

Developing a Robust Technology Program Evaluation Plan

Steve Baule, Assistant Professor, University of Wisconsin – Superior

sbaule1@uwsuper.edu

@Baule_S



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 Technology 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

↑ DJIA
16776.53 1.85%

↑ Nasdaq
4777.31 1.48%

↓ U.S. 10 Yr
-17/32 Yield 2.054%

↑ Crude Oil
46.34 1.76%

↓ Euro
1.1186 -0.24%

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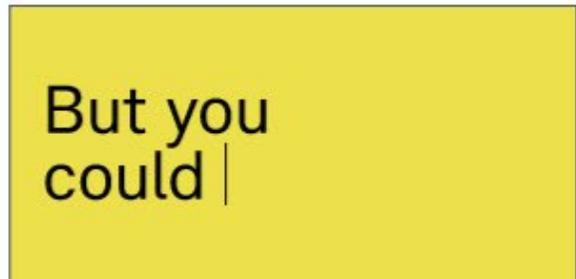
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U.S. | EDUCATION

Technology in Classrooms Doesn't Always Boost Education Results, OECD Says

Overexposure to computers and the Internet causes educational outcomes to drop, study finds



Retrieved From: WSJ, Sept 15, 2015 <http://www.wsj.com/articles/technology-in-classrooms-doesnt-always-boost-education-results-oecd-says-1442343420>

