Evaluating Technology

IETC Conference
November 15, 2018

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University of Wisconsin - Superior

Program Guide: ietc2018.sched.com
Download the IETC App from Google Play or App Store

Game: ietc.alludolearning.com

Must Know Info

IETC

NEED PD HOURS?

Log attendance after last session until to 12:00 AM each day to receive PD Hours. Instructions are on IETC app and website. **Il-edtech.org**

NEW @ IETC

Game: IETC for the WIN!
Complete game activities to earn points, beat your friends, and be entered into prize drawings.
ietc.alludolearning.com

Prizes awarded during dedicated exhibit halls, the reception, and Friday's luncheon.

Thursday Evening Reception

Drinks, food, & friends.

Ballroom Lobby, 2nd Floor
Thursday, November 15
5:00 - 6:30 PM

#CoffeeEDU

Coffee, conversation, & learning.

Outside Bar Area, 2nd Floor
Friday, November 16
7:00 AM - 8:00 AM

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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***

Program evaluation is essential in today's high stakes accountability environment

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

Roxbury students to experience "tech-free" days

Retrieved From: TAPinto, October 5, 2018 https://www.tapinto.net/articles/four-days-of-no-tech-for-roxbury-student

Early Technology Indicators

- Student to computer ratios
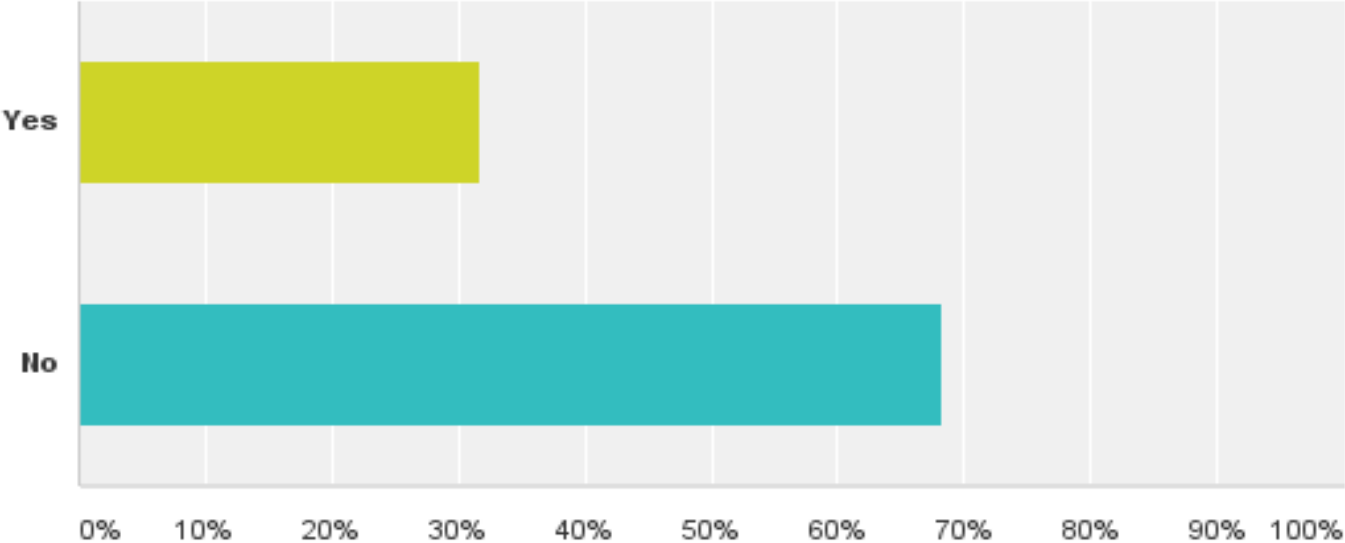- Age of computing equipment
- IT staff to student or faculty ratios
- Use of computer labs
- Funding
- Website traffic

