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Computer Aided Language Learning for Special Education

This paper discusses the role Computer Aided Language Learning (CALL) can play in special education. It is suggested that CALL researchers should collaborate with special education teachers and educationalists to focus on students' specific needs and abilities to create relevant and age-appropriate CALL courseware for this target group.

CARA NICOLE GREENE is in the School of Computing at Dublin City University, Dublin.

INTRODUCTION

This paper outlines the role Computer Aided Language Learning (CALL) can have in special education and will focus on learning support/resource teaching in Irish primary and post-primary schools. CALL has much to offer, including increased motivation, privacy, multi-media presentation of materials, and the ability for all learners, and in particular learners with special educational needs, to work at their own pace and learning style. The learner can build up exposure to the material individually and flexibly instead of relying on fixed classroom length presentation. The paper discusses special education in mainstream schools, current trends in Information and Communication Technology (ICT) in Irish schools, student needs and the benefits of using CALL within special education.

SPECIAL EDUCATION IN IRISH SCHOOLS

There are a number of different special need frameworks in place in Irish mainstream schools. Some schools operate a withdrawal system where students are taken out of class for one-to-one teaching or for group work in support classes. In the support classes, literacy and maths skills can be worked on at the students' own pace. In both primary and post-primary schools, these classes can cover mainstream curriculum material if the support and class/subject teachers work together. Some schools have special needs assistants that work with individual students within the classroom. Educators are aiming for an inclusive educational environment so that all students can have the advantages of going to a mainstream school and being in the same classes as their peers.

Recent national studies of reading literacy point to wide variation in achievement among Irish students. The National Assessment of Reading Achievement (1998) estimated that 1 in 10 students in fifth class in primary school had serious literacy difficulties. The Report from the Task Force on Dyslexia (2002) stated that between 6.5% and 8.5% of Irish 14 year olds had literacy difficulties that were likely to impede their educational development and life chances. The report showed that after children have fallen behind initially in the acquisition of basic reading and writing skills, it is often very difficult for them to catch up so they remain behind throughout

their schooling. The report also highlighted the long wait many children face before assessment by an educational psychologist.

In January 2004, the Minister for Education and Science established the first National Council for Special Education. The Council has a research and development role and the responsibility to ensure that students get the assessment and special education provision to which they are entitled in primary school and that this provision continues throughout post-primary school.

The Department of Education and Science (DES) are currently allocating one support teacher for every 150 children on the roll. This involves 350 new support teacher posts. The Irish National Teachers' Association (INTO) have serious concerns that schools will lose existing support teachers and that schools in disadvantaged areas and small rural schools (with less than 150 students) will miss out under the new proposal. It is important that the new posts are used to clear the backlog so that students will get the special needs provision they are entitled to irrespective of their school size.

ICT IN IRISH EDUCATION

The National Centre for Technology in Education (NCTE) implemented the Schools IT2000 Programme (1997). The objectives were to ensure that pupils in every school would have the opportunity to achieve computer literacy and that support would be given to teachers to develop and renew professional skills to enable them to use ICT for education. The programme's four main initiatives were the Technology Integration Initiative (TII), Teaching Skills Initiative (TSI), Schools Integration Project (SIP) and Scoilnet.

The TII has ensured that there are over 85,000 computers in Irish schools today. It is also the prime funding mechanism for schools for IT equipment, software and Internet access.

The TSI has put in place a comprehensive training programme for teachers including specific ICT for courses in the area of special needs. According to *The Impact of Schools IT2000 Report* (National Policy Advisory and Development Committee, 2001), 59% of post-primary teachers and 60% of post-primary principals and 74% of primary teachers and 88% of primary principals have attended ICT training since the launch of Schools IT2000.

Most participants took Phases 1 and 2 courses, as these were an introduction to basic computer skills, Internet and email. The report also points out that the vast majority of teachers said that they had acquired new skills and increased confidence in using ICT for both looking up teaching resources on the Internet and for actual classroom instruction.

