

MacLean, M. & Sharp T. (1997) Multimedia technology and the acquisition of reading skills: An evaluation of Talking Stories. *VIIIth European Conference on Developmental Psychology, Universite Rennes 2, France. September 3-6 1997.*

Multimedia technology is bringing a new dimension to **literacy-related** educational software. **Talking Book software** is designed to support young children in **independent** reading practice.

This study took ***Talking Stories*** software, a constituent of the *Oxford Reading Tree* scheme, into the classroom to evaluate its effectiveness in supporting the acquisition of literacy skills with normal, beginning readers.

Reading practice with the computer was compared with reading practice with an equivalent printed book on 2 measures.

The results indicate significant benefits, particularly for less able and emergent readers on single word reading.

Independent reading practice for beginning or struggling readers is not possible due to insufficient skills and limited attention on task. Furthermore, the slow, halting reading behaviour of such readers often results in substantially fewer words being read during normal classroom sessions (Reitsma, 1988).

Computer technology has been shown to have the potential for supporting independent reading practice (Wise 1989; Hartas and Mosely, 1993). Educational publishers are consequently beginning to incorporate **interactive multimedia programs** into the teaching strategy of their reading schemes.

Talking Stories software is a constituent part of the *Oxford Reading Tree* reading scheme, which focuses on teaching reading-for-meaning from the beginning via an initial whole-word approach (Hunt 1986).

Talking Stories software presents pages of the reading books in interactive computer format. A major feature of the package is natural speech feedback that simultaneously **highlights** and pronounces words displayed on screen, at the level of whole sentences or individual words. Readers are able to access the support most appropriate to their needs, while early skills such as concepts about print, are consolidated at the same time (Medwell, 1993).

The purpose of the present study was to evaluate the effectiveness of *Talking Stories* in improving children's reading skills in the classroom

environment. A comparison was made between gains in single word reading and sentence reading:

- (i) following reading practice with one of the *Talking Stories*,
- (ii) following reading practice with an equivalent printed book from the *Oxford Reading Tree* scheme.

Subjects

20 children, mean age 5 years and 10 months, divided into two groups, A and B, which were balanced for age and gender.

Computer–Based Reading Practice

5 sessions with a *Talking Stories* presentation of one of the reading books at the appropriate ability level. The child read the on-screen text aloud, accessing individual spoken words from the computer as needed.

Book–Based Reading Practice

5 sessions with one printed book from the reading scheme at the appropriate ability level. (To ensure comparability with the computer intervention, the child read the story aloud with individual words supplied by the experimenter only on request. A whole-word approach was maintained throughout).

In this **repeated measures** design the order of presentation was counterbalanced for the two groups.

Materials

- Two sets of printed reading books from the *Oxford Reading Tree* scheme.
- The two sets of *Talking Stories* corresponding to the above reading books, on multimedia computers.

Outcome Measures

Pre and Post-tests of:

1. *Single word reading* using 12 words from the book being read.
2. *Sentence reading* using 3 sentences from the book being read.

