Effective, Appropriate and Intentional Use of Technology Tools in Early Childhood Classrooms

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Early Learning Community
Pacific University College of Education

Wednesday, February 20, 2013
Effective, Appropriate & Intentional Use

Introductions

Teacher - 35 years
Fellow: Berglund Center for Internet Studies
Director: Child Learning & Development Center
Professor: Pacific University College of Education

Masters in Teaching
Kindergarten Teacher: ELC
Early Childhood Educator - 7 years
Presenter NAEYC Annual Conferences

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Early Learning Community

Exemplary ECE Teaching & Learning Environment
Pacific University College of Education
Forest Grove, Oregon
http://fg.ed.pacificu.edu/elc

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“Tonight, I propose working with states to make high-quality preschool available to every single child in America.”
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Presidential Mandate

It is our opportunity to rise to the moment.
Effective, Appropriate & Intentional Use
High Quality Early Childhood Ed.

- Learning through exploration & play,
- Developmentally appropriate manipulatives
- Well-prepared and paid, reflective teachers
- Aesthetically embracing classroom
- Where technology may be an option
Educational Technologies have always been:

- Reflective of scientific innovation
- Based on learning theory
- Framed by pedagogy
- Implemented with intentionality by masters
Supports:
child initiated, 
child directed, 
teacher supported, 
intentional play with digital devices
Effective uses of technology and media:
• Are active & hands-on
• Are engaging & empowering
• Give the child control
• Provide scaffolds for learning
• One of many options
When used “appropriately”

• playful, foster co-engagement
• extend learning
• reveal to children
• support not supplant essential activities
• help children save, document, revisit, & share
• support creativity, exploration, & active play
Intentionality is Key:

• Consider your goals
• will technology extend learning in ways not otherwise possible?
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Technology Reflection

In each Learning situation ask:

• What is my goal or objective
• What learning tools best supports that goal
• How can the tools be used appropriately
• What will tell me they are being effective
• How can we use them intentionally
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Technological Tools

Intentionality is key

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Supporting Literacy

SmartBoard: 
Fostering 
Authentic 
Literacy

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Supporting Literacy

Requires

- Interactive Whiteboard
- Computer
- Projector
- Smart Notebook software
- White boards
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Supporting Literacy

Using Interactive Whiteboard

• Authentic letter
• Strategic words
• Enticing graphics
• Student leader
• Active engagement

Dear Whales,

Today is Tuesday.

Yesterday ___ Monday

Today is our ___ (ninety-third) day of school.

___ can see fog.

We will ___ to the library today.

We will get a ___ tool in Writer’s Workshop today.

Love,

Ms. Aja and Ms. Lacey

February 5, 2013
Dear Whales,

Today is Tuesday.

Yesterday was Monday.

Today is our 93rd (ninety-third) day of school.

I can see fog.

We will walk to the library today.

We will get a new tool in Writer's Workshop today.

Love,
Ms. Aja and Ms. Lacey
Evaluating Interactive White Board

- Increases engagement
- Empowers students
- Fosters discussions
- Provides scaffolds
- Enables saving & revisiting
- Not inexpensive
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Supporting Literacy

Storykit App: Empowering Students Through Storytelling
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Supporting Literacy

Requires

• iPad, iPhone, or iPod Touch

Using StoryKit

• Create story
• Illustrate or capture photo
• Type or write captions
• Record Audio
• Share
Audio Recording:
“A long time ago my sister and me went to the ELC and it’s the one we’re in right now and when she came out a lot of times she would pick me up and we would talk together.”

http://iphone.childrenslibrary.org/cgi-bin/view.py?b=pzgwdyl2khn7nt7rz2im
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Supporting Literacy

Evaluating StoryKit
• Inspires creativity
• Empowers stories
• Extends learning
• Supports sharing
• Creates connections
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KidPix: Encouraging Creativity & Collaboration
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Supporting Literacy

Supports & Extends
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Supporting Literacy

Requires
• Computer
• Kidpix Software
• Interactive White Board (optional)
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Supporting Literacy

Using Kidpix
- Small groups
- Large canvas
- Create & play
- Modify & revisit
- Share
Evaluating Kidpix

• Inspires hands-on learning
• Encourages creativity
• Invites self-expression
• Extends literacy
• Encourages dwelling
• Allows gross-motor movement
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Supporting Literacy

Storyography:
Empowering Children’s Voices through multimedia storymaking

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Storyography

- Storymaking emerges from imaginative play
- Student directed & documented narrative
- Supported by intentional teacher

Requires

- Close teacher scaffolding
- Bookbinding materials
- Digital camera, computer, printer
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Supporting Literacy

Process:

- Student creates
- Teacher transcribes
- Student photographs
- Teacher prints
- Book constructed
- Digitized?
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Supporting Literacy

Student Creates
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Supporting Literacy

Story Transcribed
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Supporting Literacy

Teacher Scaffolding
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Supporting Literacy
Video
Photographing Each Image
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Supporting Literacy
The dragonfly is guarding the house.

