Bridging Technology & Instruction

Evaluating Technology Integration

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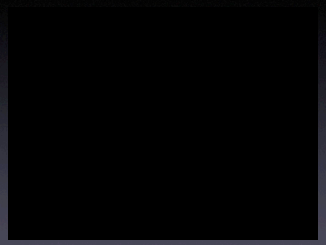
Let's Try Collaboration Today...
Please join our iChat room...

Remember this?

"Her passion and her interest to talk about something that really bothered her and to have it reach every corner of the world was an experience that she'll never forget," says Marco Torres, the teacher who started the technology team at San Fernando High School north of Los Angeles. The school has a population of predominantly poor Latino students. Ninety-six percent have no access to computers at home and 83 percent perform below grade level. So far, about 300 people have participated in the SFETT program, and all of the 80 SFETT participants who graduated from San Fernando have gone on to college. Torres says the program catches students' interest because it focuses on learning by doing and speaks to their fascination with technology and all things digital.

Unfortunately, in order for smaller, dependent countries to survive, many sacrifice their own people for an extra dollar.



National Educational Technology Standards

ISTE NETS*T

"The integration of technology in teaching and learning promises powerful tools for both teachers and learners. The use of technology is a natural, seamless act of selecting the right tool for the learning task."

ISTE NETS Essential Conditions

- Shared Vision
- Access
- Skilled Educators
- Professional Development
- Technical Assistance
- Content Standards
- Student-Centered Teaching
- Assessment
- Community Support

NETS for Teachers
(NETS*T)

What do these mean to you?

I. Technology Operations and Concepts

Teachers demonstrate a sound understanding of technology operations and concepts.

An overwhelming number of teachers at GHS feel they know how to get their laptop to 'do what they want it to do,' and have received enough training on basics.

II. Planning and Designing Learning Environments and Experiences

Teachers plan and design effective learning environments and experiences supported by technology.

36% of teachers never used the computer lab for 'instructional activities' at GES.

III. Teaching, Learning and the Curriculum

Teachers implement curriculum plans that include methods and strategies for applying technology to maximize student learning.

Teachers at RES neither strongly agreed nor disagreed about having enough time and training on how to implement technology into instruction.

IV. Assessment and Evaluation

Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies.

Learning to use *Rubistar* and *Quizstar* was the third-most popular staff development interest at BES.

V. Productivity and Professional Practice

Teachers use technology to enhance their productivity and professional practice.

41% of teachers at GMS feel a strong need in improving their productivity with technology.

VI. Social, Ethical, Legal, and Human Issues

Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PK-12 schools and apply that understanding in practice.

Teachers at GHS believe we could use more computers for student use.

Where are teachers?

- **Novices**? The novice struggles.
- **Users**? Focuses on personal development.
- **Integrator**? Technology used to teach.
- **Facilitator**? Restructures the way concepts are taught.

What does technology literacy look like?

NETS*S Profiles for Students

Grades PreK-2

- Use input devices
- Use a variety of media and technology in directed and independent learning activities.
- Communicate about technology with appropriate terminology.
- Use developmentally-appropriate resources to support learning.

Grades PreK-2

- Work cooperatively and collaboratively with peers, family members, and others when using technology.
- Demonstrate positive social and ethical behaviors when using technology.
- Gather information and communicate with others using telecommunications, with support from teachers, family members, or student partners.

Grades 3-5

- Use keyboards effectively and efficiently.
- Discuss common uses of technology in daily life and the advantages and disadvantages those uses provide.
- Discuss issues releated to responsible uses of technology and personal consequences of inappropriate use.
- Use general productivity tools and peripherals to support personal productivity, remediate skill deficits, and facilitate learning throughout the curriculum.

Grades 3-5

- Use technology tools for individual and collaborative writing, communication, and publishing activities to create 'knowledge products.'
- Use telecommunications efficiently and effectively to access remote information, communicate with others in support of direct and independent learning, and pursue personal interests.
- Evaluate accuracy, relevance, and appropriateness, comprehensiveness, and bias of electronic information sources.

Grades 6-8

- Apply strategies for identifying and solving routine hardware and software problems that occur during everyday use.
- Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse.
- Apply productivity and multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum.

Grades 6-8

- Design, develop, publish, and present products using technology resources that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom.
- Demonstrate an understanding of concepts underlying hardware, software, and connectivity, and of practical applications to learning and problem solving.

Grades 9-12

- Make informed choices among technology systems, resources, and services.
- Analyze advantages and disadvantages of widespread use and reliance on technology in the workplace and in society as a whole.
- Demonstrate and advocate for legal and ethical behaviors among peers, family, and community regarding the use of technology and information.