How many Illinois districts have assessed their 1:1 Programs

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

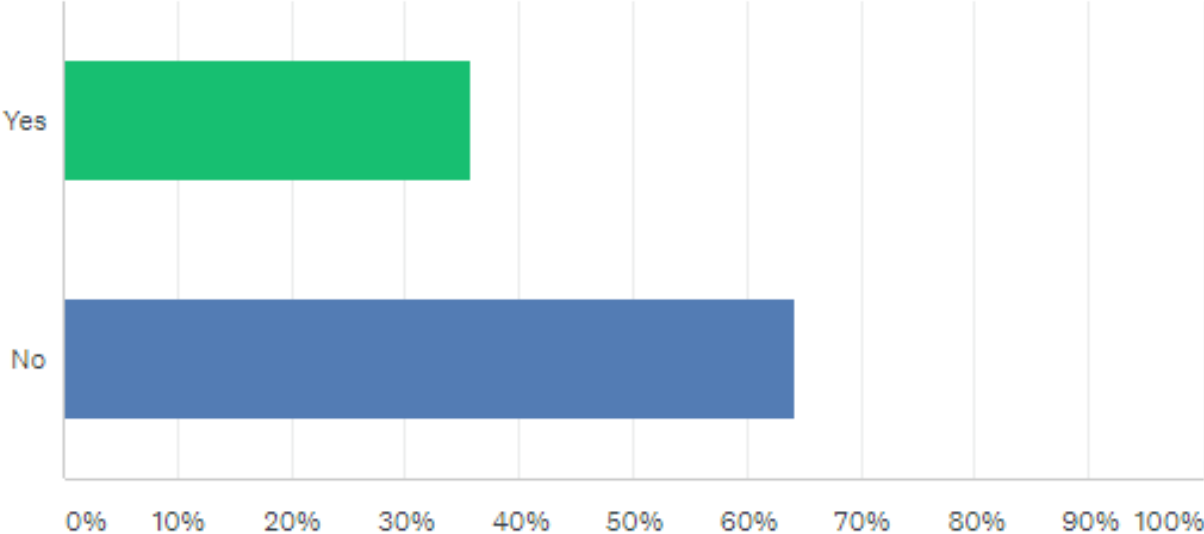Answered: 236   Skipped: 127

Baule, 2015

Indiana Results

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

Answered: 165   Skipped: 27

Baule, 2017

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)

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

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

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

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

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

Enrollment	Annual License Fee

From CoSN, KPI, 2014.

- IT Key Performance Indicators -

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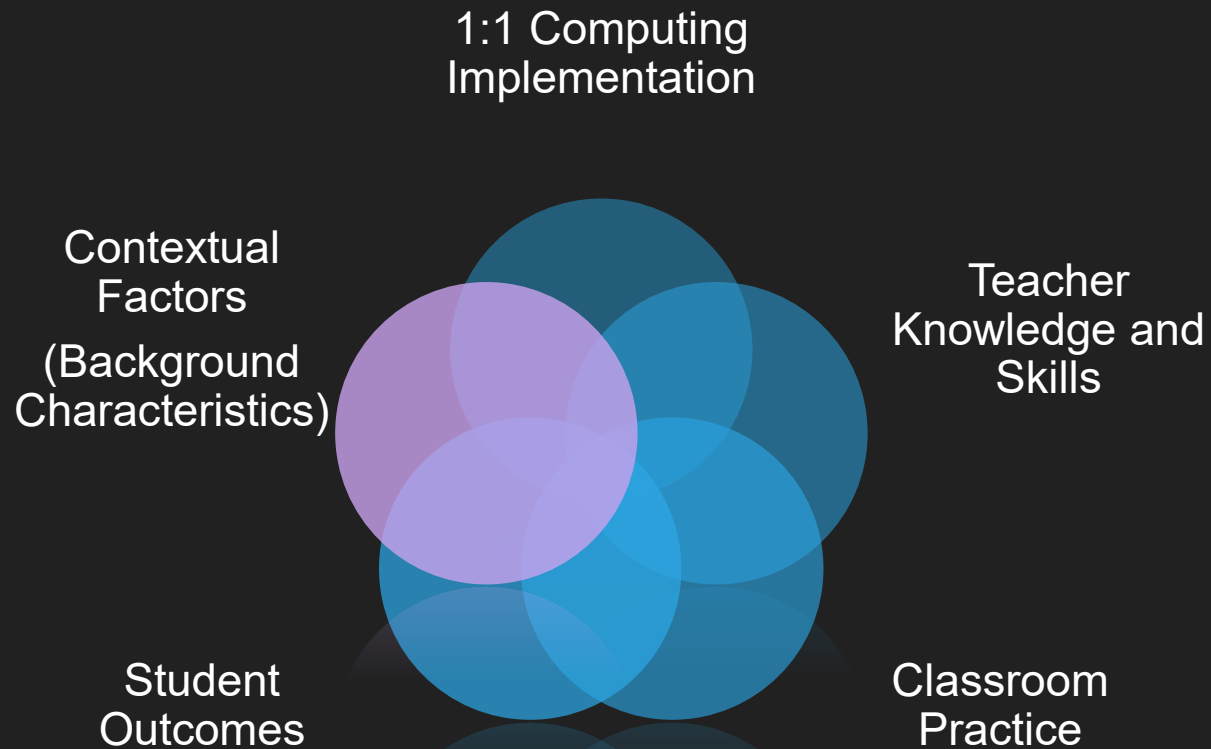- Help Desk Staffing Cost per Ticket
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Some Flaws with CoSN KPIs

From CoSN, KPI, 2014.