He doesn’t want anybody to come because the baby horse is eating his food.
Evaluating Storyography
• UDL with adaptive scaffolds
• Effectively inspires literacy
• Extends experiences
• Intentionality & creativity
• Sharing & revisiting
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Supporting Science

Microscopes: Empowering New Perspectives

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Supporting Science

Requires

• Microscope: Wired or Wireless
• Computer Screen
• Free Software
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Supporting Science

Using Digital Microscope

• Indoors and out
• Science center
• Answer specific questions
Microscopes in the Classroom
• Effective in sparking wonder
• Extends authentic learning
• Empowers exploration
• Fosters thinking
• Inherently motivating
• Not Inexpensive
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Supporting Numeracy

Virtual Manipulatives:
Investigating Mathematical Concepts

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Supporting Numeracy

Using Virtual Manipulatives

- Java-based math tools
- Voting capabilities

Requires
- Computer with internet
  (http://nlvm.usu.edu/en/nav/vlibrary.html)
Evaluating Virtual Manipulatives

- Playful, collaborative learning
- Encourages problem-solving
- Extends discussions
- Empowers students
- Sometimes top-down

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Supporting Numeracy
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Supporting Numeracy

Foldify:
Exploring Dimensionality
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Supporting Numeracy

Using Foldify

• Design a structure
• Print
• Cut and fold
• Play

Requires

• iPad
• Foldify App
Effective, Appropriate & Intentional Use

Supporting Numeracy

Evaluating Foldify

• Promotes creativity
• Fosters collaboration
• Extends numeracy
• Inspires play
• Encourages problem-solving
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Supporting Social Studies

Google Earth: Exploring Our World

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Supporting Social Studies

Requires
- Google Earth Software
- Computer with Internet

Using Google Earth
- Virtual travel
- Photos, videos
- Zoom-in feature
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Supporting Social Studies

Evaluating Google Earth

- Provides hands-on experiences
- Enables unique, 3D perspective
- Encourages exploration
- Inspires research
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Supporting Social Studies

MapSkip: Sharing Our Adventures
Using MapSkip

- Explore new places
- Upload photos & stories

Requires

- Computer with Internet
  (www.mapskip.com)
- Digital camera (optional)
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Supporting Social Studies

Flat Stanley: Cultivating Connections
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Supporting Social Studies

Flat Stanley Process
• Create flat people
• Penpal exchange
• Maps, photos, letters

Requires
• Digital Cameras
• Internet Connection

(www.flatstanley.com)
Evaluating Flat Stanley & MapSkip
• Empowers exploration
• Invites story sharing
• Creates connections
• Encourages creativity
• Sparks interest
Tips for Introducing iPads

• Introduce an app at a time
• Allow ample time to explore
• Support collaborate work
• Encourage intentional use
• Create “Tech Expert” team
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Intentional Use of iPads

Name: ____________________

iPad Plan

1. Which program will you be using?

2. What will you be learning, practicing, or researching?
   - Reading
   - Writing
   - Science
   - Math
   - Researching
   - Art

3. Will you be collaborating with a partner?
   - Yes
   - No
Things to Look for in an Educational Technology:

- Embodies Universal Design
- Utilizes Developmentally Appropriate Features
- Extends Classroom Experiences
- Requires Active Engagement
- Scaffolds Adaptive Complexity
- Encourages Revisiting & Sharing
- Models Multiple Diversities
- Empowers Exploration & Creativity
- Fosters Thinking & Problem Solving
- Supports Playful Use
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Best Practices Database

Select an app to read materials and to see images and video of powerful pedagogical practices connected with each device.
Select an app to read materials and to see images and video of powerful pedagogical practices connected with each device.

http://fg.ed.pacificu.edu/cldc/
Digital Microscopes

Description
One of the great joys of early learning occurs when young children experience seeing the world in new and unexpected ways. Digital Microscopes can provide such a perspective. They empower children's insight when they are used as a manipulative tool that provides them with perspectives that are engaging and unique.

Most digital microscopes must be connected to a screen such as a computer. The best way to begin to use a digital microscope is to simply turn it on and hand it to a child. Almost without exception children (of all ages) will point it at their bodies (ear, eye, tummy...) and be fascinated with what they see. Providing learners with items that contain interesting textures and surfaces will allow them to connect their sense of touch with the image of the surface they are sensing.

Our preferred tool is a ProScope HD microscope. These can be connected to a computer in a classroom, at an exploration station, or outside in the natural environment. This microscope not only displays high definition digital images on the computer screen, but with the push of a button, it can capture photographs of what is being displayed for later discussion, story writing, or posting on a blog.

Suggestions for use
Classroom - Set up a computer (desktop or laptop or tablet) with HD software and microscope. Orient screen so that it is easy for the students to manipulate the scope and view the screen simultaneously. The scope can be particularly powerful when used for explorations of the human body as there is nothing more concrete than one's own body.
Scope is also excellent for explorations of all manner of surfaces including:
- Natural materials such as rocks and minerals, shells, wood, insects, and plants such as molds.
- Man made materials such as Metals, plastics, fabrics, various types of papers,
- Interesting small details such as dates on coins or bills, watch parts, facets of jewelry.
Effective uses of technology are:

- Give the child control
- Active, hands-on, engaging, & empowering.
- Provide scaffolds to support tasks
- One of many options to support learning
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Conclusions

When considering using a tool:

• Determine student interest & need
• Envision what will be learned
• Recognize what is appropriate
• Be intentional and deliberate
• Support not supplant essential activities
• Have fun
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Educator Resources

- fg.ed.pacificu.edu/cldc/techtools.html
- http://fg.ed.pacificu.edu/elc/
- http://teccenter.erikson.edu/
- www.techandyoungchildren.org/
- http://childrenstech.com/
- http://bcis.pacificu.edu/home.php

Image Credits: President Obama: www.csmonitor.com, chronicle.augusta.com
Foldify: www.wired.com
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THANK YOU