Four Days of No Tech for Roxbury Students

By FRED J. AUN
October 5, 2018 at 4:15 PM

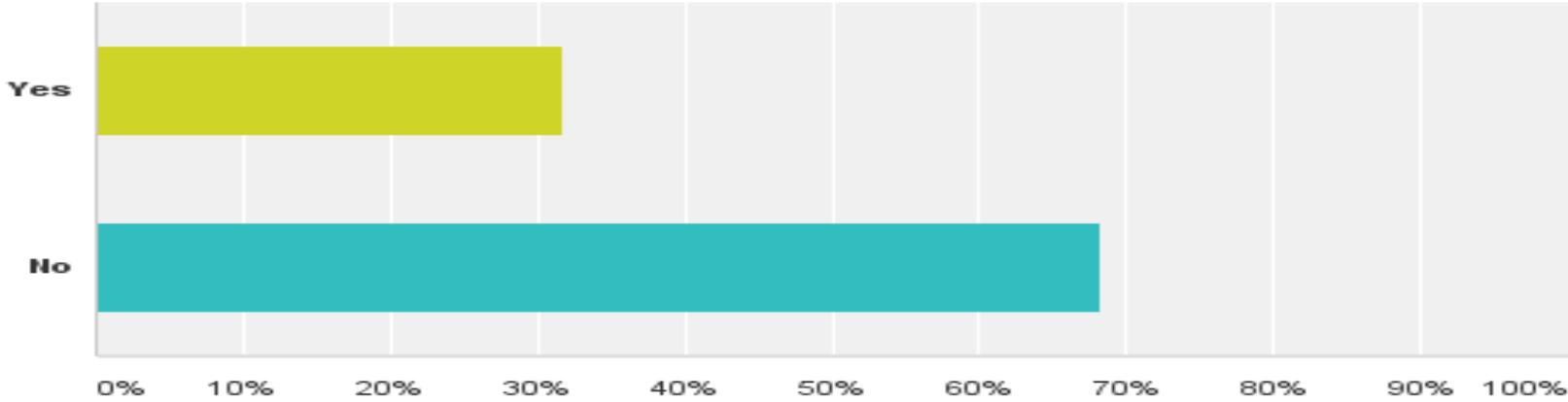


Roxbury students to experience "tech-free" days

How many Illinois districts have assessed their 1:1 Programs

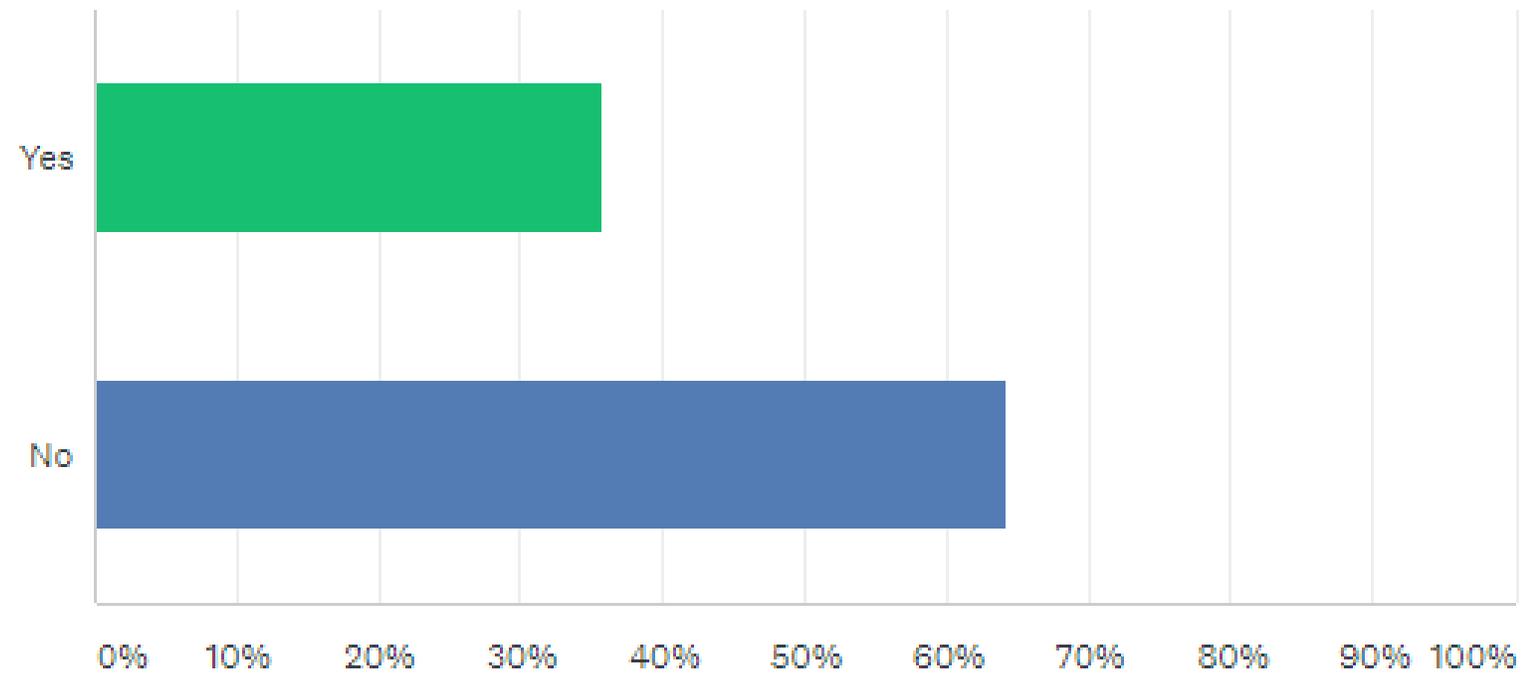
Q21 Have you assessed the impact of the 1:1 program?