Data Analysis

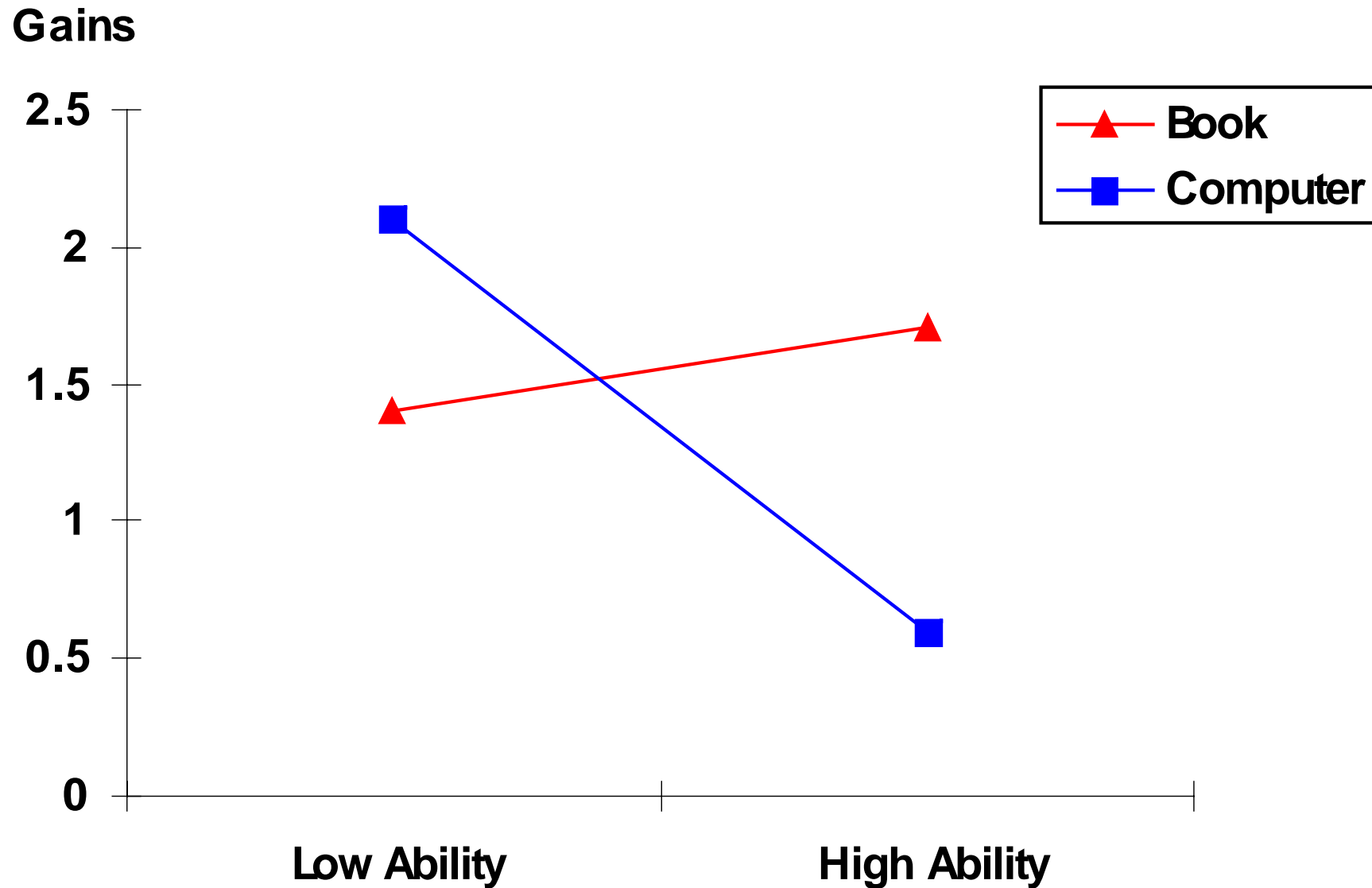
Multiple analysis of variance was used to examine the data for differences in gains between the interventions.

Single word reading test

Children of different abilities may be expected to have different responses to this kind of material. The children were accordingly assigned to a **higher** or **lower** ability level on the basis of their initial pre-test performance on the single word reading task.

Less able readers benefited more from computer-based reading practice than more able ones, who benefited more from book-based reading practice (*see Figure 1*).

Figure 1 Single Word Reading:
Comparison of Mean Gains for Both Interventions by Ability.



Sentence reading test

Results for the **more able readers** were obscured by ceiling effects.