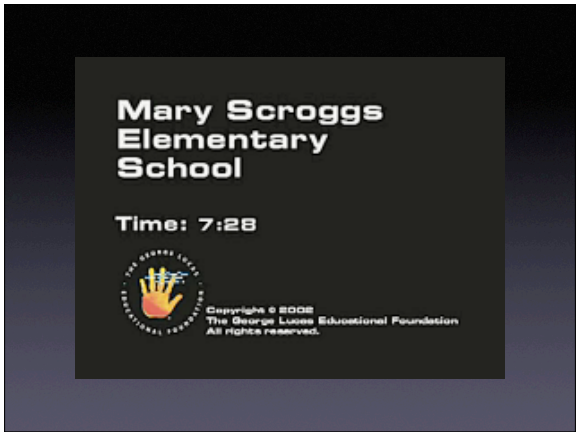
Grades 9-12

- Routinely and efficiently use online information resources to meet needs for collaboration, research, publications, communications, and productivity.
- Select and apply technology tools for research, information analysis, problem solving, and decision making in content learning.
- Investigate and apply expert systems, intelligent agents, and simulations in real-world situations.

Are these covered in a "class" or throughout the curriculum?

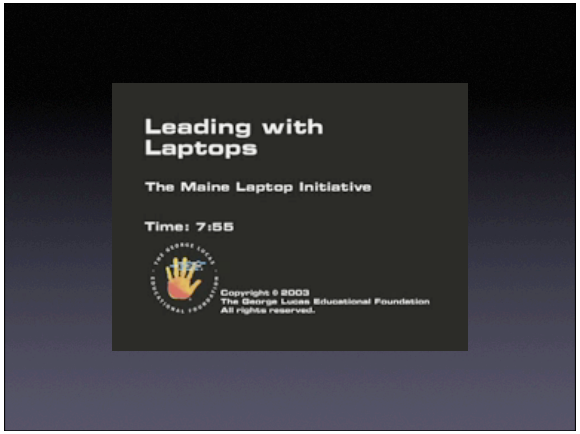
What does technology integration look like?

I'll provide a few clues...



What was it about that school that encouraged integration?

Was there anything that surprised you?



What can we do in our schools that they're doing in Maine?

What was the "coolest" thing you noticed in that video?

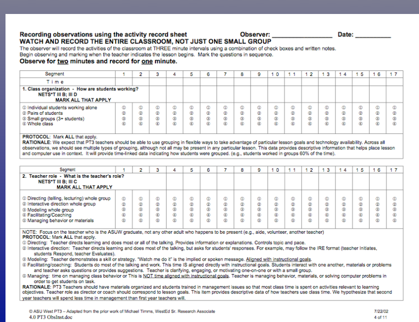
Based on *Jason* and the other videos—has your own perception of "technology integration" changed?

How do we evaluate integration?

Choices!

- PT³ Arizona State University West
- OPTIC Observation Protocol for Technology Integration in the Classroom - NWREL Observation Protocol
- Chesterfield Technology Integration Observation Tool
- LoTI - Levels of Technology Integration

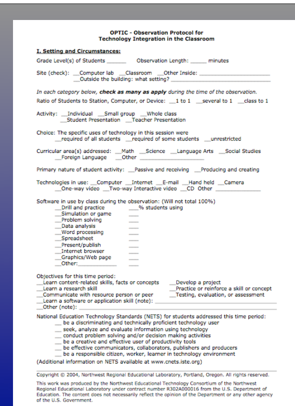
PT³



Recording observations using the activity record sheet

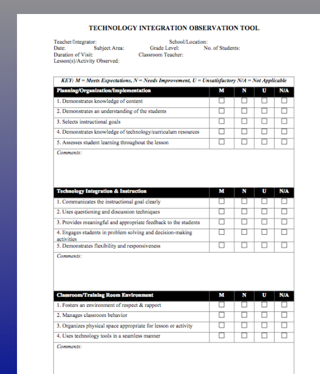
WATCH AND RECORD THE ENTIRE CLASSROOM, NOT JUST ONE SMALL GROUP

OPTIC



OPTIC - Observation Protocol for Technology Integration in the Classroom

Chesterfield



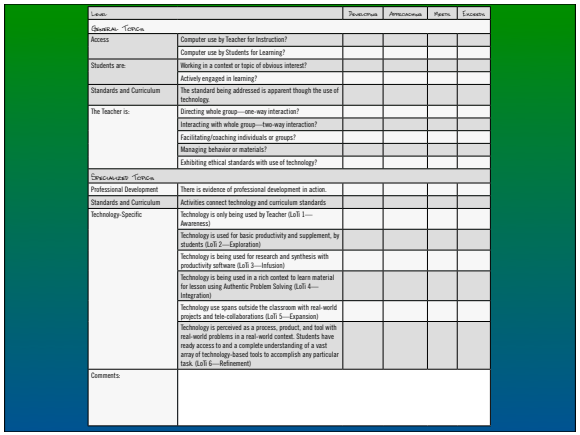
TECHNOLOGY INTEGRATION OBSERVATION TOOL

LoTI

- Awareness—Refinement (0-6)
- Seven levels that track higher-order thinking, disconnected—simulation—authentic learning, and who is manipulating technology
- Majority of teachers are in a 2 (exploration) to 3 (infusion) stage

Can we combine the "standards" of NETS with levels of LoTI?