Answered: 236 Skipped: 127



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

Answered: 165 Skipped: 27



Indiana Results

Baule, 2017

Three Core Options

**Technology
Itself**

**Overall
Student
Achievement**

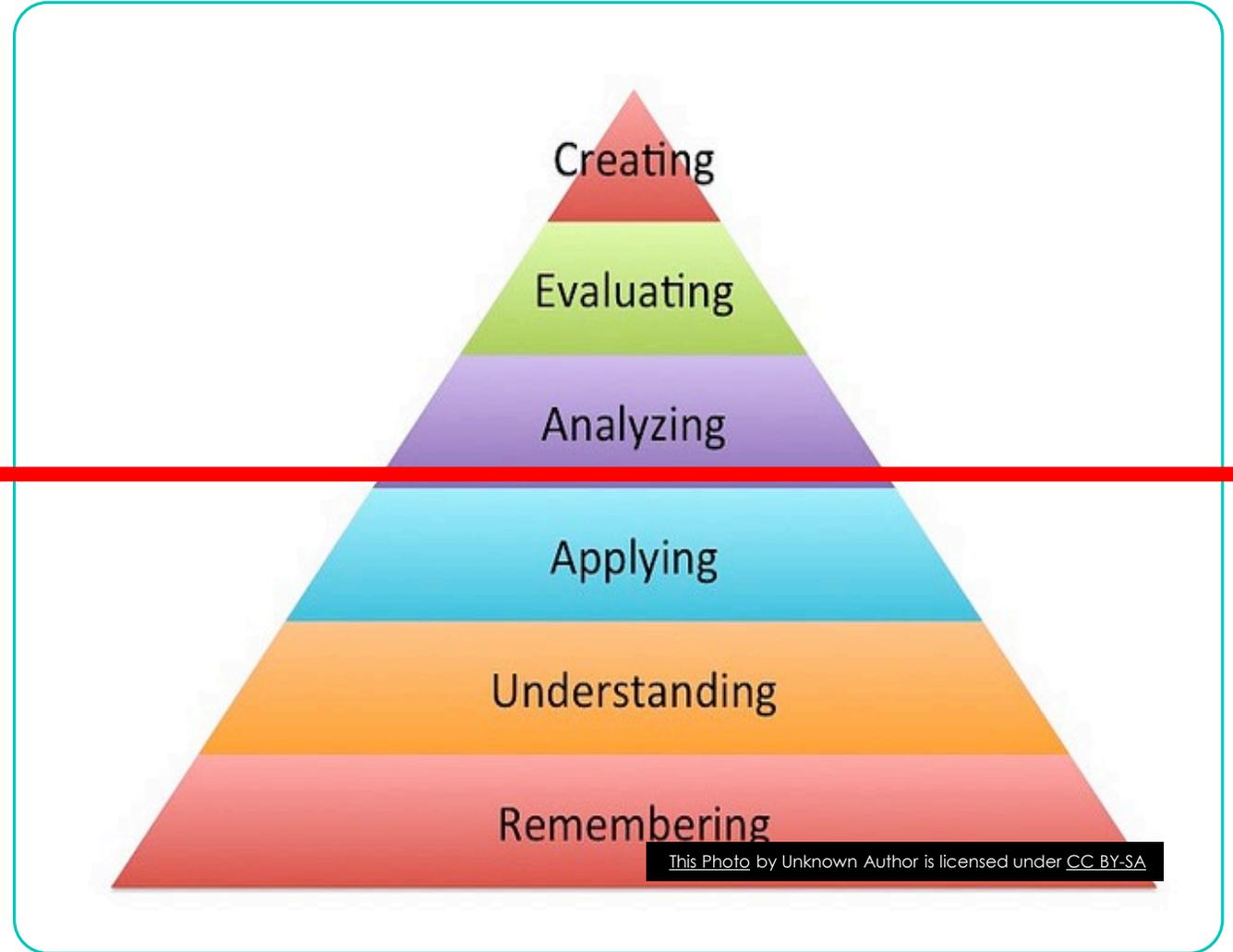
**Program
Effectiveness**

What to Measure When Evaluating Educational Technology

- Active Use
- Sustainable
- Systemic (Program-deep and program-wide)
 - Used to streamline processes and administration of the school
- Align to standards, frameworks, and credentials

Active use
occurs
above the
line!