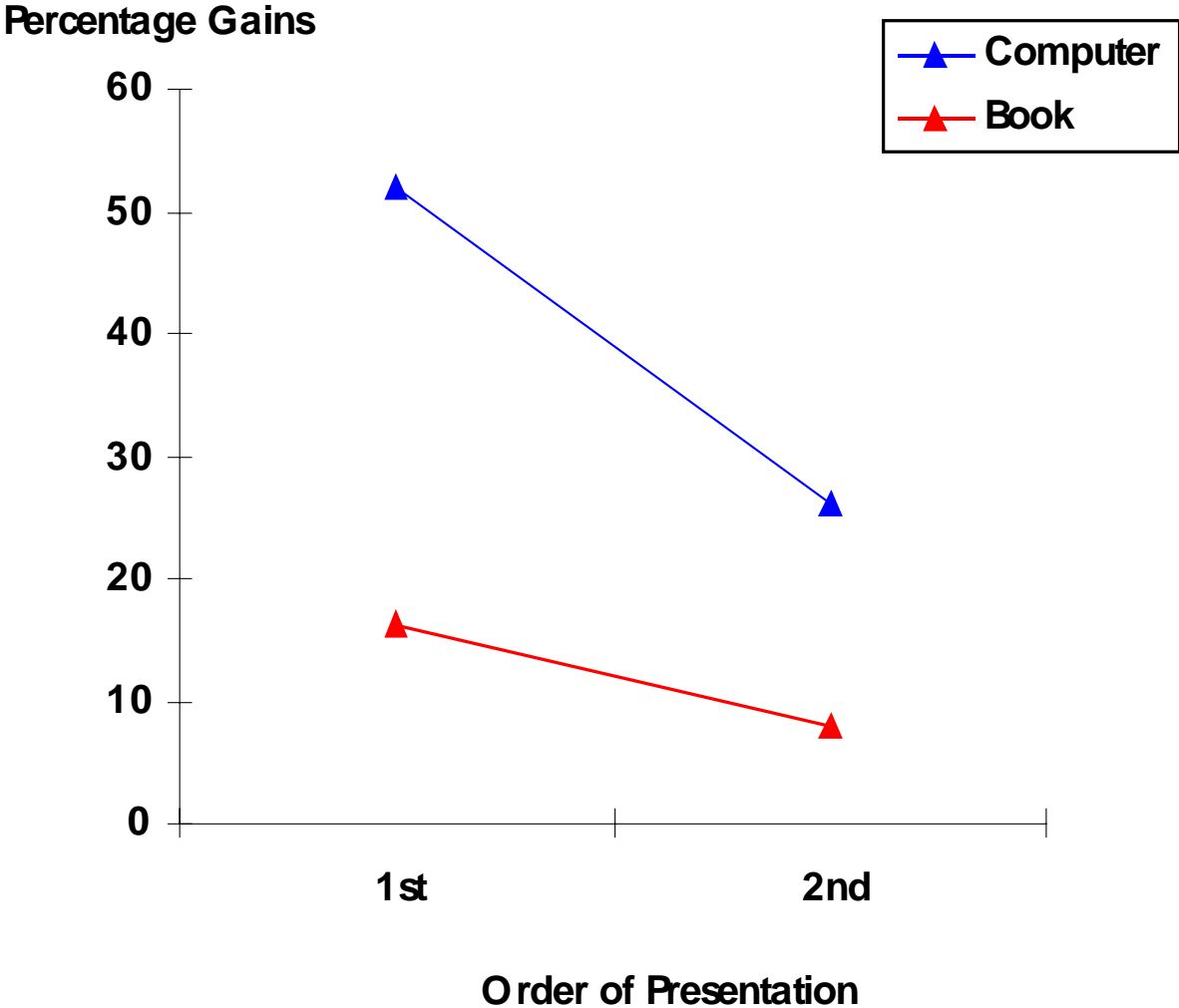
There was a trend, however, towards greater gains following computer-based reading practice. (See Table 1)

Table 1 Sentence reading:
Percentage of Children Reaching Ceiling in the Pre and Post-tests.

	Book		Computer	
	<i>Pre-test</i>	<i>Post-test</i>	<i>Pre-test</i>	<i>Post-test</i>
Low Ability	0%	30%	0%	40%
High Ability	0%	20%	10%	90%

Less able readers showed significantly greater improvement following computer-based reading practice than following book-based reading practice. (Figure 2).

Figure 2 Sentence Reading: Comparison of Mean Gains for Less Able Readers Following Both Interventions by Order of Presentation.



Observations

All the children were enthusiastic about participating in both the book and the computer interventions. Even the less confident children were happy to use the *Talking Stories* once they realised obtaining help from the computer was under their own control.

- The magnitude of the gains made by **less able readers**, in single word and sentence reading was impressive. Scaffolding provided by *Talking Stories* proved effective for readers at the earliest stages, suggesting that even reception class children would benefit.
- Despite ceiling effects, there was evidence of improvement for **the more able readers**, except in single word reading. It is not clear whether the limited gains in this area are an artefact of the methodology (e.g. the number of repetitions of the same material), or relate to an inherent feature of *Talking Stories*, (such as whole-word feedback).
- The pupils clearly enjoyed and benefited from **being in control** of their own learning.

Talking Stories software provides highly effective support for reading practice that is not dependent on the presence of an adult or other skilled reader. As an additional classroom resource it would be of particular benefit to beginning or less able readers, for whom independent practice is not possible.

Further research is needed to ascertain the most effective ways of using this sort of software for children of different abilities and the most appropriate ways of incorporating it into classroom routine.

REFERENCES

Hartas C., & Mosely, D. (1993) "Say that again, please": A scheme to boost reading skills using a computer with digitised speech. *Support for Learning*, **vol 8**, No.1 Nasen. Oxford: Blackwell.

Hunt, R. (Editor) (1986) *Oxford Reading Tree: Teacher's Guide*. Oxford: OUP.

Hunt, R. (1989) *Oxford Reading Tree: Stages 2 & 3 More Stories (Pack A)* Oxford: OUP

SCREEN PRINTOUT FROM ONE OF THE *TALKING STORIES*

Everyone looked at Kipper.



Oh no!



Arrows turn the page forward or back. The ear icon reads the sentence out. The eye triggers animation.