



Teachers' Use of Writing Software with Students with Learning Disabilities



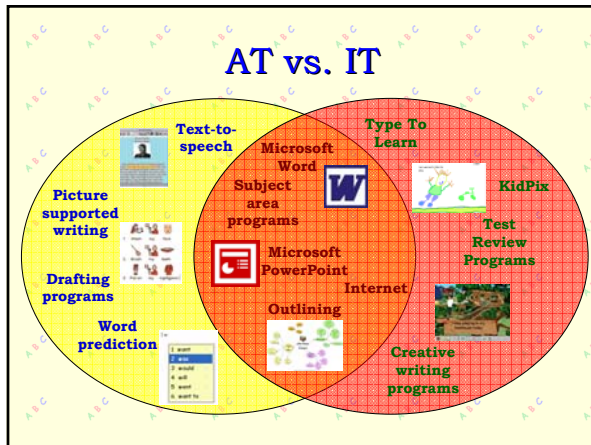
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Background Information

- Ⓢ In many studies related to technology for learning for students with disabilities, instructional technology (IT) is treated as assistive technology (AT) because it supports students in accessing and acquiring skills and content knowledge that they have otherwise struggled to do through other instructional methods.




Background Information



- Ⓢ Academic gains can be achieved through the use of technology when
 - ✓ Quality instructional strategies are embedded in the programs
 - ✓ Students are capable typists
 - ✓ Students are taught strategies to use the writing tools effectively
- Ⓢ School professionals report a lack of AT training


Current Study

- Ⓢ Investigated the relationship between teacher technology training and the incorporation of software as an instructional tool
- Ⓢ Explored how computers are currently being used with students with LD
- Ⓢ Semi-structured online surveys
- Ⓢ Follow-up interviews



Participants

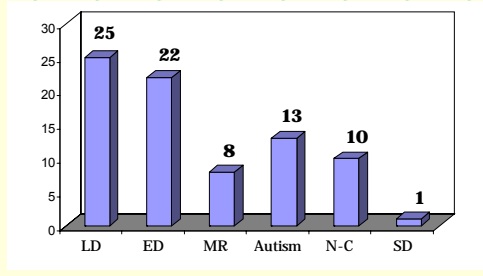
- Ⓢ Graduates from GMU's LD/ED/MR master's and/or licensure program
 - ✓  Technology course and a typical classroom based internship (16)
 - ✓  Technology course and CompuWrite Camp internship (18)
- Ⓢ Currently working with children with disabilities: 32
- Ⓢ Years of teaching experience: 1-11
M=3.97; SD=2.7



CompuWrite Camp

- 4 week summer camp
- 4th-8th grade students with learning and writing difficulties
- GMU graduate student interns
- Student to teacher ratio up to 1:3
- Technology and innovative computer software programs to enhance all 5 steps of the writing process

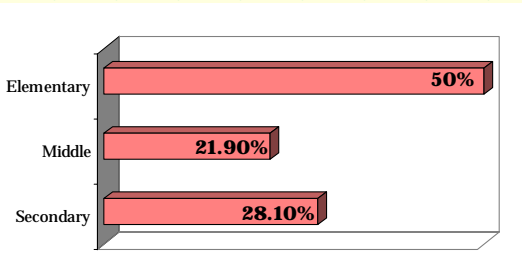
Participants: Population Taught



Population	Number of Participants
LD	25
ED	22
MR	8
Autism	13
N-C	10
SD	1

Note: Participants often taught students from multiple populations.

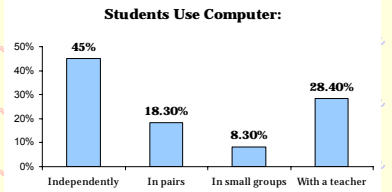
Participants: Grade Level Taught



Grade Level	Percentage
Elementary	50%
Middle	21.90%
Secondary	28.10%

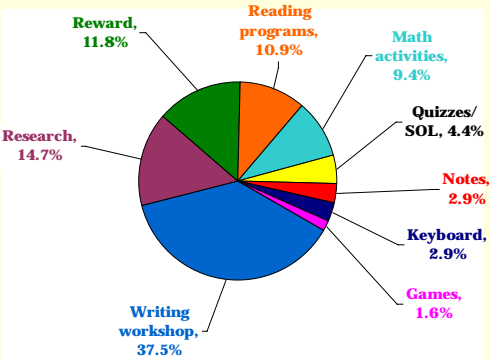
Computer Use in the Classroom

- # of computers in the classroom: **0-20**
M=4.3; SD=4
- Each student uses a computer: 0-10 hours/week
M= 3.02; SD=2.4
- 37.5% of teachers use computer labs with their students



Usage Method	Percentage
Independently	45%
In pairs	18.30%
In small groups	8.30%
With a teacher	28.40%

Computer Use in the Classroom



Activity	Percentage
Writing workshop	37.5%
Research	14.7%
Reward	11.8%
Reading programs	10.9%
Math activities	9.4%
Quizzes/SOL	4.4%
Notes	2.9%
Keyboard	2.9%
Games	1.6%

AT Teachers Use in All Subjects

- Co:Writer and Pathfinder
- Microsoft Word
- Inspiration and/or Kidspiration
- Draft:Builder
- Write:OutLoud
- Internet and blackboard
- Intellitools/Intellikeys
- StoryBook Weaver and Imagination Express
- PowerPoint
- PixWriter and Writing with Symbols
- Type To Learn
- Assessment programs (Success Maker; SOL preparation programs)
- SmartBoards
- KidPix
- Text-to-speech reading programs (ReadOutLoud, Start-to-Finish books, ReadPlease)
- Reading software (Lexia, Simon SIO, WordMaker, Bailey's Book House)
- Interactive books
- BuildAbility
- Math programs Map maker software
- Science series and simulation websites