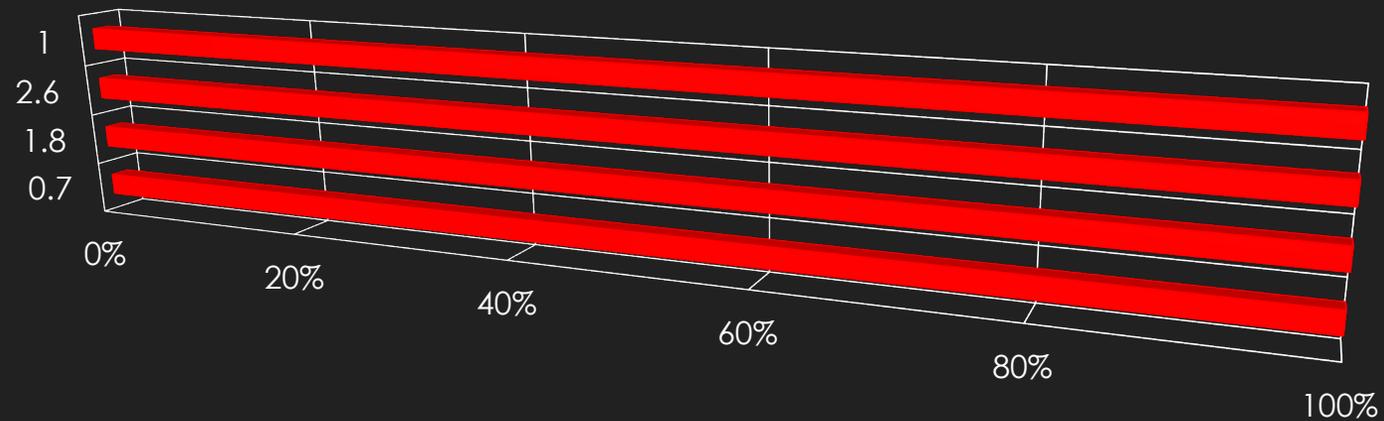
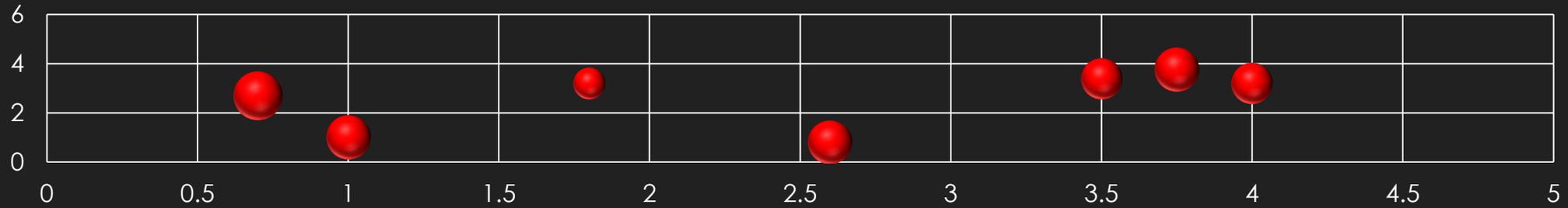
Using Bloom's
Taxonomy



Sustainable

- Is it grant funded or part of a regular budget line?
- What are the life span expectations of devices?
- How are devices supported?
- How are new faculty and staff trained on systems?

Is Technology used in pockets or across the Board?



Professional Development

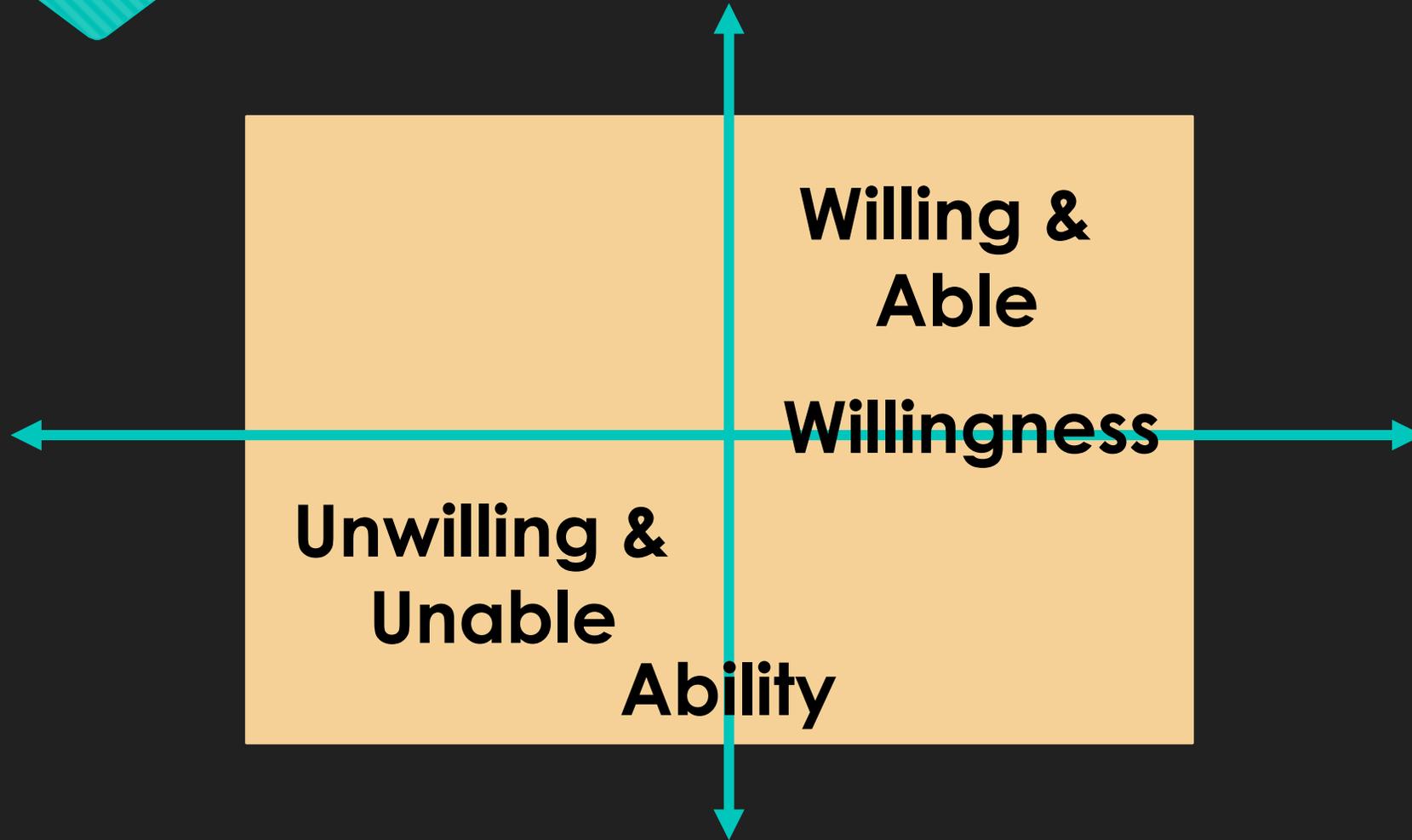
- Is technology a key component of new staff orientation?
- Is it clear using technology is a core expectation for staff?
- Is technology PD ongoing?
- Is technology PD provided at advanced levels?
- Is technology use part of the formal observation and evaluation process?

