

DOCUMENT RESUME

ED 463 125

RC 023 427

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TITLE Using Writing Strategies and Visual Thinking Software To Enhance the Written Performance of Students with Mild Disabilities.
PUB DATE 2002-03-00
NOTE 6p.; In: No Child Left Behind: The Vital Role of Rural Schools. Annual National Conference Proceedings of the American Council on Rural Special Education (ACRES) (22nd, Reno, Nevada, March 7-9, 2002); see RC 023 405.
PUB TYPE Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Computer Assisted Instruction; Computer Software; Junior High Schools; Learning Disabilities; *Mild Disabilities; *Remedial Instruction; Student Attitudes; Summer Programs; *Writing Improvement; *Writing Instruction; Writing Strategies

ABSTRACT

Students with mild disabilities often have difficulties with organization and written performance. These students can be helped by a combination of effective instructional strategies, compensatory strategies, and technological tools. Planning and organizing tools can encourage activities such as concept mapping, story webbing, brainstorming, visual graphing, and outlining. "Inspiration" is one such tool--a computer software program that helps students visually organize their ideas and investigate relationships during the writing process. During a 1-month summer remedial program, 24 seventh- and eighth-grade students with mild disabilities were taught to use writing strategies, Inspiration software, and word processors. The quality and quantity of each student's written products were tracked daily, as well as student attitudes toward writing. As the project proceeded, more and more students began to plan their writing before beginning to write. In addition, teachers noted decreasing reluctance to write, and student interviews showed increased positive attitudes toward writing. There was modest improvement in the quality of students' written products and a substantial increase in the amount that students wrote. In addition, students became more comfortable with computers and increased their keyboarding skill. (SV)

Using Writing Strategies and Visual Thinking Software To Enhance the Written Performance of Students with Mild Disabilities

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USING WRITING STRATEGIES AND VISUAL THINKING SOFTWARE TO ENHANCE THE WRITTEN PERFORMANCE OF STUDENTS WITH MILD DISABILITIES

Students with mild disabilities usually perform below grade level in one or more of their core academic subjects. One of the areas that students with mild disabilities show the most difficulty with is in the area of organization and written performance. These students often appear unaware of strategies that could prove helpful to them in the classroom and are frequently inefficient learners. Their school careers are plagued with poor academic performance and low self-esteem (Anderson-Inman, 1999; Okolo, 2000).

Research shows that some of the academic difficulties encountered by students with mild disabilities, can be overcome, at least partially, by combining effective instructional strategies with compensatory strategies (Okolo, 2000). In addition, technology can be utilized in numerous ways to enhance instruction and promote learning with students who have mild disabilities.

Students with learning disabilities often find the demands of their academic curriculum more than they can handle, according to Anderson-Inman (1999). They are faced with an inability to read, and/or write with sufficient fluency. Students with difficulties suffer from low self-esteem and consistent poor academic achievement. They are frequently frustrated by the academic tasks they encounter in school. Motivational issues are important variables affecting the extent to which students are willing to engage in performing academic tasks (Anderson-Inman, 1999).

Teachers consistently report that the use of technology has a positive influence upon student motivation and attitude. However, Lewis (2000) asserts that it is difficult to find objective evidence of attitude changes. A possible explanation for the lack of empirical evidence to show positive effect is that change in attitude toward particular school skills may be interpreted as attitude toward school in general.

Planning and organizing tools can encourage activities such as concept mapping, story webbing, brainstorming, visual graphing, and/or outlining. These tools help students organize their ideas and investigate relationships during the writing process. Many students with mild disabilities have wonderful ideas and stories that can be shared, however, organizing those ideas and thoughts and getting them written down are two very different tasks. Outlining, brainstorming, and concept mapping are robust tools that can help students organize, synthesize, and comprehend content area information. One such program, "Inspiration," can help improve student study skills, acquisition of content area information, and organization of ideas (Anderson-Inman, 1999). Anderson-Inman has developed a repertoire of electronic study strategies, which use this electronic outlining and concept mapping software program. She teaches students to use this software to plan assignments, brainstorm ideas, take notes from textbooks and lectures, synthesize information, and even to self test their knowledge. This software also has the ability to help students brainstorm their ideas, design a story web, and organize during planning phase, which could possibly increase their chance of sharing some of those great ideas they have.

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Special educators have long been interested in the use of technology with students who have mild disabilities. They envision the potential of technology to help students compensate for their poor academic skills. There are a number of studies that suggests computers and related technologies have potential for enhancing the performance of students with mild disabilities (Lewis, 1998). However, there is scant research available that explores the idea of teaching writing strategies to students with mild disabilities and then having them use a visual organizational software program such as "Inspiration" to further their chance to produce an organized written language product.

During one full month in the summer of 2001, 24 seventh and eight grade students with mild disabilities were participated in a summer remediation project. Students worked on their written expression skills, computer skills, social skills, and a variety of other academic skills daily. Three primary goals for this project were; first, increase student awareness of post secondary opportunities available to them despite their learning difficulties; second, improve student attitude regarding their school assignments and third, improve written expression performance. Project instructors wanted to determine if any positive changes could be gleaned from an intensive month long project teaching students to use writing strategies, visual thinking software, and word processors. The quality and the quantity of each student's written products were tracked daily, as well as student attitude. Students produced a pre, weekly, and post written product to be evaluated in an effort to evaluate change in performance. In addition, students were interviewed at the beginning and at the end of the project to determine changes in their attitude changed, and teacher observations were gathered daily.

