

Ergonomic Issues for Classroom Computing

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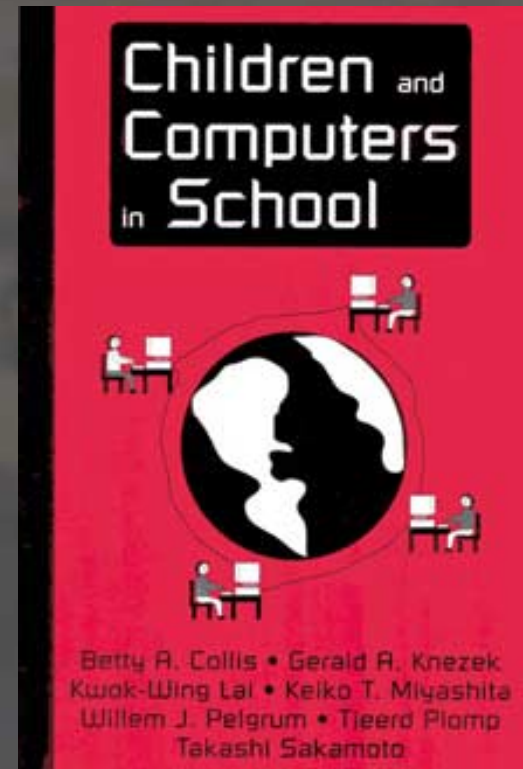
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Computers in Schools

- Rapid proliferation of computers in schools.
- Primary focus on hardware and networking.
- Secondary focus on educational software and curriculum.
- Laptops increasingly being favored over desktops.
- Goal of ubiquitous computing.
- Teaching training/technology integration lags.
- Physical ergonomic issues seldom considered.



Laptop Computer Use

- In 1996, Microsoft and Toshiba began a Laptop Pilot Program at 52 schools across the United States in which students have 24-hour access to laptop computers and the computers are fully integrated into classroom instruction. The pilot program was designed to demonstrate that providing every student within a classroom with access to "real world" business tools would produce substantial educational benefits.
- No consideration of Ergonomic Issues



(<http://www.microsoft.com/education/aal/research.asp>)

Ergonomic Issues

- Children's posture, age
- Computer design
 - desktops, laptops, pda's
- Furniture design
- Backpack design
- Time management
- School and home use
- Effective Ergonomics Information



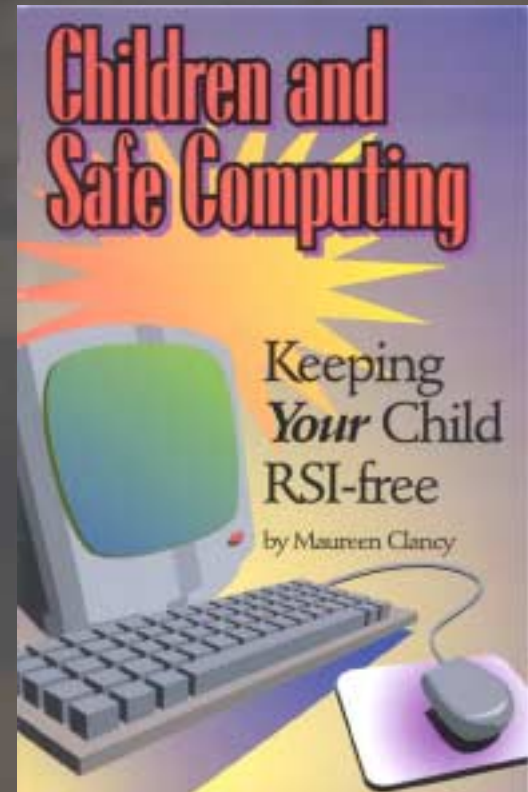
Ergonomic Design Research

- How 'ergonomic' are the different hardware and furniture designs?



Ergonomics Information Research

- What is the most effective way of delivering ergonomics information?



Computer Use Research

- How can we best structure the time that children use computers?
 - Curriculum issues
 - Rest-break issues
 - Software timers
 - Time limits



(<http://www.microsoft.com/education/aal/research.asp>)

Ergonomics Education Research

- How can we most effectively present parents and children with appropriate ergonomics information?



Ergonomics Programs Research

- “Get Techfit” program – Blackwell Elementary School, WA and Cornell University.
 - Classroom instruction on computer ergonomics
 - Class exercises on computer ergonomics
 - Parents booklet on computer ergonomics
 - Web-based program information
 - Teacher commitment



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Good or bad?

- What is right or wrong with these pictures?



Extract from an Ergonomics
slideshow prepared by children for
children at Blackwell Elementary
School, WA.

Good or bad?

- What is right or wrong with these pictures?



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Future Agenda?

- Intensify efforts to promote public awareness of the importance of Ergonomics in school and home computer use.
- Promote professional awareness of classroom ergonomics issues.
- Provide effective Ergonomics education information for schools and parents.
- Define effective Ergonomic designs for hardware, software and furniture.
- Encourage professional initiatives for IEA/HFES to promote Ergonomics in Schools.

Our Responsibility?

- As professionals, we believe it is our responsibility to protect future generations against known injury risks, and to ensure that our children acquire good lifelong skills based on sound ergonomics practice.