Potential Aspects of Instructional Technology Programming

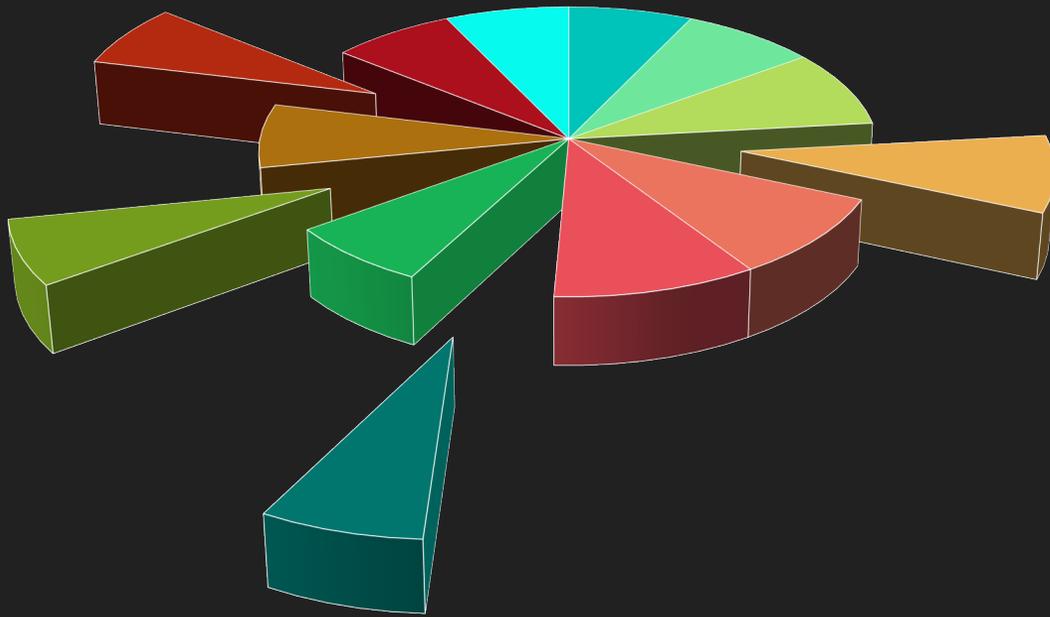


- Student Achievement
- Student Growth
- Student Engagement
- Student Behavior
- Cost Effectiveness
- Infrastructure Effectiveness
- Professional Development
- Hardware Reliability
- Time on Task

