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Primary school teachers' use of Internet resources: Multiple cases on using the Internet for teaching

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Abstract: The use of information and communication technologies (ICTs) in primary schools is being increasingly promoted through initiatives to improve technology infrastructure and access and an emphasis on integrating technology into the curriculum. Additionally, in New South Wales, the Department of Education and Training is introducing a Computer Skills Test for all Year 6 students. This creates further pressure on classroom teachers to include technology-supported lessons that enable learners to gain the skills they need. However, many teachers are struggling to find effective ways to integrate technology skill development with their class teaching and learning programs. This work-in-progress paper describes a study that aims to provide an in-depth view of how some teachers are successfully integrating the use of the Internet and Internet resources into their teaching and learning activities. Data for this study is currently being collected from students in six Year 3 to 6 classes and their class teachers from four schools. Preliminary findings will be presented at the conference.

Introduction

In public schools in New South Wales there is increasing emphasis on integrating information and communication technologies (ICTs) into the curriculum, with technology skills and knowledge distributed across all key learning areas. The NSW Department of Education and Training has also introduced a computer skills test for students in their final year of primary school. The Year 6 Computer Skills Test is a state-wide public school test that occurs in May of each year. The multiple-choice test is completed by pencil and paper. During 2004 there will be a state-wide trial of the practical test with all students completing a test on the Internet. The topics covered in the test is substantial with students needing to gain an understanding of database, spreadsheets, word-processing, and graphics applications and use of the Internet (including email). It is a significant challenge for teachers to effectively integrate technology experience into learning activities in the classroom.

Some of the difficulties experienced by teachers wishing to use the Internet in class have been due to problems with the technology infrastructure available. In recent times, however, the NSW Department of Education and Training has been working to address problems with the network by providing all schools with broadband Internet access. Another initiative of the NSW Government currently under development is the introduction of 'e-learning accounts' for all public school students and teachers. A total of 1.2 millions accounts will eventually be established to provide filtered access to the Internet, use of supervised discussion boards, Web publishing facilities for students and teachers as well as access from any computer with the Internet and technical support twenty four hours per day.

Despite the continuing improvements in technology available in schools, many teachers are not making use of the Internet. The study described in this paper focuses particularly on the use of the Internet and aims to find out more about teachers and students' experiences of Internet-based activities in the classroom.

Using the Internet in the classroom

Since the late 1990s it has been suggested that the Internet provides educators with the opportunity to implement a range of new teaching and learning practices (Wyld and Eklund, 1997). Through this technology teachers might foster a range of learning styles, support a student centred learning environment, promote cultural understandings, promote real life experiences, provide another publishing medium, promote community and parental involvement as well as enhance students' technology skills (Fly-Jones, Valdez, Nowakowski & Rasmussen, 1995; Wyld and Eklund, 1997). According to Serim and Koch (1996), students can direct their own

learning when using the web and can also use higher order thinking to solve problems. They also report that the Internet supports student learning because it can eliminate barriers in accessing information (Serim and Koch, 1996). Wyld and Eklund (1997) suggested that students also have access to a great amount of information and resources that may not have been available previously. Although this information is readily available, Arif (2001) argues students may not be ready to use the Web effectively. Furthermore, Web pages often use a non linear format. This means that students may need to adjust their “learning strategies to meet the challenges of the new format” (Arif, 2001, p. 2). Students also need to learn how to search on the web as well as be able to identify material of quality and discriminate between information available (Frazier and Frazier, 1994).

Email is increasingly being used by primary-school aged children. Morton (2001), an early childhood teacher, suggests that by being able to write emails her daughter has been given a real purpose for writing and is keen to improve her writing style because of the interest it has given her. Morton (2001 p4) states her daughter “is proud of the network feeling that emailing others has provided her” and that she feels empowered at being able to communicate with “others around the world, and that she feels comfortable asking for information, permission or giving suggestions” (Morton, 2001, p4). Sumner (2000) gives another example of a child who communicated to her grandfather by email and he replied with a list of web sites to assist in her class work. Teachers have reported success stories using email and many feel students benefit by email students from other countries and gaining an insight into different cultures (Abas, 2001). Email is also being used by teachers. Huseth (2001) is one teacher who for years tried communicating with the parents of her students by phone calls and progress reports. More recently she has developed a class web page because it is her belief that children do better in school when parents are involved in their child’s education at home (Huseth, 2001). The San Diego County Office of Education (1997) not only agrees with this but also goes on to describe studies that confirm this, stating that children tend to succeed in school and throughout life when families support learning. The last addition Huseth added to her project was a parent email contact list, when every Monday an email is sent to parents containing homework assignments for the week as well as other communication.

