Effective Use of Computers with Young Children
Linda J. Burkhart

Put Child in Control
- child directed software
- moves at child's pace
- accessible to children with limited motor control
- two switch step scanning for simple cognitive interface

Engage the Child Cognitively
- two switch software where each switch has a distinct function
- trial and error learning
- logical consequences to the child's efforts
- use of patterns and use of surprise
- experiences with familiar objects and tasks
- active vs. passive learning

Provide Opportunities for Choice Making
- holds attention
- increases opportunity for control and cognitive engagement
- further expands awareness of consequences
- error-free learning environment

Provide Rich Language Immersion
- voice-output feedback describing child's actions
- simple but functional language
- sound play
- predictable repeated lines with periodic surprise lines to go along with the action
- relates 3 dimensional experiences with objects and toys to 2 dimensional screen

Provide Opportunities for Joint Attention and Shared Interaction
- opportunity for adult - child interaction
- encourages pointing, showing and shared enjoyment
- opportunity for the child to take the lead and the adult to follow along and support
- opportunity for child to child interaction

Facilitate Communicative Interaction
- can allow the child to express ideas
- can provide voice-output and visual information that may be used to communicate to someone else.

Provide Multi-Sensory Feedback with Consistency and Repetition of Language and Cognitive Concepts
- virtually manipulate objects to develop cognitive skills
- immediate feedback to child

- child can control repetition as desired
- emerging literacy skills
- emerging mathematical skills or sequence, numbers and patterns within a play context - not adult directed

Ensure Cognitive Simplicity
- present concepts in small steps
- immediate success helps child stay active and alert and stay out of a random "guessing mode" or "trying to please mode" which could lead to inaccurate or confusing consequences (This may help the child build correct foundational pathways in the brain and may help the child focus on learning concepts as opposed to coping strategies.)

Equalize Opportunity to Interact with Peers and Siblings
- opportunity to be included

Provide Experience with Emerging Literacy
- Print rich
- talking highlighted text
- Phonetic play and rhyming songs and stories

*Doesn't replace interaction with others
- often the young child does better playing with someone than independently using the computer

*Doesn't replace the need for manipulatives
- research is showing that children learn most effectively from computers when used in conjunction with manipulatives.

Computer Inputs for Young Children

Touch Monitors
- types: add on or integrated into the screen
- advantages:
direct
cognitive simplicity
- considerations for use
single vs. multiple finger touch
distance from monitor surface (angle of view)
settings: standard best - but may need a slight tap to activate
accidentally going out of active window (kid feature on some software to restrict cursor)
motor control required to reach to a vertical plane

Switches
- types of interfaces
switch interface
adapted mouse
IntelliKeys / IntelliSwitch switch jacks
mouse house
- considerations
single switch limited to cause and effect unless you introduce scanning (which is a fairly difficult concept)
two switches can be used through Intellikeys with IntelliPics and Clickit
- position and placement of switches

within vision
auditory feedback (click)
tactile feedback and boundary bumpers
mounted on monitor
slant board (cover wires with Velcro)
pictures on switches related to software program
- software needs to give clear, immediate feedback
- two switches two functions
- scanning (beginning level)
2 switch step scan
avoid automatic scanning at first

<u>IntelliKeys or alternative keyboards</u>
- advantages: more control and more choices
- begin with switches to establish clear concept of pressing picture
- raised surface on Intellikeys with hot glue dots
- tactile symbols on carpet square
- consider position and angle of keyboard to monitor
- consider delay in response of software due to software, conflicts or hardware
- use of Intellikeys with IntelliTools Classroom Suite

<u>Keyboard</u>
- pig or ping pong ball on key with sitck-tac
- stickers or fake earrings
- flap switches
- keyguard

Linda J. Burkhart
www.Lburkhart.com
fax: (410) 795-8834
linda@Lindaburkhart.com

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Linda J. Burkhart / linda@Lindaburkhart.com
http://www.Lburkhart.com