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## **The Electronic Storybook as an Alternative Reading Strategy**

**The author describes a small scale study into the efficacy of electronic books in improving literacy standards for pupils with mild general learning difficulties.**

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### **INTRODUCTION**

Reported literacy problems for up to 20% of the population is a source of a worry for Irish society. The acute difficulty felt by pupils with literacy problems raises the issue of alternative approaches and strategies to improve reading ages. It also challenges educators to evaluate presently accepted approaches in an effort to determine why they may not be suitable for every pupil. For twenty-one years, I have taught in a school for pupils with mild general learning difficulties (MGLD). The single most important distinguishable deficit of these pupils has been their inability to cope with the printed word. Many have excelled socially and have reached more than adequate levels of independent living in adulthood. Most of the pupils have acquired and continue to acquire a basic level of social and employment-related mathematics, which allows them to engage meaningfully in their local and wider environment. But modern society demands a higher level of competence in literacy. Reading ages for pupils with MGLD are often as low as 6yrs on leaving school with no prospect of improving through adulthood. An independent audit of needs commissioned by our school five years ago found that the average reading age of pupils aged 15yrs or over (45 pupils in total) was 7.6yrs. This disturbing statistic hides many years of expert and intensive instruction.

### **THE IMPORTANCE OF LITERACY**

Literacy is as important to the pupil with reading difficulties as it is to the competent reader. The fact that someone has a reading difficulty and consequently cannot fully appreciate the role of literacy in daily living does not diminish its importance. Rather, the teacher's concerns should spur him/her on to seek new methods and strategies to aid the struggling reader. The teacher must feel the pupil's despair at not being able to command probably the most universally important skill.

Socially, not being able to read prevents the pupil from properly internalising the visual cueing that everyday living presents, from signs to packaging, to menus and timetables. Bourdieu (1993) argues that personal control and security are dependent on one's 'cultural capital', i.e. the store of skills and knowledge in which we invest as deemed important by society. Socially, the weaker reader feels more vulnerable and often hides the weakness from peers. The social importance of literacy is also manifested in its professional importance: socio-economic inequality is directly related to literacy (Lynch, 1999).

The cultural importance of literacy is best summed up by Wittgenstein (<http://en.wikipedia.org>) who stated that “the limits of our language represent the limits of our world”. Mead (1934), in his ‘Theory of the Individual’, felt that not having accepted skills leads to a loss of self worth (‘I’) by pupils (‘Me’) among their peers (‘Other’). There is little doubt that a deficiency in good literacy skills has a negative affect on pupils’ self worth.

### **WHAT ARE ELECTRONIC STORYBOOKS?**

Some years ago I first became acquainted with electronic storybooks. There is now a variety of ‘talking storybooks’ available in CD ROM format but there are characteristics common to all. Stories are portrayed in a multimedia format, including print, pictures, animation and aural representation. Most discs have a ‘click on’ facility, for sounding out words, phrases and sentences. In the main, discs employ a ‘look-say’ whole word approach to reading. Many series of discs have various exercises in which pupils interact with the CD ROM through cloze procedures, phonics and word recognition exercises etc. Like most reading schemes, new and key words are repeated regularly. Most of the different schemes that I worked with cover reading ages ranging from 6 to 11 years.

### **AN EDUCATIONAL THEORY FOR E BOOKS**

In the broadest educational sense, parallels can be drawn between the use of E books and the work of Vygotsky, the Russian educationalist who lived in the early twentieth century, an era when personal computers were not even a dream. Vygotsky (1978) postulated his theory of the ‘zone of proximal development’ in which he stated that the potential development of the child, with ‘a competent other’, can exceed the actual development. Simply put, a child can be guided by a more able person to achieve more than is possible on his/her own. For the pupil with reading difficulties, E books allow him/her to read material of a higher reading age than his/her own, with the computer becoming the competent other as it alleviates the pupil’s difficulties. The pupil also becomes his/her own teacher and, along with the computer, can achieve success that might otherwise elude him/her.

As an approach to literacy, the whole language approach has been endorsed by many, but most famously by Marie Clay in her strategy for Reading Recovery. It is not the intention of this article to debate the merits and demerits of the whole language strategy as opposed to a phonics approach. However, I contend that many pupils are unable to build up a sufficient sight vocabulary of words for a phonics approach to become the sub-conscious skill it is for the majority of readers. By using E books, pupils are able to read continuously and not come unstuck on words they fail to recognise. The simple click of the mouse allows them to hear the word and then read on.