The students in this project were divided into two groups of twelve, to reduce the teacher student ratio during instructional times. On the first day of the project, students were given a questionnaire regarding their prior knowledge of and experiences with computers, their prior knowledge of writing strategies, their perceptions of their own writing abilities, and their attitudes regarding writing. This questionnaire was administered as a pretest and as a posttest to determine if gaining a story writing strategy would influence their attitude about writing.

Writing samples were collected four times. Writing prompts A and B from the Test of Written Language, 3rd edition (TOWL-3) were used as the pretest and the posttest, respectively, to evaluate each student's written language performance. Additionally, a similar story prompt was used at the end of week 2 and another at the end of week 3 to evaluate written language performance. Identical prompts and evaluations were used for all students. Project teachers administered all writing prompts using scripted instructions to assure that all students receive identical information.

The Test of Written Language 3rd edition (TOWL-3) (Hammill and Larson, 1996) was used to examine the differences between student performance at the beginning of the project and at the end of the project. The TOWL-3 is a standardized instrument designed to measure the quality of written expression and determine proficiency in the conventional, linguistic, and cognitive components of the written composition of students from ages 7 to 17. The TOWL is effective in assessing a students' written language performance, and determining strengths and weaknesses in written language (Yarger, 1996).

The TOWL-3 was used to provide a quantitative, well standardized method to assess the students written performance. Three subtests were designed to assess the spontaneous writing composite of the TOWL-3. The three subtests were contextual conventions, contextual language, and story construction. Contextual Convention measures capitalization, punctuation, and spelling. Contextual Language measures vocabulary, grammar, and syntax. Story Construction measures sequencing, plot, story beginning and ending, and character development.

All instructors maintained a daily log. Entries emphasized student attitude and academic performance. Additionally, instructors documented observations regarding individual assignments, and the various techniques being used by students. Observed strategy usage was entered in the instructor's log. In addition, the length of time a student engaged in planning and organizing before beginning his/her written product was tracked.

Half (12) of the students were taught the writing strategy, story webbing on the first day of the project, while the other half (12) were reminded of some basic concepts of good writing. These concepts were determined by student brainstorming activities; there were no instructions provided by the project instructors. All experiences were identical for both groups with the expectation that one group was taught a structured writing strategy, while the other

group was not. All students were given a prompt daily and all practiced written language production. The group taught story webbing were required to story web when producing a written product.

After the first few days, the group who had learned story webbing was taught to use the visual thinking software program "Inspiration". This software acts as an organizational tool to allow students to use story webbing to plan their writing. At the end of week two, all students were taught to use story webbing strategy as well as the "Inspiration" software.

All students used computers daily. They conducted research using the Internet. They also practiced their typing skills daily. The software "Type to Learn" was used to familiarize students with computer usage and to improve keyboarding skills. This software program tracked student-keyboarding performance. All students exhibited at least some improvement in their keyboarding skills during the month. Also, instructors documented, repeatedly, positive change in student attitude when given the opportunity to produce work using the computers available.

At the beginning of this project, very few students used any planning strategies at all when given a writing assignment. The overwhelming majority of them simply, yet reluctantly, began to write, when given a prompt. This area showed change as the project proceeded. More and more of the students actually began to plan their writing before they began. One particular student went from zero planning to 4 minutes planning and story webbing before beginning his writing.

In addition, teachers noted decreasing reluctance to write. On the first day of the project, numerous students strongly voiced dissatisfaction with having to produce writing products. In fact, several offered to do anything except write. One particular young man initially refused to write anything. On the last day of this project, this young man asked one of the instructors to read his story to the entire group. Incidentally, this was not an activity that had taken place at all during the project; it was his idea, and his request. Additionally, by the end of the project, this young man was writing nearly a full typed page.

Student interviews, pre and post instruction, showed an increase in positive attitude with respect to writing. In addition, when asked about the value of planning, before writing, the majority of students considered this important during the post interview compared to very few during the pre-instruction interview.

There was a modest improvement in regard to the quality of the written product which most of the students produced. This was perhaps due to the short time frame afforded the project. One month is not very long to exhibit great changes in the quality of one's writing skills. This was a dilemma that was recognized before the project began, however all involved decided that if any change occurred, they would consider the project successful.

There was a more substantial change in the quantity of student products. Written projects gained in length with each of the writing exercises. It appeared that as resistance to writing decreased, the length of the written product increased.

The time allowed for the project was one of the biggest obstacles. One month is not a great deal of time to see changes in student performance in an academic requirement, which historically, has been unsuccessful for many students with mild disabilities. That any change was observed at all is truly encouraging. In addition, computers were used on a daily basis with this project. Not all schools, remedial projects, have the luxury of having computers available for daily usage. However, the project instructors witnessed positive changes in student attitudes when they used the computers. And students generally exhibit a more positive attitude when given the opportunity to produce work using computers (Lewis, 2000). Another obstacle of this project was how well this situation could be generalized into the school system.

The positive outcomes of this project were that students produced longer and slightly better quality written products, and there was less resistance and generally a more positive attitude. Additionally, students became much more comfortable with computer usage, and increased their keyboarding skill. For schools having computers available to their students; with the purchase of two inexpensive software programs, "Inspiration"(approximately \$70) and "Type to Learn"(approximately \$100 for a lab of 10), and teachers willing to teach writing strategies to students with mild disabilities, the conditions present in this project can be closely duplicated.

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