Text-to-Speech Features

Spell Check

Dictionary

Homonyms

Bibliographer

Write:OutLoud Example

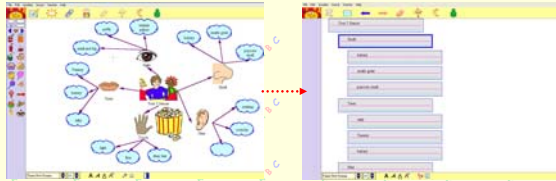
Write-OutLoud - [Matrix] - [1]

File Edit View Insert Text Speech Tools Window Help

What scares me the most is that I'm afraid of the dark. I'm afraid of the dark because in the dark, I always think that monsters would sometimes come out and scare me. I leave my light on so I won't be afraid of the dark. I also have a nightlight too. I also sometimes turn on my lava light but later my mom turns off my lava light. I think the monster lives in the closet. I think the monster is going to big and red and hairy. He probably has big teeth. I think he is going to attack me. If he tries to attack me I would turn on my light and it would send him back to the closet.

Outlining

- * Inspiration by Inspiration Inc. www.inspiration.com
- * Kidspiration by Inspiration Inc. www.inspiration.com



Use the outline from Inspiration to introduce students to the paragraph structure.

* Free demo/trial version is available on the company website

Drafting

- * Draft:Builder SOLO Edition by Don Johnston www.donjohnston.com
- * Writers Companion www.writerscomp.com

* Free demo/trial version is available on the company website

Drafting

"I had him in 8th grade for the class for which I wrote the grant... It was specifically geared towards how to help the kids to become more creative in writing 5 paragraph essays. So I had a kid in 7th grade and he would write a sentence or two for a paragraph. He... also wrote like a second grader in terms of vocabulary and also his handwriting was just atrocious. So I had him in 8th grade and he did Writing and Technology where he would be learning how to type every day and he was using DraftBuilder almost every day. And then last year he went to high school. So he is a 9th grader now. And his mother came back and told me how well he was doing in his English class, and how his essay grades are really good so she really thought he learned how to write in this class. That was pretty cool. Just the fact that he went from 1-2 sentences and by the end of the year he knew how to use the sources online, and he was able to find a word that he knew he needed to improve on his own."

PowerPoint

- * Electronic Books
- * Interactive Games (Jeopardy, Bingo, Who Wants to be a Millionaire, etc.)
- * Reports




PowerPoint Jeopardy game to review SOLs


PowerPoint Example

Slides from a 15 page book written by a rising 3rd grader

Microsoft Word

- ✓ Spelling and grammar check
- ✓ Thesaurus
- ✓ Sounds and graphics
- ✓ Forms
- ✓ Mail merge as a job skill
- ✓ Built-in accessibility Features




"I saw so much improvement with my students when they were in front of the computer. It is not intimidating.... And when they were behind the computer that allowed them a little more power to actually just write and change things later."


Microsoft Word Example

Funniest moments

I was born with blue eyes, but no hair. My dad put ear-rings on me, because I was bald and everyone thought I was a boy.


When I was a baby, I would have my feet at my dad's face, in the bed. When I said my first word, "Dada" my mom was jealous.


When it was Christmas, I opened a present, the toy bear was bigger than me.



Creativity Writing Programs

- ✓ Storybook Weaver by The Learning Company www.learningcompany.com
- ✓ * Imagination Express by Edmark www.riverdeep.net
- ✓ * Intellitools Classroom Suite by Intellitools www.intellitools.com




 Organize a Friday party for parents and ask students to present their story.


* Free demo/trial version is available on the company website


Storybook Weaver Example

There once were 3 elephants. Their names are Elik, Ezer, and Endy. They were triplets.
 They lived in Zimbabwe.
 But one day the elephants were kidnapped by hunters.
 Elik was taken to Germany. He did not like it.
 Ezer was taken to Norway. He hated it.
 Endy was taken to France. She hated it.
 One day, Elik escaped from the zoo.
 They went home to Zimbabwe.

Writing with Symbols

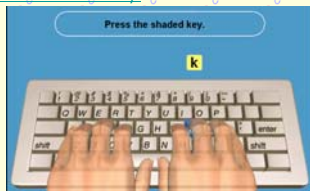
- ✓ PixWriter by Slater Software www.slater.com
- ✓ Writing with Symbols by Mayer-Johnson www.mayer-johnson.com




 Create, print, and cut sentences into separate words with pictures. Ask students to put them back into sentences.

Typing Programs

- ✓ * Learn to Type 3 by Sunburst Inc.
www.sunburst.com
- ✓ Mavis Beacon Teaches Typing 17 by Broderbund
www.broderbund.com/



- ☀ Teaching students with LD two lessons ahead and asking them to be teacher's helpers in the inclusion classroom

* Free demo/trial version is available on the company website

Benefits of Technology Use

Teachers commented during interviews that the use of technology:


- ☉ Enhanced student confidence
- ☉ Gave teachers an alternative way to reach students
- ☉ Increased student participation and independence
- ☉ Became a motivator
- ☉ Provided students opportunities to experience success




Implementation ↔ Training


- ☉ Teachers differentiate computer activities:


 18.7%

 25%

- ☉ Computer use changed since graduating from GMU:

☛ Use it less often  0


 6.2%

☛ Use it more often  9.4%

 9.4%

- ☛ Greater variety of activities:

 6.2%

 15.6%

- ☉ [Factors that encourage and discourage technology use](#)