## RESEARCH INTO ELECTRONIC STORYBOOKS

Wild (1995) describes the following findings from a research project on CD Rom storybooks, carried out at Edith Cowen University in Australia:

- **Initial motivation by more able pupils declined with time;**
- **Less able students preferred talking books to traditional reading material;**
- **An improved attitude to reading by reluctant readers led to change of attitude towards traditional reading material in only some pupils;**
- **There was an improvement in both vocabulary development and comprehension;**
- **The less able reader preferred repeated re-reading of text;**
- **The less able reader experienced a real sense of empowerment.**

An initial minor research study in 2000 on the use of the electronic storybook (Browne, 2005) indicated to me that they offered our pupils an alternative approach to reading. Over a six-month period I worked with a small group of pupils on a thrice-weekly basis and noted improvements in their reading ages and in their attitude to reading. This study prompted me to carry out a further and more in-depth study of electronic storybooks over a two-year period with two groups of pupils. The following is an account of that study and its findings.

### THE PROJECT

Over two school years I set out to use the electronic storybook as the primary resource in the classroom for the teaching of reading in two different classes. My aim was simply to find out whether or not the use of the E book could make a significant and noticeable improvement in the reading ages of students with mild general learning difficulties over the period of a school year for each class. I also wanted to determine whether a new approach to reading would affect the pupils' attitude to reading. There were two classes in two school years: 2004-2005 and 2005-2006:

Class 1	12 pupils 7 boys 5 girls	Chronological Ages: 13 –14 yrs
Class 2	14 pupils 8 boys 6 girls	Chronological Ages: 13 – 14yrs

**Table 1: Participant details**

At the beginning of each year I established the reading ages of each pupil using the Neale Analysis of Reading Ability (NARA) II (Form 1) and a combination of three word recognition tests (Burt, Schonell and Marino). For 30-40 minutes each morning pupils took their discs assigned to them based on their scores and worked quietly on their own, each pupil having his/her own computer. On occasions, but particularly early on in the year, each pupil worked with the same disc and we had full class reading at the end of each daily session. At the end of each year the reading ages were again taken using the same testing methods (NARA II, Form 2 and word recognition tests) and the results were analysed and compared to expected improvements of reading ages of pupils with MGLD in that age category.

### Expected Reading Ages Of Pupils With MGLD

It is important to be aware of the expected reading ages of pupils with MGLD and to note the expected improvements on a yearly basis.

Chronological Age	Expected Reading Age	Expected Improvement MGLD
13	7.07yrs	
14	8.00yrs	+ 0.03yr
15	8.07yrs	+ 0.07yr

**Table 2: Expected improvements in reading ages**

### READING TEST RESULTS

It would be impractical to display the results of all twenty-six pupils in this article. However, the following table gives an indication of the way the results were logged. The dates of testing were noted. Testing was carried out from September to November and again in May/June.

Name	Neale Analysis of Reading Ability		Schonell	Marino	Burt
(m) = male (f) = female	R.A. = Reading Age C.A. = Comprehension Age				
Student 1 (m)	07/11/05	30/05/06	Sept 05 8.04yrs	Sept 05 9.07yrs	Sept 05 8.03-8.09yrs
D.O.B 09/02/92 Age 13yrs 9mts	R.A. 8.04yrs C.A. 8.04yrs	R.A. 9.11yrs C.A. 9.04yrs	May 06 8.10yts	May 06 10.01yrs	May 06 8.08-9.02yrs
Student 2 (m)	15/11/05	02/06/06	Oct 05 7.02yrs	Sept 05 8.03yrs	Oct 05 6.08-7.02yrs
D.O.B 20/07/91 Age 14yrs 1m	R.A. 6.09yrs C.A. 6.07yrs	R.A. 7.01yrs C.A. 6.07yrs	May 06 7.08yrs	May 06 8.07yrs	May 06 7.06 –8.00
Student 3 (f)	25/10/05	29/05/06	Oct 05 7.02yrs	Sept 05 8.03yrs	Oct 05 8.05-8.11yrs
D.O.B. 03/04/91 Age 14yrs 5mts	R.A. 8.09yrs C.A. 9.07yrs	R.A. 9.01yrs C.A. 10.04yrs	May 06 7.08yrs	May 06 8.07yrs	May 06 9.06-10.00yrs

**Table 3: Sample results at end of Year 1**

Having recorded the results of each of the twenty-six pupils in this manner, I calculated the average increase (or decrease) in each pupil's reading age and compared this with expected increases. The following two tables give these details for each of the two years.

