Teaching Elementary School Teachers to Integrate 21st Century Teaching Strategies

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Importance of 21st Century Education

- STEM jobs are increasing exponentially
- 2008: Two job openings per qualified person
- Students must prepare to:
  - Use modern tools to solve problems
  - Keep up with advancements
  - Compete for available jobs
Question #1

What do teachers need to do to be 21st Century Educators?
A. Use modern tools in their own life.
B. Teach with modern tools.
C. Keep up with advancements in technology.
D. All of the above.
21st Century Educators

- Use modern tools to solve problems
- Keep up with advancements
- Teach with modern tools

- Goal: Prepare students to compete
The Client

- Elementary School in Hawaii
- Title 1 (Financially disadvantaged students)
- Technology Committee formed for Future Ready Program
- School’s Technology Vision - Use technology to:
  - Explore
  - Collaborate
  - Grow
  - Innovate
Web 2.0 Tool

- Support Language Arts Curriculum
  - Word Processing
  - Supports Multimedia
  - Online Collaboration
- Web 2.0 Tools Considered
  - Edmodo
  - Classroom 2.0
  - Google Apps For Education
Google Apps For Education

- Word Processing
- Supports Multimedia
- Online Collaboration
- Device Agnostic
- Online Scheduling
- Online Storage
- Accountability Tools
- Language Translation Tools
Online Module Commissioned

● Goal
  ● Teach Beginners
  ● Focus on Drive, Calendar, and Documents

● Benefits
  ● Frees Technology Teacher
  ● Consistent training quality
  ● Flexible training time
Instructional Design Project

- Purpose Statement
  - Develop online module
  - Evaluate the effectiveness of online module
  - Help teachers implement 21\textsuperscript{st} century strategies
Literature Review (GAFE Effect on Students)

- **Lin & Jou, 2013**
  - 87.5% reported positive feelings about GAFE
  - 85% used GAFE to communicate with peers
  - 75% used GAFE to communicate with teachers

- **Nevin, 2009**
  - Students inspired peers to use GAFE
  - Students pressured teachers to use GAFE
  - Control group asked for GAFE account
Literature Review (Engagement)

- Goh, Dexter, & Self, 2014
  - Social interaction leads to strong learning
- Fisher & Baird, 2006
  - Simulated real world situations increase engagement
- Cho & Rathbun, 2013
  - Unengaging trainings lack interactivity
Literature Review (Knowledge Retention)

- Cho & Rathbun, 2013
  - Active participation leads to knowledge retention
- Schneckenberg, Ehlers, & Adelsberger, 2011
  - Simulated real world situations increase retention
- Chia-Pin, Ying-Tien, Chin-Chung, 2010
  - Knowledge retention leads to confidence
  - Confidence leads to motivation to implement
Question #2

What form of learning do you prefer?
A. Synchronous classroom learning
B. Synchronous online learning from a desktop or laptop
C. Asynchronous online learning from a desktop or laptop
D. Asynchronous online learning from a smartphone
Literature Review (Mobile)

- Wang & Shen, 2012
  - Smartphones in learning has increased
  - Use pictures, audio, and video
  - Text should focus on key points
  - Text should summarize
Content Development (Module Sections)

1. Logging into GAFE
2. Uploading a file
3. Organizing files
4. Sharing a file
5. Scheduling events
6. Creating a Google Document
7. Using revision history
8. Collaborating with others online
Designed Assessments

- Pre, Embedded, and Post Tests
- Multiple Choice
- Google Forms- Platform
- Flubaroo- Scoring
Applicational Activities

- Application of learned skills
- Users interact with actual apps
- Asynchronous interaction with other users
- Boosts memory through interaction
Module Designed

- Site designed with Weebly
  - User friendly
  - Click and drag design
  - Converts to mobile view
  - Coding is optional
- Banners designed with Pixlr
  - Free version of Photoshop
  - Minimalist approach

Google Drive
Keep everything. Share anything.
Content Delivery

- Slideshows (Weebly Tool)
  - Step-by-step
  - Visual guide
  - Uses less bandwidth than video
- Audio Clips (Soundcloud)
  - Instructor explains procedures
  - Users can read along
  - Uses less bandwidth than video
Question #3

How do you react to learning about new technology?
A. I love it
B. I like it
C. I am apprehensive
D. I am intimidated
Audience

- Elementary School Teachers and EAs
- Age Range: 30-65 years old
- Few technological skills
- Intimidated by new technology
- Interested in GAFE
  - Heard success stories
  - Witnessed training students
Hardware Supports

- MacBook Pro
  - Uniform device
  - Uniform operating system
- Earbuds
  - Listen to audio
  - Different pacing
Personnel Supports (Instructor)

- Provide help:
  - Web browsing
  - Finding navigational buttons
  - Playing SoundCloud files
  - Manipulating Slideshows
Personnel Supports (Technology Coordinator’s Assistant)

- Provide Support:
  - Troubleshoot network connectivity issues
  - Reset forgotten Google passwords
User Feedback

- Content easy to understand
- Visual slideshows were praised
- Audio files were appreciated
- Surprised what GAFE can do
Module Changes

- Module Navigational Tutorial Page
  - Navigate module pages
  - Play SoundCloud files
  - Manipulate Slideshows
Things I Learned

- Take advantage of audio capabilities
- Use multiple visual representations
- Interactivity is engaging and effective
- Content organization is key
- People won’t teach without confidence
Future Steps

- Continued use of GAFE module
- Extend GAFE module topics
  - Google Forms
  - Google Sheets
  - Google Presentation
  - Google Classroom
- Module site will become online course
  - Each topic will be a module
- Redo module’s navigational tabs
  - A tab for each Google App
Any Questions?