Factors for Evaluation from Intel

1:1 Computing Implementation

Teacher Knowledge and Skills

Classroom Practice

Student Outcomes

Contextual Factors

(Background Characteristics)

Rockman, 2011.

What does Project**RED** say?

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.

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

Facets of the Information Technology Program
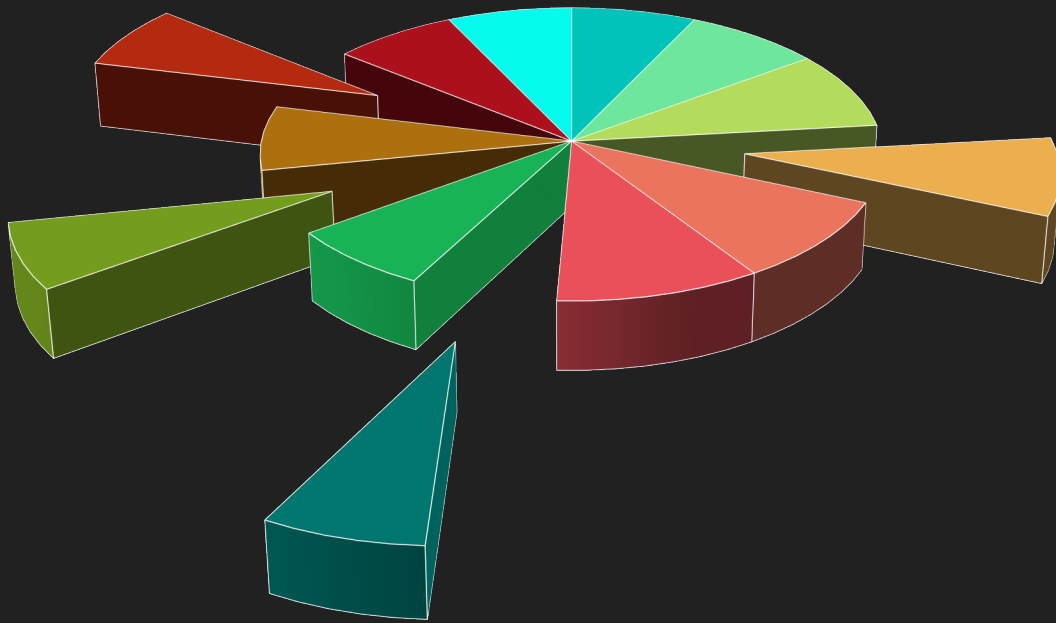
Facets
Infrastructure
Hardware
Software
Administrative Software
Service and Support
Staff Readiness
Technology Staff Development
Integration into the General Instructional Program
Integration into Special Instructional Programs
Instructional Technology Courses and Student Skill Expectations
Technology Facilities
Internet Presence
Organization of Technology Services

Baule, S. M. (2001). *Technology planning for effective teaching and learning.*

(Professional Growth Series). Worthington, OH: Linworth Publishing.

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

IT Program Evaluation: Following the Correct Steps

Determine project goals & objectives to be measured ~ Key Performance Indicators

Determine criteria (or norms) to measure success
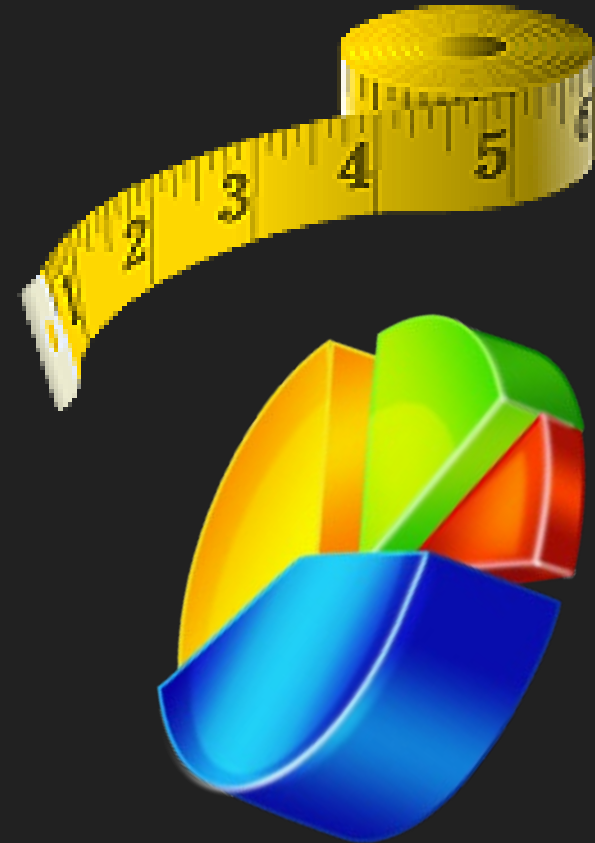
Determine measurement period(s)

