows Tablet: 5%
- Apple Laptop: 5%
- Windows Laptop: 5%
- Linux/Unix Laptop: 5%
- Multiple or Other (please specify): 5%
Nicholas Negroponte

TED Talk 2008

One laptop per child

https://www.ted.com/talks/nicholas_negroponte_on_one_laptop_per_child#t-15546
BYOD & Equal Access

- Part of the program or not?
- The device, the internet; no both!
- Where is the equality?
  - In the classroom?
  - In the school?
  - At home?

Digital Divide Amongst Digital Natives
1:1 Programs have the potential to transform the instructional process.

Differentiation, Modifications and Accommodations like no other

Potential to implement the ideas of the 1930s Progressives
Educators to Review

- Carleton Washburn
  - *Better schools: A survey of progressive education*

- Salman Khan
  - *The one World school house: Education reimagined*
Facets of the Instructional Program

- Curriculum
- Instructional Methods
- Instructional Resources: traditional, electronic, and OER
- Learning Management System (LMS)
- Assessment Tools
Which technology practices improve learning the most? (rank order of predictive strength)

1. Intervention classes: Technology is integrated into every intervention class.
2. Change management leadership by principal: Leaders provide time for teacher professional learning and collaboration at least monthly.
3. Online collaboration: Students use technology daily for online collaboration (games/simulations and social media.)
4. Core subjects: Technology is integrated into core curriculum weekly or more frequently.
5. Online formative assessments: Assessments are done at least weekly.
6. Student/computer ratio: Lower ratios improve outcomes.
7. Virtual field trips: With at least monthly use, virtual trips are more powerful.
8. Search engines: Students use daily.
Knowing
Memorize, Just in Case, Remember

Doing
Apply, Solve, Create
Some Materials to Generate Ideas / Support

- TEDx – Schools of the Future
  - https://www.youtube.com/watch?v=y0cqrhvgBB0&feature=youtube_gdata_player
- Fast Company: What will schools look like?
  - https://www.youtube.com/watch?v=JZlgYiXzu58
- PBS Nova Documentary (3 hours)
  - https://www.youtube.com/watch?v=pq_ubRXwEXc
- Khan’s 2060 Education Predictions from 2010
  - https://www.youtube.com/watch?v=CiKrFcgVSIU
How do you measure instructional needs

- Standardized tests
- Grades
- AP Scores
- Attendance
Learning Management Systems

- What type of data can you gather from the system?
- How often do teachers post content?
- How often are the assessment tools used?
- ...
Professional Development

- Conduct a needs assessment annually
- Evaluate each PD activity
- Determine multiple ways to train staff
- Application training, pedagogical methods, new content
- ...

When
Where

Off Line

Social Media

On Line
What

Apps

Hardware

Instructional
Fidelity of implementation

- Do the teachers utilize the devices each day?
- Do students remember to bring the devices fully charged?
- Are online resources used appropriately?
- ....
Financial Impact of 1:1 Programing

- Total Cost of Ownership per Device
- Reduction in Operating Costs
- Reduction in Instructional Supply Costs
- Change in GSA via Attendance
- ....
Key Finding 2

Properly implemented technology saves money.

- Most discussions focus on the high costs of technology, not the potential for savings.
- Project RED shows that properly implemented technology can provide immediate short-term savings at all levels.
- For example, LMS features can reduce copy machine and bubble sheet expenses (through the switch to online formative assessment).
- To the extent that school systems are willing to change practices and states are willing to change policy, the savings can grow substantially over time.
- For example, longer-term state-level savings can come from reduced dropouts and dual/joint enrollment.

The projected savings in 13 areas average $459/student/year.
## Financial Impact Per Year - $25B

<table>
<thead>
<tr>
<th>Category</th>
<th>National Impact</th>
<th>Per Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Data Mapping</td>
<td>$605,000,000</td>
<td>$11</td>
</tr>
<tr>
<td>Online Professional Learning</td>
<td>$654,000,000</td>
<td>$12</td>
</tr>
<tr>
<td>Teacher attendance increase</td>
<td>$718,200,000</td>
<td>$13</td>
</tr>
<tr>
<td>Power savings</td>
<td>$861,666,667</td>
<td>$16</td>
</tr>
<tr>
<td>Digital core curriculum savings</td>
<td>$935,000,000</td>
<td>$17</td>
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<tr>
<td>Disciplinary action reduction</td>
<td>$1,100,000,000</td>
<td>$20</td>
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<tr>
<td>Post-secondary remedial education</td>
<td>$1,660,000,000</td>
<td>$30</td>
</tr>
<tr>
<td>Digital supplemental materials vs. print</td>
<td>$1,700,000,000</td>
<td>$31</td>
</tr>
<tr>
<td>Copy machine cost calculations</td>
<td>$2,200,000,000</td>
<td>$40</td>
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<tr>
<td>Online assessment savings</td>
<td>$2,392,500,000</td>
<td>$44</td>
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<tr>
<td>Dual/joint/AP course enrollment</td>
<td>$3,180,343,000</td>
<td>$58</td>
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<tr>
<td>Paperwork reduction</td>
<td>$3,300,000,000</td>
<td>$60</td>
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<tr>
<td>End of course failure</td>
<td>$5,865,200,000</td>
<td>$107</td>
</tr>
<tr>
<td><strong>Total Per Student excluding Dropout Savings</strong></td>
<td><strong>$25,171,909,667</strong></td>
<td><strong>$459</strong></td>
</tr>
</tbody>
</table>

FYI: Cost differential for 1:1 computing vs. typical 3:1 computing is approx. $225 per year per student.
Your Evaluation Team

- Who should be involved in the evaluation process?
- Internal Evaluators or External Evaluators?
- Administrators, Staff, Board Members, Students, Parents, Community Members?
- ...
Who has conducted the program assessment(s)?

Answered: 82  Skipped: 281

- Internal Staff
- External Consultant(s...)
- University Staff

Results of Illinois 1:1 Survey results
WRAP UP
Application & Dissemination

- Please complete the following Google Doc

- Due December 1, 2018 [?]
Questions:

sbaule1@uwsuper.edu
or 715-394-8054

Special Thanks to Del Wright,
UW-Superior’s CETL Media Specialist
REFERENCES


KC-AERC. (n.d.) 1:1 Technology in Classrooms: Establishing Plans for Evaluation