Reading Ages of Year 1 in Context		
Chronological Age	Expected Reading Age	Expected Improvement MGLD
13	7.07yrs	
14	8.00yrs	+ 0.03yr
15	8.07yrs	+ 0.07yr
Study Group Age		Actual Increases
13 years of age (4 pupils)		1yr, 1yr, 0.03yr, 0.03yr
14 years of age (8 pupils)		1.06yrs, 0.06yr, 0.06yr, 0.06yr, 0.06yr, 0.00 yr, 0.00yr

**Table 4: Increases in reading ages for Year 1**

There were several factors which were relevant to the first year group including:

- a high absentee rate for some pupils during the year through e.g., illness;
- the researcher was on SEN diploma course for much of year;
- 11 of the pupils were assessed as being in the higher range of MGLD (low-exceptionally low range of average ability) and 1 in the lower range of MGLD but over half appeared to function at the lower range;
- the reading ages of 9 pupils at the beginning was 7 yrs or less – well below expected reading age for pupils with MGLD.

Reading Ages of Year 2 in Context		
Chronological Age	Expected Reading Age	Expected Improvement MGLD
13	7.07yrs	
14	8.00yrs	+ 0.03yr
15	8.07yrs	+ 0.07yr
Study Group Age		Actual Increases
13 years of age (6 pupils)		1.04yrs, 1.03yrs, 0.09yrs 0.06yrs, 0.03yrs, 0.03yrs
14 years of age (8 pupils)		1.03yrs, 1.00yrs, 0.06yrs, 0.06yrs, 0.06yrs, 0.03yrs, 0.03yrs, 0.02yrs

**Table 4: Increases in reading ages for Year 2**

## SPECIFIC RESULTS

A detailed examination of the results revealed the following key points:

- Out of 26 students, only 2 showed no noticeable increase in reading age.
- The average increase for pupils with a reading age of 5 – 7yrs (12 pupils) was 0.03yrs.
- The average increase of pupils with a reading age of 7 – 8yrs (5 pupils) was 0.07yrs.
- The average increase for pupils with a reading age of 8 – 9yrs (6 pupils) was 0.08yrs.

- **The average increase for pupils with a reading age greater than 9yrs (3 pupils) was 1.03yrs.**
- **The average increase for male pupils (15) was 0.09yrs.**
- **The average increase for female pupils (11) was 0.04yrs.**

## **GENERAL CONCLUSIONS**

Given the very low reading ages at the start of each year, significant improvement in reading ages was achieved. Many pupils showed greater ability at word attack skills in word recognition tests by the end of the year. Pupils felt in charge of their own reading progress. Pupils were able to read material which was at a level above their reading age, without help. Generally, pupils worked better on their own rather than in groups. Back-up book versions of stories were very helpful. The sub-conscious development and use of ICT skills led to greater self-esteem by pupils and to a better attitude to learning to read. There was also a noticeable improvement in pupils' attitude to reading. Having a variety of E books available meant that pupils could delve into a wide variety of reading material which allowed them explore a broad range of topics, from science to history, to adapted novels and plays.

## **RECOMMENDATIONS**

A major stumbling block for developing such an approach to reading is the cost involved, particularly the cost of the electronic storybook CDs. This cost can be reduced in two ways, firstly by the manufacturers reducing their prices and secondly by the government eliminating V.A.T. on the CDs. It appears illogical that, while alarm bells ring over falling literacy standards, initiatives to increase these standards are penalized monetarily. When investing in I.T. hardware, schools should also consider second-hand computers. This project was carried out on 14 second-hand PCs, which were relatively inexpensive and have lasted many years in the school. For the cost of a new PC, up to seven second-hand ones can be purchased.

I believe also that this study suggests a fundamental re-thinking of the role of ICT in special education. For many years there has been an emphasis on the word-processing software of the PC, particularly the corrective features of such software. Indeed educational psychological assessments often recommend the use of the computer as an aid to writing. There is a little of 'the cart before the horse' in such thinking. In my experience, most pupils with spelling and writing difficulties also have major difficulties in reading and comprehension. Increased reading ages lead to increased writing standards, not vice-versa.

It is clear from the findings of this small scale research project that the use of elements of ICT did improve the literacy levels of this small group of pupils with MGLD. The study also advocates a consistent 20-30 minute session each day to improve literacy levels. A more in-depth study into the use of E Books should be explored, especially for pupils with specific reading disability. Other possible avenues of exploration include the use of PowerPoint and other software by pupils to create their own books and the use of voice recognition word processing software for writing. There is little doubt, however, that modern technology can be used to

improve literacy standards and that electronic storybooks should be seen as an integral part of this effort.

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