Determine who will collect the data and how it will be collected

Conduct an analysis of the data & present your results
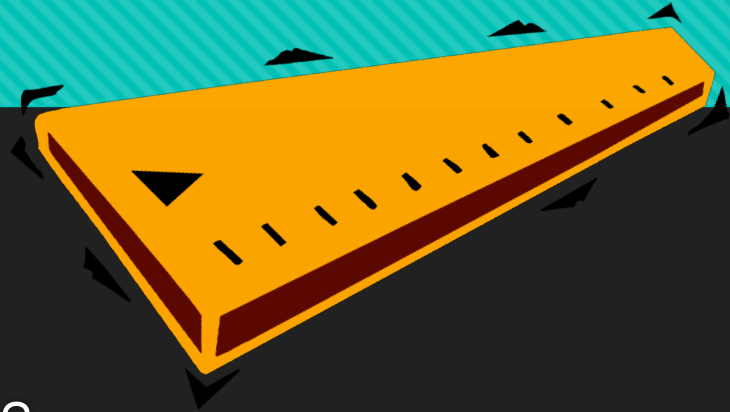
How to Measure Success

- Compare to Benchmarks
  - Criterion Referenced
  - Rubrics can work well here
- Measure Growth
  - Norm Referenced
- Qualitative Measures

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

For a 1:1 Program

○ What would you want to measure?

○ How would you measure each?
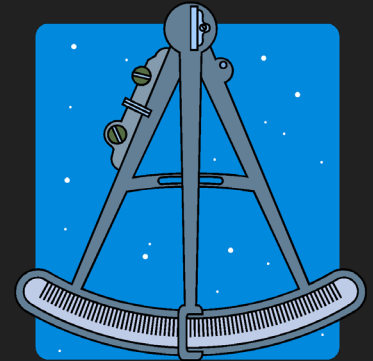
What will you measure?	How (What is the measurement tool)?	When (Annually, Quarterly, etc.)	Success will equal what?	Who (Which stakeholders are involved in the goal setting and reporting?)
Student Engagement and Motivation				
Cost savings				
Increased Student Achievement				

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?

Better Student Engagement

"The use of todays 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

Example: How to measure?

Technology & Learning *1:1 Computing Guidebook*, 2005

Example: How to measure?

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

North Boone 1:1 Tablet Program

- 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
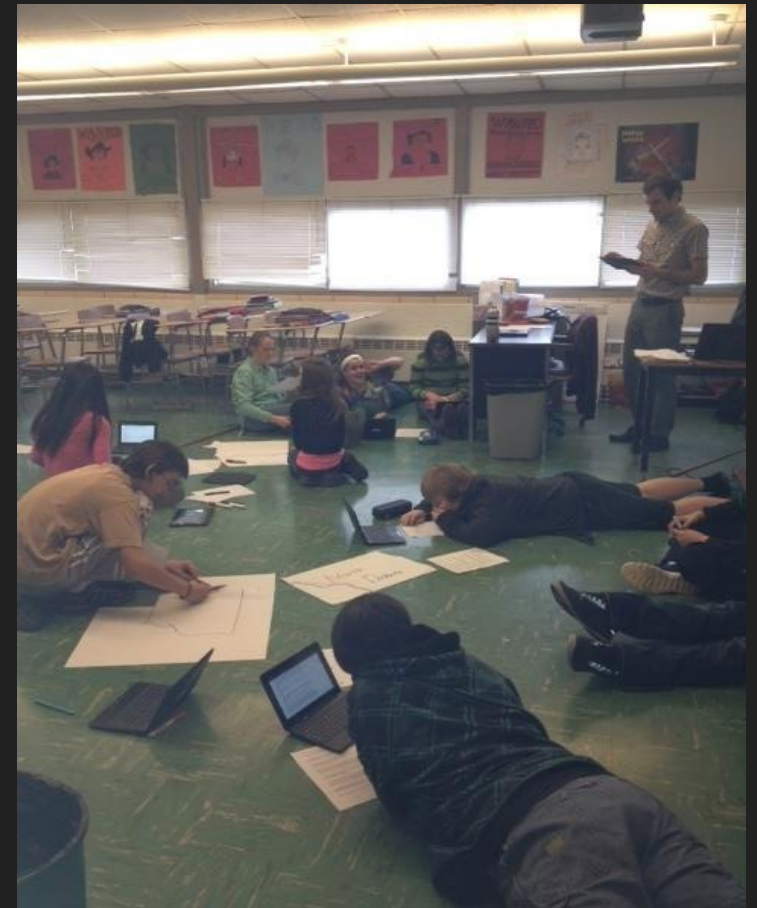
Improving Student Motivation & Engagement

