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EVALUATION: WESTCAP MACINTOSH COMPUTER READING PROGRAM

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1. GENERAL

In early 1989 a proposal was submitted for the purchase of three Macintosh computers and software for the purpose of assisting lower streamed students in their reading difficulties. A condition of the purchase was that some form of evaluation would be implemented in order to gauge the worth of the program.

The computers were installed in the schools and a program of instruction was written for the commencement of Term IV, which ran for 10 weeks.

2. AIM

The aim of the program was to:

- a) Evaluate the use of 'user friendly' computers in the area of reading remediation for poor readers.
- b) Evaluate the impact of teacher/aide supervision on the effectiveness of the program.
- c) Observe the attendance patterns of the participating students over a period of 10 weeks.
- d) To gauge the relationships of students working in pairs and their levels of self-confidence.
- e) Gauge the responses of students and staff in the schools where the computers were installed.

3. SAMPLE

The sample consisted of 30 Aboriginal and non-Aboriginal students from three schools in the Bourke and Brewarrina school districts. Ten of these students were treated as the control

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group. All students were identified as having poor reading skills (criteria minimum of three years difference between their reading and chronological age) and were assessed as functioning in the moderate to average intellectual ability range. All students were assessed for reading ability using the Neale Analysis of Reading and these levels were further confirmed by the ACER Word Identification Test.

4. METHOD

Three schools (Schools A, B, C) were targeted for the program. School A was designated as 'Interest Value Only', in School B the program was 'Partly supervised', and in School C the program was 'Totally Supervised.

School A was designated as 'Interest Value Only', in that the students were initially motivated by novelty value. Students were not motivated by staff and worked at their own pace until interest waned.

School B was 'Partly Supervised' by a member of staff who was in close proximity to the group of students and could motivate them to continue when interest waned or when they experienced difficulties.

School C was 'Totally Supervised'. Each pair of students was assisted by a resource teacher and/or an Aboriginal education assistant and regular homework was set and marked.

At all schools each student was issued with a workbook, they worked in pairs and were instructed to follow a set course of work related to reading. This entailed sounds, phonics, blends, word recognition (using the Dolche sight words) and writing stories. At the completion of each session the students who completed the session were allowed to play computer games as an added incentive.

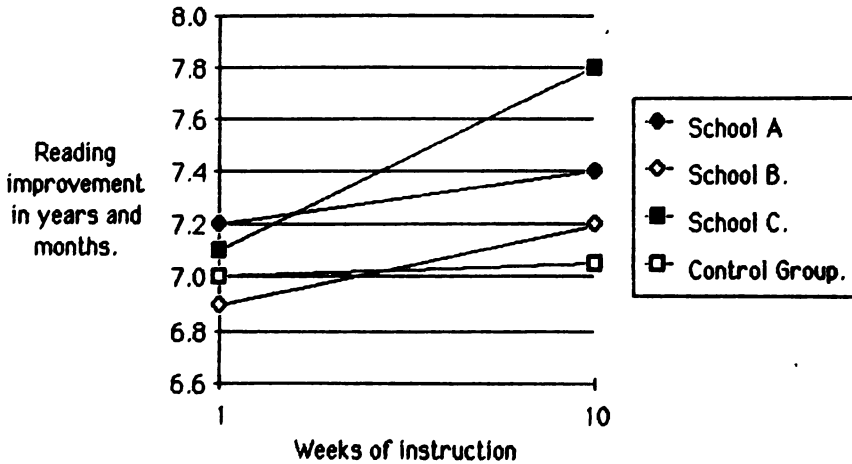
Each group of students at the schools was provided with one day of instruction on the use of the computer and what they were to do in the following 10 weeks. The students' progress was checked periodically during the 10 week period.

5. RESULTS

The mean scores of reading differences in ages over the 10 week period are depicted below for schools A, B, C, and the

control group. NB: For convenience the vertical scale is in decimal units as opposed to 12 units to represent months. The values have been converted to months for the discussion.

Graph of increases in R.A. of Schools A, B, C, and Control Group in months



i) School A: designated as 'interest value only'

Improvement in the reading age (R.A.) was minimal (mean score increase of 2.4 months) for all participating students. The students' involvement in the program was sporadic and interest was quickly lost. The influence of the computer had little impact on the attendance rate of the students. One student benefited immensely from the work with the computer in terms of self-esteem. School staff had observed a marked difference in the improvement of her self-confidence.

ii) School B designated as 'partly supervised'

Improvement in the mean reading age scores (R.A.) was increased by 3.6 months for all participating students. The influence of the computer had a big impact on the attendance rate of the majority of students. All students looked forward to their sessions and one student actually wrote more words in her workbook than she had written during the 1989 school year.

Staff felt that these students, who normally did not attend school on a regular basis and were unable to keep up with the rest of their normal class due to poor reading skills, benefited immensely in terms of personal achievement and satisfaction.

Other aspects that came to light were how well one student who lacked social skills and was often aggressive, actually learnt how to cooperate with other students in the program. Further, four students who were often categorised as experiencing behaviour problems have fitted in well with the rest of the school since their involvement with the program.

iii) School C designated as 'totally supervised'

Students of School C were each supervised for three hours per week and the average increase in reading age was 8.4 months. One student actually increased his reading age by 11 months and another student, who was away from school for three weeks, still managed to contribute to this big increase.

