Old Mcdonald Had an App

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Technology in the Classroom

How often children use technology in the classroom?
According to the Early Childhood Technology Today Survey more than 50% of teachers as well as administrators said children use technology 5 days a week in their classroom and less than 10% of them said children use technology less than once a week.

How child uses technology in the classroom?
35% - a balance of half teacher directed and half child initiated learning activities
28% - mostly child initiated and partly teacher directed
23% - mostly teacher directed and some child initiated

Vygotsky's Theory

Social Development Theory
- social interaction plays a fundamental role in the development of cognition

Sociocultural Approach
- places more emphasis on culture affecting and shaping cognitive development

Zone of Proximal Learning
- the range between what a child can achieve on their own and what they can achieve with the

Guided Participation
- child engages in tasks aided by an adult
Piaget’s Theory

Developmental Stage Theory
-the nature of knowledge and how humans come gradually to acquire, construct, and use it

Believes cognitive development is a stage process in children

- **Sensorimotor Stage**: infants construct knowledge of the world by coordinating experiences with physical interactions with objects
- **Pre-Operational Stage**: children’s increase in play and pretending; child can’t see things from different points of view
- **Concrete Operational Stage**: characterized by the appropriate use of logic; child’s thought process becomes more mature and “adult-like”
- **Formal Operational Stage**: intelligence is demonstrated through the logical use of symbols related to abstract concepts
Does adding a computer to a kindergarten environment enhance children’s creative thinking?

Shawareb answers this question by comparing both Vygotsky’s and Piaget’s view on child development.

“Even though, the effects of the technological revolution are visible in classrooms everywhere... there is still much to learn about how children use computers in order to understand the contribution they can make to young children’s social, emotional, physical, and cognitive development.”
Article Continued...

- **Vygotsky** believed that developmentally appropriate software in computer use among young children serve as a tool to scaffold cognitive performance and concept development
  - “Computers, by providing assistance to children’s learning, act as scaffolding agents and lead to increased cognitive development.” (Shawareb)
  - “Children exposed to developmentally appropriate software showed significant gains in cognitive skills, creativity, and self-esteem.” (Haugland)

- **Piaget** believed that due to the complexity of computer softwares, children should be intellectually mature or reach the concrete operational stage (seven years old) before using computers
Example of using an app in the classroom

- Joanie is a typical little 4-year-old girl living in Casper Wyoming. Joanie has started her first year of preschool this year and attends a very technologically advanced preschool. In her class she uses an ipad daily. The teacher has Joanie and her classmate’s open a math app called Feed the Frog. In this app the children help the frog collect flies because he is hungry. If the frog eats too much he becomes sick. The app depicts exactly how many flies the frog is hungry for with a number above the frog and an audible clue. The children have to use their preoperational thinking to decide how many flies to feed the frog and understand when to stop so that he wont get sick. At first Joanie’s teacher uses scaffolding to help her and her classmates get the idea of what to do. Then when the children understand and recognize the number to flies correlation she then leaves the kids to learn on their own. This method lets the children develop their problem solving and cognitive thinking skills by using a fun interactive activity.
Risk Factors of Technology in the Classroom

A risk is that computers or any other technology will be used only to reinforce academic skill acquisition, and other important developmental needs will be ignored.
- Developmental needs such as physical play, outdoor exploration, nature, art, music and dance. Also, learning specific social skills and moral values, and experiencing diversity.

Another risk is that children will be receiving information very easily and fast. This may prevent children from developing persistence, tenacity, and hard work.

Teachers may also use technology in a developmentally inappropriate form. For example it may just be used for drill and practice purposes. This is not a good way to implement technology into a curriculum.

Positives of Technology

- Given the fact, children do not all learn the same way or at the same pace, technology accommodates this through the use of apps and programs, which adapt lessons to the child’s own personal needs.
- According to Piaget, pretend play helps children to practice their newly acquired schemes and helps them to understand other roles in society. Technology widens the possibilities of roles and situations they can participate in, if the lack of physical items are available.
- Through interactive programs the child is able learn information in a fun visual way as opposed to be presented a list of facts vocally.
- It is important to remember the use of technology should be used to help a child process information in a way which benefits them, not to accelerate the natural development process beyond their capabilities.

They say childhood is the most fruitful stage and that parents and caregivers should take into account the advantages of using computer software as an entertaining and instructive tool.