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

Success Indicators

- Reduction in the paper budget

- Decrease in staff absences

- Long term reduction in textbook costs as we move to digital resources
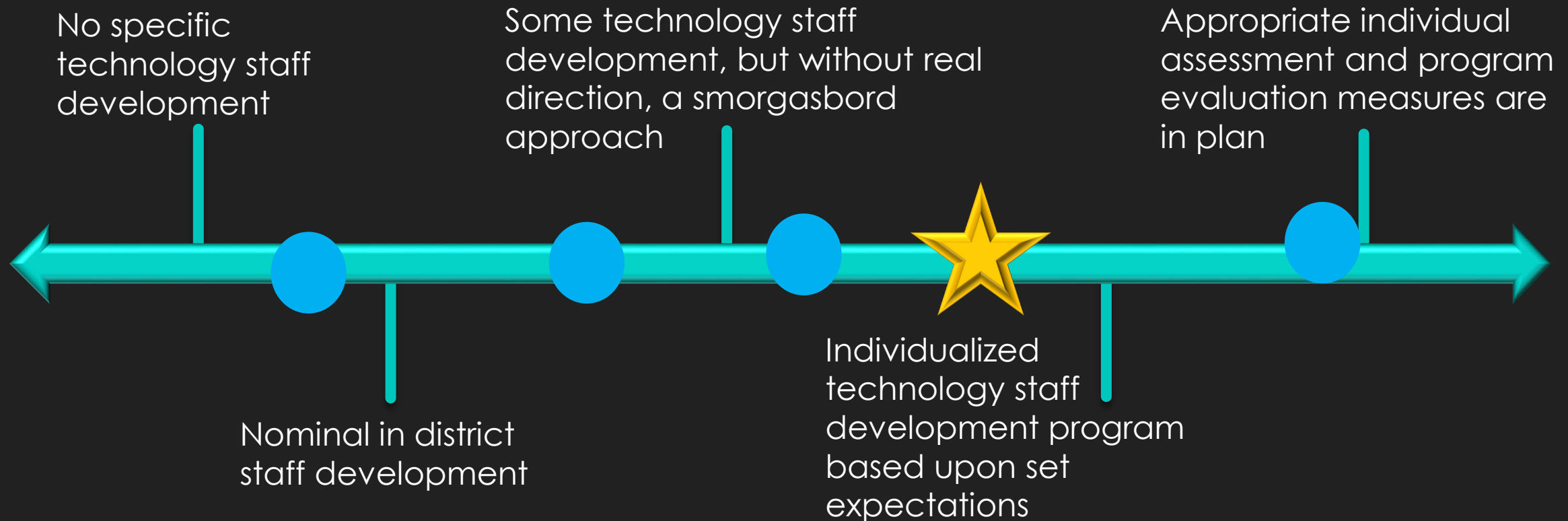
Results

- Saved 30% of paper budget in first year

- Staff absences decreased by about 66%

- Undetermined at this point

Technology Integration Rubric

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

Where does your district fall on the continuum?

No specific technology staff development

Some technology staff development, but without real direction, a smorgasbord approach

Appropriate individual assessment and program evaluation measures are in plan

Nominal in district staff development

Individualized technology staff development program based upon set expectations

Performance Management Resources

- CoSNs KPI
  - http://cosn.org/key-performance-indicators-kpis
- Information Technology Infrastructure Library (Best Practices)
  - http://www.itil-officialsite.com/
- ISTE Standards and Performance Indicators
  - http://www.slideshare.net/mictwell/iste-nets-and-performance-indicators-for-teachers
- ISTE 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

Questions:

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