

Use of ict in primary school classrooms



Introduction:

This chapter outlines the foundation for the researcher's topic area. This will be a summary of multiple pieces of literature the author has analysed to answer the question set out. The chosen area is the use of ICT-Information Communication Technology in infant classes in primary schools. This section will begin by looking at what is Information Communication Technology (ICT). The author will give a brief explanation into what ICT is. Following defining ICT the author will examine the ICT software used at infant classes in primary level. She will then investigate the benefits of using ICT at infant level in the primary school. From investigating the benefits the author will explore the limitations of using ICT at infant level in the primary school. Finally, she will research how infant children's learning and development is supported by the use of ICT in the classroom.

What is Information Communication Technology (ICT)

Information Communication Technology (ICT) is defined by Barnardos (2006, P2) as 'The term ICT (information and communications technology) is used to describe a range of technological media. It is defined not just as computers but programmable toys, telephones, talking books, cameras, printers, scanners and much more. 'Information Communication Technology (ICT) has become increasingly used in many lives. Recently the use of ICT has influenced significant changes in our culture, as a result technology has become very much used today. As the world of technology develops, children in our schools today will live in a world where ICT will be encouraged in their daily lives.

ICT is described by Crawford (2013, P1) as 'a powerful tool as it significantly extends peoples abilities, as a learning tool, it is particularly effective. The term ICT covers a range of tools and equipment. Aistear (2009) refers to ICT as equipment that communicates and influence information. This includes mobile phones, computers, scanners and digital cameras. ICT includes hardware and software devices and programmes. ICT in education has the ability to increase the elements of people's lives by enhancing teaching and learning. (NCCA, 2004)

The word 'Communication' was added to Information and Technology (IT) in the late 1990s as we now use various devices such as mobiles to send messages and to gain information it is unfair to limit ICT to computing or technology. ICT covers equipment everywhere at home and in the setting such as remote controls used for the television, game machines, computers, supermarket bar-code readers, washing machines, timers, heating controls, cameras, alarm systems, phones and electric displays. (Cockburn and Handscomb, 2006) Teachers should concur that young children need to be knowledgeable and familiar with basic technology as it is part of living in the 21st century. (French, 2008)

ICT Software Used in Infant Classes at Primary Level

There is a range of educational ICT software being used in primary schools today. This software is being developed daily, to enhance children's learning and development. The NCCA (2004) recognises that different software products may be more appropriate for children in different classrooms. The use of ICT software can improve and support the teaching and learning

development across curricular areas, whether used in a specific lesson or for a short or long period of time. (NCCA, 2004)

A wide variety of software appropriate for different ages and stages, interests and level of ability will be needed in the curriculum. French (2008) talks about how great care must be taken when choosing particular ICT software for children. The software must mirror the children's interests and should be stage appropriate. The suitability of the software will rely on the learning objectives and the age range and level of ability of the children. The effectiveness of any software program is established by the quality of the software and by how it is used. (NCCA, 2004)

Using paint programmes allows children to experiment with colour, animations, experiment with the mouse and it is a way to introduce children to the basic icons and buttons on the computer. Hayes and Whitebread (2006, P25) states 'Introducing a paint program enables children to understand that the computer is not just a tool for accessing information, but that it is also a tool for creativity.' Teachers are familiar with reading stories out loud to children but a lot of stories come in CD or app form now. There are different case studies, motivating activities and games that come in CD or app form. The tasks are well designed in that the children must understand them to complete them, and they do not provide themselves exclusively to trial and error answers. (Hayes and Whitebread, 2006)

Interactive whiteboards are a new and common form of ICT software used in primary schools today. Elston (2007, p9) describes interactive whiteboards as an 'erasable writing surface that interacts with a computer to capture writing electronically and enable interaction with a projected computer

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image.' The interactive whiteboard works wither by touching the board or using a special pen. The interactive whiteboard comes with software that allows it to be used as a copy board. Children and teachers can draw or write on the whiteboard using their fingers or the pen and they can save their drawings to the computer. The interactive whiteboard comes with built in software called OCR which means the computer will identify the children's handwriting on the whiteboard and turn it into computer text. (Elston, 2007)