Staff Readiness



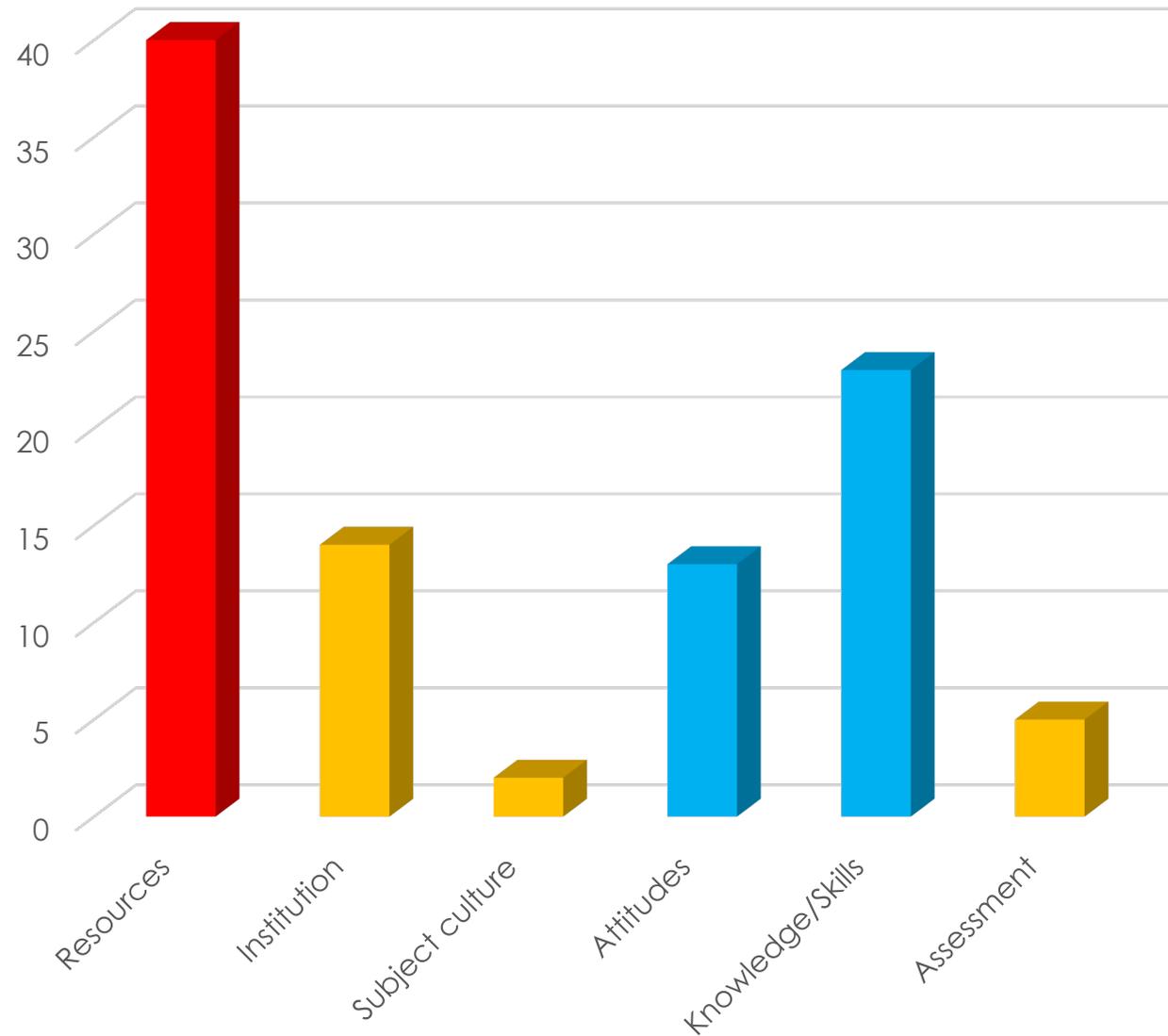
Facets of the Information Technology Program



