



An Individualized, Computer- Assisted Language Experience Remedial Reading Inquiry

Can Inner City Students Make the Grade?

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Two resource education specialists in a Saskatoon community school were well aware of the challenges facing their students. Poverty and its concomitant social problems put many of them at risk for school failure. Cultural issues also affected many First Nations and Métis students. Standardized tests of student achievement had indicated that two-thirds of the students in their school were functioning well below their grade level placement, and a relatively large number of students had limited language skills. Moreover, the school was characterized by chronic absenteeism, tardiness, behavioural disorders and other symptoms of student frustration.

Strongly motivated to find a means of improving students' chances for school success, Gambell and Sajtos developed a two-year research project that explored the possibility of using computer technology to develop the literacy of their middle years students. Their project was based on three assumptions:

- Students would benefit from intensive one-on-one reading instruction.
- A language experience approach would eliminate the orientation of most primary reading materials towards the mainstream in terms of topics and skill levels.
- Voice-activated computer software offered a promising solution to the difficulties encountered by students with limited language skills.

Their research focussed on the question: Can students who are experiencing difficulties with learning to read benefit from a computer-assisted one-on-one language experience program?

Research Methodology

Gambell and Sajtos first conducted a literature review that explored the use of a language experience approach with students experiencing academic difficulties, as well as the use of speech recognition systems to assist students with learning problems.

Next, a case study methodology was developed to follow the progress of two students with whom they worked one-on-one in a computer-assisted language experience program. Each teacher guided a student in a one-hour reading lesson three to four times a week. A typical lesson included a brief scan of the book, an oral reading of it by the student or teacher, guided questioning and discussion, and student responses to the book through drawings, written summaries, and the generation of new stories inspired by the book and based on the students' own experiences.

At the beginning and the end of the project, both empirical and qualitative data were gathered about the students' reading ability and their attitude towards reading, using student self-assessments and standardized tests. Students' dictated stories, running records, and miscue analysis also provided information about students' language development, oral reading fluency and the strategies they used when reading.

Problems and Limitations

The research was limited at times by problems with the technology used to assist students' reading and writing. The three software programs used in the study included voice recognition texts that were well beyond the reading capabilities of the students. The teachers had to read the texts aloud to the students who then dictated the words into the microphone. The correction of voice recognition errors was a complicated and often inaccurate process that required constant teacher supervision. Also, the programs included microphones that were inadequate in eliminating voice recognition errors and had to be replaced with ones of higher quality.

Attendance and continuity issues also arose in the course of the project. Regular school attendance, punctuality, commitment to the completion of school work, and the likelihood of continuing to attend the school were among the criteria used to select two students for participation in the project. Nevertheless, both of the students initially selected for the project had

some problems with attendance, and both eventually left the school before the project was completed. They were replaced, with greater understanding on the part of the researchers that these issues arose from social and economic factors acting on the students and their families and were largely outside their control.

Research Results

Technology

Gambell and Sajtos concluded that technology has potential in terms of providing individualized language experience reading practice for less skilled readers. Their students were motivated by the technology and enjoyed seeing their own words converted to print on the computer screen. They became proficient in using various features of the software and more aware of the conventions for spelling and punctuation. However, the voice-activated software available had limited application for less skilled readers and requires further refinement before students are able to work independently with the support of computer technology.

Teaching Methods

The researchers also concluded that the teaching methods used in the project were successful. One-on-one instruction with the voice-activated software fostered rapport between student and teacher. The language experience approach to reading instruction developed positive student attitudes toward reading and supported the integration of students' oral language with the reading and writing process. A meaningful link was created between the students' language and cultural experiences and the school curriculum. At least one student clearly preferred the naturalness of her own speech patterns to that of commercial reading texts. The process approach encouraged students to write about their own experiences, involving them intimately with the text they produced and affirming the relevance of their interests and cultural perspectives. The students also benefited from exposure to trade books that offered them enriched vocabulary and models of sentence structure and phrasing.