

Teaching and Learning with Technology: Chapter 6

Academic (Commercial) Software


Adapted by
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Academic Software

- Software that supports and enriches teaching and learning
- May include commercial or teacher-made software
- Costs (including acquisition, installation and training) vary so it is important to **carefully review and evaluate** academic software
- Range from adapted business tools to software created exclusively for learning


Authoring Systems

- Software that assists teachers in creating their own instructional software
- Vary in the type of hardware necessary to run them and the type of operating system interface they can be used with
- Hypermedia authoring systems help teachers create electronic “cards” that teach specific concepts and are linked together for navigation



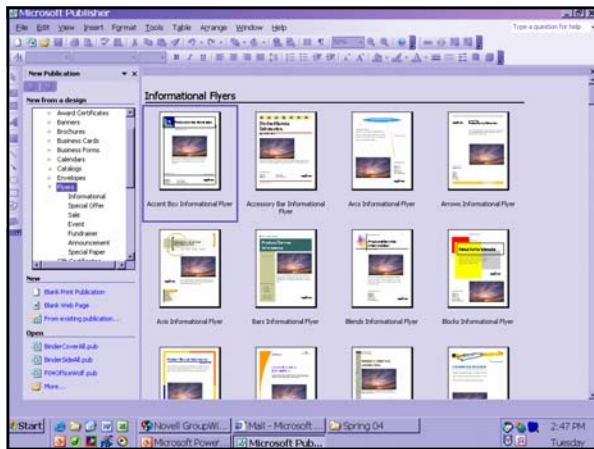
Authoring Systems


- Multimedia authoring systems
 - Can create a range of multimedia software from simple to sophisticated
 - Teachers can make reviews, tutorials, and lessons that can be used as stand-alone software
- Web authoring systems help teachers create multimedia software that can be used on a web site



Desktop Publishing

- Lets users electronically design and layout pages
- Elements that can be created and arranged include text, word art, and graphic objects
- May include web authoring component
- Useful for creating handouts, flyers, newsletters, transparency masters, etc.






Graphics Software

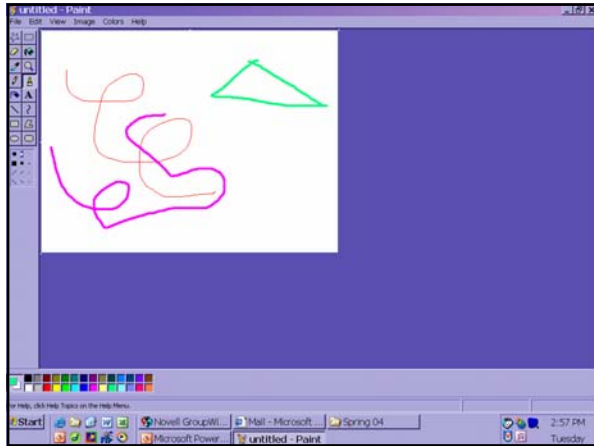
- Software that lets you create, capture, and/or manipulate electronic images
- Most productivity software includes libraries of prepared graphic images called clip art
 - Beware of using clipart images in webpages, you'll need to be sure to give each image a unique name.
- Graphics software enables you to include images beyond those included in the clipart libraries of many programs






Paint Programs


- Software that creates and manipulates digital pictures
- Includes tools such as pens and brushes to mimic real-world artist's tools
- Can be used for simple enhancements or to create high-end digital artwork






Draw Programs

- Software that creates and manipulates digital drawings
- Uses layered, arranged objects to create sophisticated drawings rather than electronic artist tools
- Can be used to create drawings, add objects that emphasize points, or create collages




Imaging Software

- Turns hard copy into digital images and/or edits existing digital images
- Typically used and sold with scanners and digital cameras
- Some scanner imaging software can convert hard copy into a word processed document
- Photo-styling software edits and manipulates scanned photos or those from a digital camera




Reference Software

- Digital version of reference materials including encyclopedias, dictionaries, thesauruses, atlases, etc
- Usually on CD
- Often stored in a hypermedia format that includes text, sound, animation, video, and graphics that can be navigated via links




Tutorial Software

- Present **new material** in an instructional sequence
- May be linear or use a hypermedia format
- Typically provides **feedback**
- Let students proceed at their **own rate**
- Not very interactive
- May may classroom management components that report student progress




Drill & Practice Software

- **Reinforce existing skills** rather than teach new material
- Usually linear sequence that **presents key points** and then asks **review questions**
- Provides **feedback and further review**
- Sometimes called “drill & kill” because of its repetitive nature
- May may classroom management components that report student progress




Educational Games

- Presents or reviews content in a **game format**
- **Educational adventures** let students solve mysteries and explore by applying knowledge
- **Board/Card Game** simulations superimpose content on traditional games
- **Video games** add content to arcade style games
- Some controversy exists as to whether gaming overwhelms instruction




Simulations

- Presents a **virtual model** of an **environment or experience** that can be used to practice skills
- Examples include flying an airplane or conducting a chemical experiment
- Provides a **safe way** to experience potentially **unsafe conditions**
- Advantage over real experiences is the opportunity to **adjust speed and ability to replay**




Special Needs Software

- Sometimes used with assistive hardware, special needs software **provides support for learners with special needs**
- **Readers** read scanned or computer text aloud for sight impaired students
- **Speech synthesizers** can turn the spoken word into computer text
- **Multimedia software** can be targeted to specific learning disabilities via
 - Input/output modalities
 - Timing
 - User control




Integrated Learning Systems

- Fully integrated hardware and software systems that provide instruction and/or remediation addressed to target objectives
- May include tutorials, drill and practice, and classroom management
- Usually sold as a bundle with all necessary equipment, software, training, and support
- May be difficult for teachers to fully implement in classroom settings
– Josten's




Problem Solving Software

- Helps students acquire and practice problem solving skills
- May be content-oriented or content-neutral
- Offers opportunities to learn by doing, test hypotheses, discover strategies to solve problems
- Often used in math and science to test concepts taught



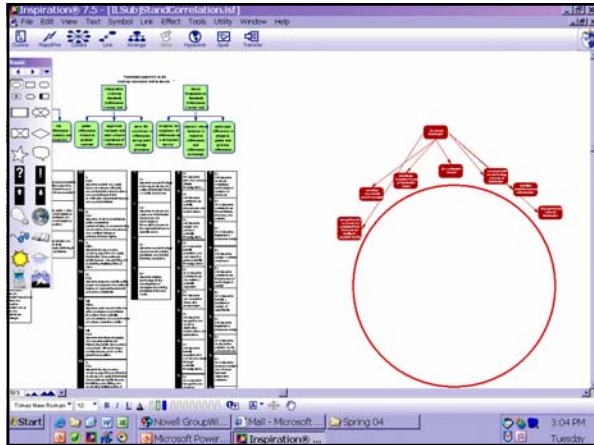
(CAI) Computer Assisted Instruction


- Originally drill and practice but now CAI refers to any software that tutors, reviews, and/or provides feedback
- Not to be confused with Computer Managed Instruction (CMI) that also provides classroom management
- May adjust content level based on correctness of student responses



Brainstorming/Concept Mapping Software

- Allows learners to visually develop ideas and concepts and create connections among them
- Generates visual digital maps of a brainstorming session
- Lets students add ideas, edit them, organize them in relation to others, and see the completed cohesive whole concept





Summary

- Many choices ...therefore, teachers must make careful decisions
 - Review and evaluation a critical step before acquisition
 - Software should address objectives and support and enhance teaching and/or learning to be used