There are many issues that need to be recognised by teachers when implementing email usage in the classroom. For example, these include things such as the importance to write the correct address when emailing because one small mistake will mean the email won’t be delivered (Kurland, Sharp and Sharp, 1997). This can be a problem for primary aged children because it is often difficult to get long addresses spelt correctly. Other problems can include volume of usage that can slow down access to particular locations and sometimes lines can be down (Kurland, Sharp and Sharp, 1997). The NSW Department of Education and Training currently does not provide email accounts for students. This has led to equity issues as not all students have access to email accounts. This has also created problems for some teachers who wish to develop the skills in email use by their students. Others have overcome these in a variety of ways such as setting up class hotmail accounts or asking the students to get their own individual hotmail accounts.

Even when technology is readily available, many teachers are still struggling with identifying and providing opportunities for students to develop the technology knowledge and skills need. This is despite the availability of print-based and online resources to assist teachers with lesson ideas and to help them acquire the skills needed to successfully incorporate technology and, in particular, Internet-related lessons.

The difficulties in using technology in the classroom are not unique to Australia (cf. Royer, 2002). The US National Center for Education Statistics reported that the majority of teachers indicated they had received some training in technology but only 20 percent felt “very well prepared to integrate educational technology into classroom instruction” (NCES, 1999). Jones (2002) recommends teachers have a good understanding of computer hardware and software in order to teach students using good pedagogical practices. Bitner and Bitner (2002) support this by suggesting the teacher needs to learn to use technology and then needs to allow technology to change their teaching paradigm. Jones (2002) goes on to state that it is important to acknowledge the curriculum importance of technology skills and train staff in these skills. He suggests these are important steps in working towards using appropriate pedagogies in technology teaching.

This study explores issues about how teachers are addressing and overcoming problems with integrating Internet technology into their teaching and learning programs. Although in the preliminary stage of this research study, it will investigate the types of Internet activities implemented in class, and how these have been integrated into the whole class teaching and learning program. The study will examine the learners' experience of the activities and the teachers' rationale for the use Internet resources.

Research Questions

The over-arching research question for the study is: How do teachers use Internet resources to enhance teaching and learning activities?

These have been broken down into the following sub-questions:

1. What are Internet resources?
2. What are the different ways teachers use Internet resources?
 - How are teachers using the Internet to influence their teaching?
3. What teaching and learning activities use Internet resources?
 - How does the class teacher implement Internet resources into the teaching and learning program?
 - Why do teachers choose a particular Internet resource?
4. In what ways does the use of Internet resources influence student learning?
 - What are the unexpected outcomes of using Internet resources?

Research Design

This study uses case study methodology and aims to understand why some teachers successfully integrate Internet and what activities they choose to do within their class teaching and learning program. Yin (2003, p. 13) defines case studies as “an empirical inquiry that:

- Investigates a contemporary phenomenon within its real-life context, especially when
- The boundaries between phenomenon and context are not clearly evident”.

Six primary classrooms will form the basis of the cases. Each of the six classes will comprise an individual case within a multi-case design. The use of multiple cases allows for more compelling evidence (Yin, 2003) to be gathered. This approach may also show greater variation, which could perhaps enhance the findings (Merriam, 1998).

Teacher Data Collection

The class teacher involved in the study from every school will be interviewed. This will occur at the beginning of the term and again at the end of the term. The interviews will be semi structured and teachers may wish to bring their teaching and learning program along to the interview.

The teachers will also be given a checklist at the beginning of the study. This will allow them to check off how they used the Internet with their class each week. The checklist will be taken to the final interview and will act as a prompt for both the researcher and the class teacher. Also the researchers’ own reflections will be recorded throughout the data collection.

Student Data Collection

Focus group interviews, surveys and an e-learning diary (Campbell, Bennett and Brown, 2004) will comprise the primary data sources for this study. Each class will have approximately 25 – 30 students in it at four different schools.

The students will keep an e-learning diary from Week 2 until Week 10 in the term. The e-learning diary as a data collection instrument has been piloted previously. This will allow for data to be collected on how the students are using the Internet as well as what types of Internet resources the students are using. Students will complete the double page of the diary once a week towards the end of the week on a Thursday or a Friday.

The literature suggests that using the Internet offers advantages such as accessing information not easily available otherwise and using higher order thinking (Serim and Koch, 1996). Others suggest that email is a quick and efficient method of communicating that can be used to facilitate teaching (Phoda, 1999; Trinidad, MacNish, Aldridge, Fraser, 2001). Although the Internet has been promoted for many years, many teachers are still very reluctant to integrate technology and more specifically the Internet into their class teaching and learning programs. This study will assist in discovering why some teachers are able to successfully integrate technology and more specifically Internet resources into their classroom teaching and learning practices as well as providing a snapshot of primary teachers' use of Internet resources within the context of a classroom. Perhaps this will bring us closer to helping other teachers do this more readily.

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