Technology in Early Childhood

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Importance/Relevance

- Ways to use technology in early childhood classrooms:
  - Educational apps on iPads, such as writing letters and numbers, or matching words in a category, that promotes academic learning
  - Use technology to work on the skill of staying on task: children will often pay more close attention to technology rather than a book or the teacher, so using the computers and iPads in addition with traditional classroom tools will contribute to the acquisition of skills such as staying on task, working hard, and completing something
  - Smartboards used in place of (or along side with) traditional white boards can get children used to using technology, and is always readily available to use with the internet, if a teacher wanted to show her class pictures or videos, or use interactive games where the students could walk up to the board and use it themselves
Piaget

• Key Theory 1: Children are active and motivated learners

• “Children actively seek out information.” (McDevitt, Ormrod p. 196)

• Technology provides endless opportunities to build new skills such as writing and reading, and kids can discover new ideas such as new animals, places, people, etc.
Piaget

• Key Theory 2: Children adapt to their environment through the processes of assimilation and accommodation

• “Children’s developing schemes allow them to adapt in ever more successful ways to their environment.” (McDevitt, Ormrod p. 197)

• Technology is an integral part of our society, so it is important that young children are exposed early on to technology so they can adapt and assimilate into a technology driven world
Piaget

• Key Theory 3: The process of equilibration promotes increasingly complex forms of thought
• “In many stances the end result is better integrated, more inclusive, and more stable set of schemes and operations than children had previously.” (McDevitt, Ormrod p. 198)
• Challenging young kids with something they may not have been exposed to before, like technology, can throw them into the process of equilibration, and help them learn and develop new skills
Piaget

• Preoperational Stage
• “Language skills virtually explode during this stage.” (McDevitt, Ormrod p. 201)
• Apps and games that increase language skills and vocabulary can expose children to new words and concepts and expand their learning ability
• Key Theory 1: Thought and language become increasingly interdependent in the first few years of life
• “When thought and language first emerge, children often talk to themselves, a phenomenon known as self-talk.” (McDevitt, Ormrod p. 217)
• App to aid in the development of self-talk:
  – Language Builder—this app has children talk to the iPad to work through problems, video clips, or situations, and records their voice so the child can hear back their voice and what they said. This helps the development of self-talk and is developmentally age-appropriate
Vygotsky

• Scaffolding
• “Scaffolding is often used to describe the guidance or structure provided by more competent individuals to help children perform tasks in their ZPD.” (McDevitt, Ormrod p. 223)
• App that provides scaffolding for children:
  – Pre-K Spell HD– this app is a spelling primer that helps children scaffold the concept of letters and spelling. Children learn to spell simple words through picture and color association along with a narration the kids can connect with
• WordGirl Superhero Training
  – Allows children to practice their super hero skills by learning new vocabulary words, using their logic, memory, and reflexes in order to help WordGirl face a variety of villains
  – Fun, skill building, engaging, academically challenging, but there are different levels
Apps & Games

• Children in the preoperational stage, as discussed by Piaget, are not developmentally ready to perform mental operations. They can complete physical operations— which is good for using iPads in the classroom because they are hands-on and are developmentally appropriate for young children

• Letterschool app for iPads
  – Kids use their fingers to trace letters and numbers, which is a physical activity and is developmentally ready, according to the theory of egocentricism and works on writing skills
iPads

- [http://www.youtube.com/watch?v=dFb2WmaRWPE](http://www.youtube.com/watch?v=dFb2WmaRWPE)
- This is a video about how children (as young as 1 year old) can navigate through games and apps on an iPad before they can even talk or walk.
Risks of Using Technology in Early Childhood Education

• It is believed by many that computers and other means of technology are being introduced to children too early in their development. It is said that putting too much emphasis on technology in schools and in the home can negatively affect the child in multiple ways:
  • Easy access to information could lead to a lack of persistence, ingenuity, tenacity, social adeptness and hard work.
  • As explained by Piaget, children within their preoperational stage tend to be unable to sit still and learn best by their own spontaneous exploration of things in their environment. This is not a requirement that is met by sitting in front of a computer screen.
  • As mentioned by Vygotsky, children in early childhood cannot fully realize their abilities without the help of adults through methods such as guidance and modeling. This stage requires strong emphasis on social interaction (with peers, cooperative learning exercises).
Risks continued...

• Another downside to putting strong emphasis on technology is the fact that other developmental needs that are not centered on the technology tend to be ignored.
  – Such as physical play, art, music, dance, learning social skills, moral values, and diversity.


• https://sites.google.com/site/tourosgottesman/theories-of-early-childhood

• http://educationnext.org/much-too-early/
Risks continued...

• Studies have been performed that show direct correlations between various health and development issues and media:
  – Childhood obesity from lack of physical exercise and thoughtless snacking, negative effects on attention span and sleep patterns, visual problems, Repetitive Strain Injuries (RSI), anti-social behavior from being alone on the computer instead of interacting with peers, distractibility from a need for constant external stimuli instead of being a creative thinker, problems with bone and muscle development do to slouching and bad posture while sitting at the computer, lack of language skills due to anti-social behavior (not interacting with peers), lack of imagination and trouble generating their own ideas and images.
  – Pre-structured computer programs require simple responses instead of encouraging independent thinking from the child.
Risks continued...

• Educators who lack technology skills and/or digital literary education are at risk for making inappropriate choices by using technology in ways that can negatively impact learning and development.


• [http://www.cyberlithicum.org/technology.pdf](http://www.cyberlithicum.org/technology.pdf)
Promoting a Positive Developmental Outcome

• Prepare all children in technology
  – Internet skills, educational platforms, devices

• Provide technological devices to students who may not be able to afford it
  – Technology is becoming easier to afford
Promoting a Positive Developmental Outcome (cont.)

• Advise about cyberbullying
  – “On average, about 24% of the students... have been the victim of cyberbullying at some point in their lifetime.” (cyberbullying.us)
  – “Internetiquette”

• Get parents involved!
  – Keep parents in the loop
  – Let them know how they can be involved
  – Promote advisement
Funding

• Many teachers want to integrate technology more, but find it hard to obtain funding
• Luckily, there are grants and organizations for teachers to use!

Hearlihy-FTE Grant and Hewlett-Packard Grants:
http://www.fundforteachers.org/funding-opportunities/grants-technology.php

Assortment of Grants and their Deadlines:
http://education.fcps.org/trt/grantscontests
Teaching Resources

• Apple
  – Provide resource for teachers on implementing Apple products in their classroom as well as share stories of the importance on technology
    http://www.apple.com/education/

• Smart Tech
  – Help train teachers in new technologies as well as provide tips and even funding
    https://smarttech.com/Resources/SMART+education+programs
References