- NETS provides standards for Students, Teachers, and Administrators
- LoTI offers a progressive continuum of integration
- Teachers are constantly changing their relationship with technology as they refine teaching, gain experience with new technologies, and expand their personal digital culture (PDC).



Level:		Novice	Apprentice	Practitioner	Expert
General Topics					
Access	Computer use by Teacher for Instruction?				
	Computer use by Students for Learning?				
Students are:	Working in a context or topic of obvious interest?				
	Actively engaged in learning?				
Standards and Curriculum	The standard being addressed is apparent though the use of technology				
The Teacher is:	Directing whole group—one-way interaction?				
	Interacting with whole group—two-way interaction?				
	Facilitating/coaching individuals or groups?				
	Managing behavior or materials?				
	Exhibiting ethical standards with use of technology?				
Specialized Topics					
Professional Development	There is evidence of professional development in action.				
Standards and Curriculum	Activities connect technology and curriculum standards				
Technology-Specific	Technology is only being used by Teacher (LoTI 1—Awareness)				
	Technology is used for basic productivity and supplement, by students (LoTI 2—Exploration)				
	Technology is being used for research and synthesis with productivity software (LoTI 3—Infusion)				
	Technology is being used in a rich context to learn material for lesson using Authentic Problem Solving (LoTI 4—Integration)				
	Technology use spans outside the classroom with real-world projects and tele-collaborations (LoTI 5—Expansion)				
	Technology is perceived as a process, product, and tool with real-world problems in a real-world context. Students have ready access to and a complete understanding of a vast array of technology-based tools to accomplish any particular task. (LoTI 6—Refinement)				
Comments:					

Shared Vision

- Do administrators and teachers agree as to what should be taking place in the school with regards to technology use?
- Do students have regular access?
- Are expectations coming from the top?

Access

- Do teachers have ready-access to technology? Yes.
- Do students?
- Are there bottlenecks with regard to cart/lab use?

Skilled Educators

- Is technology being used to target instructional goals?
- Does the use of technology lead to student achievement?

Professional Development

- Are opportunities provided for professional development?
  - Technology Classes, Coaching
  - Lesson Planning
  - Online opportunities
  - Communication (newsletter, staff meetings, etc.)

Technical Assistance

- We received good marks on technical assistance (network, broken machines), but...
  - Teachers marked "technical help" as their second-largest need with regard to technology integration

Student Centered Teaching

- This is the hardest one to change—but changing pedagogy is the key to more effective use of technology.
- How can we encourage this type of lesson planning and building?

Assessment

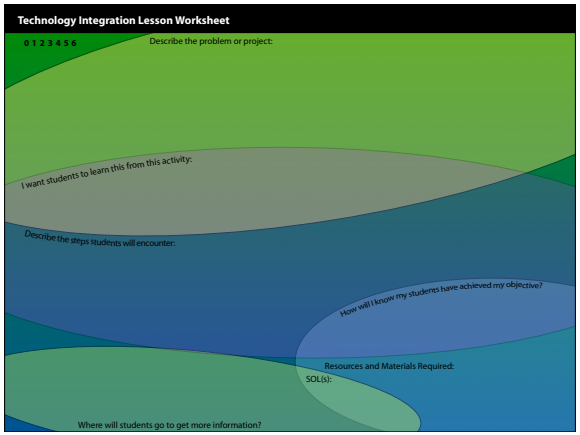
- Is integration "working?"
- Can technology help in assessment (i.e., marking period tests, online quizzes, etc.)?

Community Support

- Communication
- PowerSchool
- Showcase our using of technology
  - website, blogs
  - technology in use during visits by parents
- Focus on "real world" settings

We're Supporting Integration through...

- Classes and Workshops
- Goal Planning
- Communication (TechTimes)
- In-house Mentors (Berry, Spoonhower)
- How else? by Leadership and Example



- LoTI Framework
- Observation Form
- "What Technology Leaders Need to Know"
- Let's share... PDF of "Great Integrated Lessons"