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

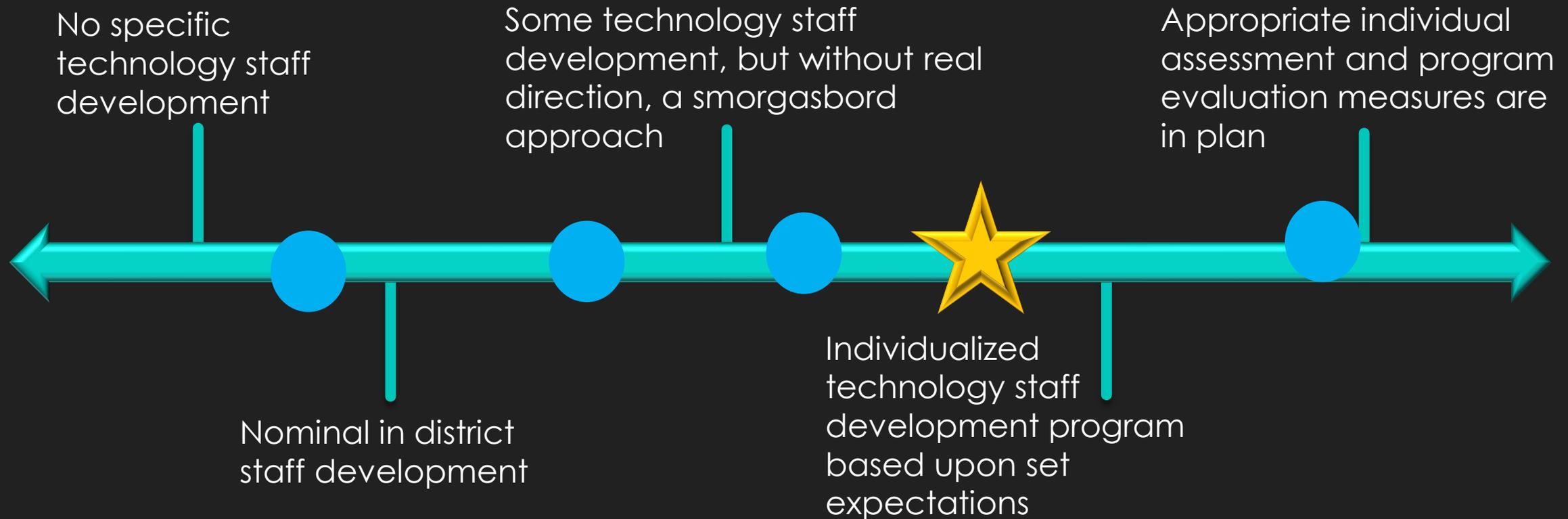
Baule, S. M. (2001). *Technology planning for effective teaching and learning*. (Professional Growth Series). Worthington, OH: Linworth Publishing.

Barriers to integration



Delgado, A. J., Wardlow, L., McKnight, K., & O'Malley, K. (2015). Educational technology: A review of the integration, resources, and effectiveness of technology in K-12 classrooms. *Journal of Information Technology Education: Research*, 14, 397-416

Where does your district fall on the continuum?



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

Program Evaluation: Following the Correct Steps

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

Determine criteria (or norms) to measure success

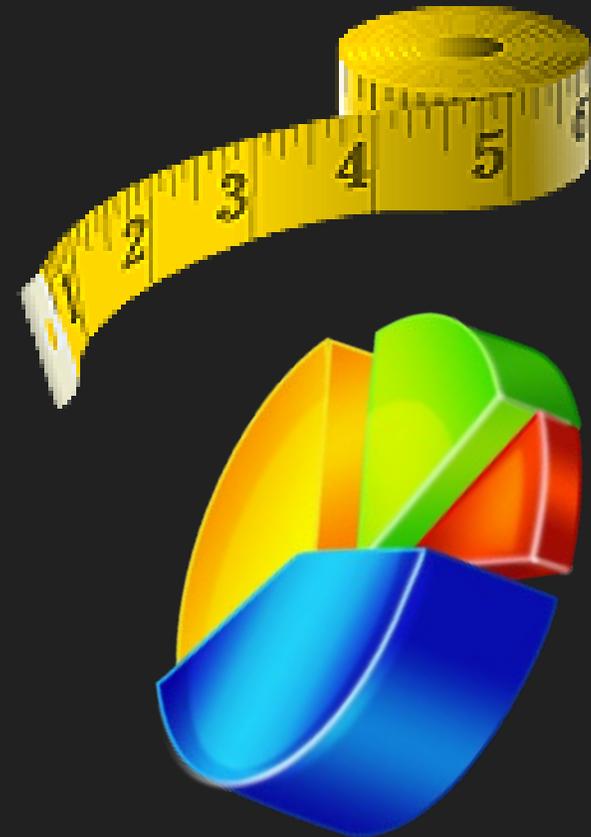
Determine measurement period(s)