The SIP established eighty pilot projects in a number of 'lead' schools working in partnership with education centres, businesses and third-level institutions. Full details of the pilot projects are available on the SIP website (2004).

Scoilnet was set up by the NCTE as an online resource to provide curricular support, information and advice to students, teachers and parents. The website, which has won a number of awards, is a gateway to educational resources on the Internet. The content is developed and updated by curriculum specialists and teachers.

The investment in ICT in education has improved student to computer ratios in Irish schools. Below is a table showing the improvement in student to computer ratios in primary, post-primary and special schools.

Level	**1998**	**2000**	**2002**
Primary Schools	37:1	18:1	11.8:1
Post-primary Schools	16:1	13:1	9.4:1
Special Schools	9:1	6.6:1	3.9:1

Schools for Digital Age ICT Progress Report 1998-2002 (2002)

The latest World Competitiveness Report (2004) showed that Ireland was bottom of the 29 countries surveyed in terms of broadband Internet access. However, in February 2004, the DES announced that all 4100 primary and post-primary schools will be connected to broadband by the end of 2005.

SPECIAL EDUCATION – STUDENT NEEDS

A learning difficulty will inevitably make mainly text-based lessons difficult for a student to follow. Students with special educational needs will more than likely fall behind classmates, resulting in low self-esteem for many. As they find it hard to concentrate on lessons, they can find lessons boring and search for alternative ways to pass the time. They may try to avoid doing schoolwork and homework because they find it impossible to do it well. Behavioural problems are common; children with specific reading difficulties often become angry and frustrated. Older children may drop out, fail exams or get into serious trouble, both at school and outside (Mental Health and Growing Up, 1999).

Students with a learning difficulty need to be able to work on their class work at their own pace. If students are struggling, they may fail to attend school and/or not do their homework. Therefore, they lack essential reinforcement of what has been done in class. They require positive feedback when they are in school in order to know they are succeeding. Success will motivate them to attend school and do well again. Although it is important to work on a student's difficulties, e.g. phonics/decoding with a student with dyslexia, it is equally important not to neglect their strengths and to bring out the best in a student. It is important that students with a learning difficulty have an active role in getting the most out of teaching and learning, rather than being subjected to the traditional "chalk and talk" or text-based method, where students sit and listen to the teacher in the classroom. As students with a learning difficulty may have a somewhat negative attitude towards reading and writing, course content needs to be represented by other means as well as text, such as graphics, video and audio materials with which students can interact.

'CALL' FOR SPECIAL EDUCATION

CALL software is language-learning software (e.g., web-based, CD-Rom, interactive) that has lessons and exercises designed and developed for the particular needs of a target student group. CALL is a means of aiding the work done in the classroom by the teacher and also can be a means of independently learning a language. CALL is most often aimed at second language acquisition but it can be applied to the educational needs of students having difficulty with their first language.

In some Irish post-primary schools, probably as a result of a lack of funding, CALL materials for primary school children with special needs are being used as a stopgap for teenagers with learning difficulties in post-primary schools. Teachers are using this software because it has simple content, e.g. basic reading comprehension and spelling games, which takes the emphasis off the written word. The information is presented using additional media formats, rather than being restricted to the textual formats of classroom teaching. However, there is a crucial drawback to using this software. As it is aimed at children, it is inappropriate for young adults and causes a lack of interest in their support classes. The lack of age-appropriate software makes it very difficult for teachers to find material suitable for their teenage students. Teachers require basic reading or mathematics programs for teenagers and the majority of what is available is targeted at younger children.

Teachers need to have input into the programs they are using in their teaching. CALL software can be developed by teachers using authoring tools such as Hot Potatoes (2004). If the special education teacher is using an authoring tool they have an advantage over using ready-made software because they can create age-appropriate content, revision lessons and exercises themselves. In the same way, if the teacher is collaborating with a CALL developer on courseware, the developer will be able to design software based on the content and educational needs set out by the teacher. The CALL courseware can also have a skeleton framework where the teacher can input whatever content they want into the tasks and exercises when they are preparing their class work.