The attendance rate for all of these students improved and after two weeks on the program they became self-motivating and could work unsupervised.

iv) Control group - no involvement with computer program

The control group experienced a negligible increase in reading age (.2) months. It must be appreciated that in a normal school situation the testing of reading ages of students over a 10 week period does not provide a reliable indication of a student's true reading ability.

6. DISCUSSION

From the results it is contended that 'computer assisted reading remediation' (CARR) has merit in the assistance and motivation of students to want to read. This merit is reflected in all aspects of the reading process.

Often students with reading difficulties get behind in their classwork because they have either missed a great deal of their schooling or they have difficulty grasping concepts. As a consequence these students get even further behind their peers because most schools do not have the resources for individual remediation. This is especially the case for schools in isolated regions where it is difficult to get experienced teaching staff, and those they do get need to devote the majority of their energies to coping, let alone trying to teach effectively.

CARR may be a means of assisting the teacher to provide students with reading difficulties a medium for more personalised tuition. In School C the time commitment of the staff was 16 x 40 minute school periods per week and, in terms of the results achieved, this would seem a most cost effective means of assisting students with reading problems.

Attendance has always been a major problem for schools with a high Aboriginal student population. Students who question the worth of education will not attend school on a regular basis. This is generally applicable to those students who do not achieve well due to poor reading skills and, because of this shortfall, cannot cope with the competitive and often threatening nature of the school environment. However, if students were permitted to work at their own pace and level then perhaps the fear of competition and feelings of inadequacy would not be as threatening when they are afforded the opportunity of learning on a computer.

Much has been written about the difficulties that many Aboriginal students may experience in their schooling due to cultural differences, different learning styles and the influence of adverse physical and social environments. These factors can be instrumental in the development of a low self-esteem. How students achieve at school will undoubtedly influence their self-concept and lead to the students questioning their worth as individuals. Improving self-esteem and confidence could be one of the major benefits of a CARR program. Students with reading difficulties will not place themselves in a situation such as the classroom which highlights their problem. As a result, they do not participate in class activities, withdraw, and lose confidence in their ability, with a resulting poor self-esteem and associated behaviour problems. Individual work on a computer could alleviate many of the fears of students experiencing these problems. Further, self-esteem may be lifted simply by being specially selected to work on computers and from the personalised nature of the assistance of the staff member.

Numerous research studies attest to the reading problems experienced by parents in Aboriginal communities in the Western Region. It is suggested that if more schools established a CARR program they could then offer their resources to the local community for reading remediation.

Staff reaction to the program was most favourable. Four staff members of the district have since purchased Macintosh

computers and two are learning to write educational programs. Another staff member intends to do a Masters Degree using a Macintosh computer to investigate learning differences between Aboriginal and non-Aboriginal students in the subject area of Industrial Arts.

In setting up a CARR program in a school the ideal process would be as follows. Two or four computers could be established in a support class, which generally has a small class size. As many students in a support class experience reading difficulties, the teacher's program could incorporate individual instruction on the computer for the slow learner or provide more advanced instruction for the more able student. If a few schools banded together, the cost of software would be minimal as site operation licences could be negotiated.

The success of a program of this nature depends on the availability and suitability of educational software, and in the light of the quality software now appearing on the market it is arguable that this aspect should pose no real problem. In the teaching profession more teachers are beginning to see the advantages of computer assisted instruction and many have entered the field of programming, which is a big plus for the industry, as teachers are in a better position to understand the software needs of their students.

The worth of computer programs in schools is often underrated by many staff and always appears to be low on the list of priorities for principals. It is argued that one of the main failures of computers in our schools is due to the perceptions of many staff that they have amusement value only. Many teachers are afraid of this new technology and make limited attempts to try to understand its utility. Further, they tend to use computers to keep problem students quiet and to provide a distraction for when they need a break. Unfortunately, students soon become accustomed to computers as 'play things' and never realise the full potential and the implications of computers in our society. Computers should not be used in this manner, but should be incorporated into class programs in order to complement the learning process.

In light of this study it is contended that many of the problems confronting the education of students out West could be alleviated by the implementation of CARR programs. With the current price drop in the cost of computers and the availability

of quality software, the opportunity for teachers to fulfil the educational needs of their students is unlimited. However, prior to any expenditure on computer equipment and software, schools need to address the role of computers in their curriculum, devise programs that can complement the student's learning process, and locate computers in the classrooms of staff who have a reasonable level of competence and understanding, and the motivation to use them effectively.

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ABORIGINAL STUDIES COURSES

South Australian College of Advanced Education
Aboriginal Studies and Teacher Education Centre
Holbrooks Road
Underdale SA 5032

ASSOCIATE DIPLOMA OF ARTS (Aboriginal Studies)

Two years full time
Four or more years part time
Internal or external mode
Special entry provisions
Priority for Aboriginal applicants

BACHELOR OF ARTS (Aboriginal Studies)

Three years full time
Five or more years part time
Internal or external mode
Priority for Aboriginal applicants
Admission is on satisfactory completion of Year 12
(or an equivalent), or mature age entry

GRADUATE DIPLOMA OF ARTS (Aboriginal Studies)

One year full time
Up to three years part time
External mode only
Applicants must have graduated with a Diploma or Degree
of at least 3 years duration from a recognised tertiary
institution.

ABORIGINAL TEACHER EDUCATION PROGRAM

Matriculation not required. ATEP provides special
course to help prepare for study.
Full time study for three years, possibly four years.
External study not available at this time.
Primary and Junior Primary course. Successful Year 12
studies are usually required for High School teaching.

(Cont. p.52)