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

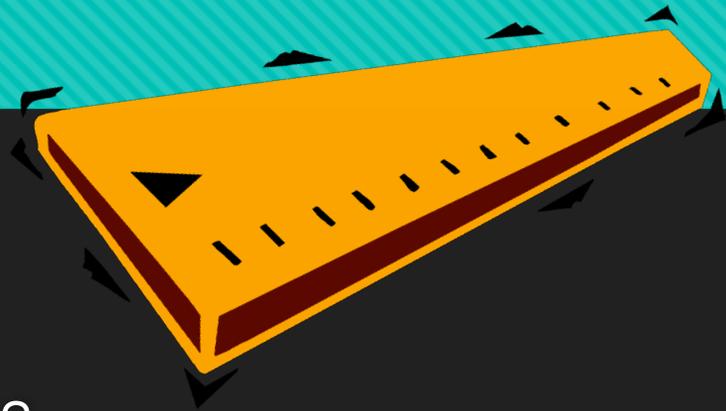
- Compare to Benchmarks
 - Criterion Referenced
 - Rubrics can work well here
- Measure Growth
 - Norm Referenced
- Qualitative Measures



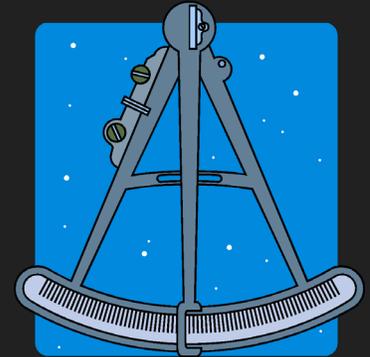
Evaluation Design Models

- 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)

For a Program



- What would you want to measure?
- How would you measure each?
- How often do you need to measure?



What to Measure

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?

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%

Better Student Engagement

“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

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

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>

Questions:

sbaule1@uwsuper.edu

or 715-394-8054 (office)

815-520-4851 (cell)



REFERENCES

- Baule, S. M. (2015). Achievement, engagement rise with 1:1 programs, *Illinois School Board Journal*, November/December 2015.
- Baule, S. M. (2017, Fall). The status of 1:1 programs in Indiana Schools, *Indiana School Board Journal*, Fall 2017, Vol. 63 (4).
- Bull, G., et al.(2016) Evaluating the impact of educational technology, *Journal of Digital Learning in Teacher Education*, 32:4, 117-118,
- CoSN. (2014). Key performance indicators. Available at <http://www.cosn.org>.
- Delgado, A. J., Wardlow, L., McKnight, K., & O'Malley, K. (2015). Educational technology: A review of the integration, resources, and effectiveness of technology in K-12 classrooms. *Journal of Information Technology Education: Research*, 14, 397-416
- Indiana Department of Education (2016). 2016 Tech Plan Data. Available at <http://www.doe.in.gov/elearning/tech-plan-infographics-2016>.
- KC-AERC. (n.d.) 1:1 Technology in Classrooms: Establishing Plans for Evaluation
- Moskal, B. M. (2000). Scoring rubrics: What, when and how? *Practical Assessment, Research & Evaluation*. 7(3). Available at <https://pareonline.net/getvn.asp?v=7&n=3>
- Project RED (2010). The Research. Available at: <http://www.projectred.org/about/research-overview.html>.
- Rockman, S. (2011). Research and evaluation: Creating a cycle of improvement. *Transforming Education for the Next Generation*. Intel. Available at <https://www.intel.com/content/dam/www/public/us/en/documents/education/education-transformation-next-generation-chap-9.pdf>.
- Saettler, P. (1990). *The evolution of American educational technology*. Englewood, CO: Libraries Unlimited.
- Trucano, M. (2014). Ten observations about 1:1 computing efforts around the world. *EduTech Blog*. November 25. Available at: <http://blogs.worldbank.org/edutech/1-to-1-computing-around-the-world>.