Teachers doing ICT training under the TSI initiative usually begin with Internet, email and some word processing. They may not know how to put their new ICT skills to best effect in teaching and learning. It is difficult for teachers to find what they want amongst the vast resources of the Internet and then to adapt it for their class needs.

In contrast, CALL software is language software that has lessons and exercises targeted at the specific needs of a student group. Teachers can use CALL software that will give the students intelligent feedback and log student progress throughout the program, which the teacher can access later. This is more beneficial than using Internet resources because the courseware framework and content is ready for immediate use.

There is a distinction made in the CALL field between the roles CALL courseware should play in language teaching and learning: tool or tutor (Levy, 1997). If the

courseware is designed as a tutor, learning is autonomous. The student and computer interact without the help or feedback of a teacher. If the courseware is being used as a tool, it is used in conjunction with classroom teaching and complements what is being taught in the classroom in what is being referred to as blended learning. Ideally the teacher works with the students in both the classroom-based and CALL aspects of the curriculum. Levy (2001) describes this as a teacher-learner environment. The teacher uses the software's lessons and games as a reinforcement aid for the students. A teacher-learner environment where the courseware is being used as a tool to support the classroom curriculum is the best way to present CALL software to students who need both their teacher's support and the computer's neutral instant feedback and multimedia capabilities.

THE BENEFITS OF USING 'CALL' FOR STUDENTS WITH SPECIAL NEEDS

CALL software promotes autonomous learning. Depending on computer availability, students may be able to access computers during their own time and move at their own pace to reinforce what was done in class. In contrast to the traditional classroom, this can prove advantageous, particularly for students with special needs, as students are not restricted to learning at the same pace as other students in the classroom.

CALL courseware's use of multi-modal media facilitates student understanding – emphasis is taken away from the written word. Students with special needs can learn and comprehend the content of the lesson or exercise without the need to rely completely on the written form – CALL courseware can offer audio, visual, graphical and textual representations of information, rather than being restricted to the textual and linear format of textbooks. Multimedia based learning can be helpful for students with special needs as it provides alternative modes of presentation if the special needs student is experiencing problems with a particular modality.

Some students with special needs have a poor self-image. Self-image can be classified according to students' inner image and outer image. The former refers to the personal perception of self while the latter outer image is the image students try to maintain in front of their peers and friends. Using CALL, students experience positive, instant and intelligent feedback far removed from the teacher's red pen. This feedback is neutral, and takes away the possible stigma attached to answering incorrectly in front of teachers and peers. The software gives the students a chance to concentrate on their work without having to maintain their outer image. The software can log the students' progress and results throughout the material. The teacher can then access this information later.

Students will not normally associate possible negative experiences of reading or writing in the classroom with the computer. It is a fresh start for the student for reading and writing. When they achieve success in this instance, motivation is increased.

The CALL developer and teacher together can create a learning environment that is focused on the students' needs. It is essential that there is formative evaluation

throughout the development and deployment because there is always room for improvement. Teacher and student input should be taken into account and used to continually update the courseware. Students will be motivated to work on something into which they have had input. The resulting CALL courseware will be more beneficial because the students will have added topics they find interesting, like music or football. The teacher and developer could then work together on exercises and games based around what the target learners really like.

CONCLUSION

CALL has much to offer students with learning difficulties including multimedia presentations and channels of communication such as instant feedback and the ability to log students' progress and results. CALL developers and teachers should work together to create age-appropriate CALL content to cater for the needs of students with learning difficulties. Their combined CALL expertise, pedagogy and needs analysis can produce relevant CALL material that would incorporate student ideas to create worthwhile and enjoyable learning support courseware for the teacher and the students. If this software is integrated into the class curriculum it should result in a beneficial and motivating learning environment. Research and development of CALL software for special needs may help to provide much needed support in the area of special education.

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