The OECD (2002) conducted intensive case studies which examined the use of ICT in twenty one different schools. They found the most popular forms of ICT was word processor, but spreadsheets, graphing and drawing programmes, search engines, and presentation programs such as Powerpoint were also high. Many schools used the internet as a source of teaching or research. In these case studies, ICT was often based on a practice system. (OECD, (2002) Morgan and Blatchford (2009) states there is software developed for the use of young children to allow them to make and create images, add sound effects in media products and add sounds and listen to stories.

The NCTE (2013) recommends that each classroom should be appointed with a teaching computer, a short throw digital projector, a wireless keyboard, a mouse and five classroom computers or laptops. A visualiser should also be in place in each classroom. Primary schools should be supplied with a multi-media workstation to assist with the integration of audio/visual projects. Primary schools share some equipment such as cameras, wireless tablets, printers and scanners. Using a digital camera can the teacher can take pictures of the children's learning and create a portfolio of them to show

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their parents, they can also be transferred to the computer for viewing, for a slide show, for printing or for film making. A wireless tablet can be used for teachers and children to draw, write, colour, listen to stories, do different kinds of subjects such as maths and music. (NCTE, 2013) Teachers should positively model how they use the software. Children should be balanced with lots of other activities to assist real life experiences. (Blatchford and Whitebread, 2003)

The software used in infant classes must be suitable. Morgan and Blatchford (2009) agrees with French (2008) saying often the software can be unsuitable in terms that young children are especially vulnerable, in terms the content can be violent, frightening or highly emotional. (Hayes and Whitebread 2006) talks about for children to benefit from ICT children need to be thought about the differences between the different software programmes.

The Benefits of Using ICT at Infant Level in the Primary School

ICT has an effect on those who use them and their environment. These technologies can offer new opportunities to strengthen many aspects of children's development. There is support and interest across the educator sector for the development and integration of ICT. As Epstein (2007) says computers can play an important role if they are used correctly. Children can sometimes work with objects on a screen more easily than with real objects. This however doesn't indicate that computers should replace real objects.

A considerable amount of research shows that when ICT is used correctly it can enhance children's learning and development, it can encourage

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exploratory play, collaboration, co-operation, discussion, creativity, problem solving, risk taking and thinking. (Barnardos, 2006) The ICT software can be used with different age groups and it can be used with children in a one to one context or it can be used with children in a group. The ICT software can be used to support a child or children in a specific area of learning. NCCA (2004) acknowledges there are potential benefits for using ICT in classrooms also. According to the NCCA (2004) children gain motivation, problem solving skills, higher achievement and improvements in elevated thinking.

Children's imagination and sense of wonder can be supported through the use of context free software. The use of ICT can provide immense opportunities for creative development in children. Children become more independent while developing their creative skills. (Potter 2000 cited in Meadows and Leaks, 2000) The children can enhance their creative skills through ICT in different areas of learning such as; Arts and crafts, music and dance, imaginative play and role play. (Barnardos, 2006) ICT can encourage children's physical skills. By children using the keyboard, the mouse, the buttons, touching the interactive whiteboard or tablet and knobs on a piece of equipment such as a digital camera is an excellent way of developing finer motor skills. Occasionally children might find it easier to manipulate objects on a screen more easily than real objects. (French, 2008)

Children encounter many different achievements and trips throughout the years. Digital cameras are a great way of recording their accomplishments and sharing them with each other and their families. (NCCA, 2004) Computer play can encourage communication, speech and expression. Children are inclined to narrate what they are doing as they draw pictures or move items

and characters around the interactive board. Children interacting at computers retain high stages of communication and co-operation skills. Using computers in the primary school can help children's literacy development. One of the more current research shows that ICT supports children with special educational needs. Research shows that ICT can help children with communication problems and ICT helps children with SEN to access the curriculum more easily by using communication aids, software and appropriate assistive technology. (NCCA, 2004)

Software programmes create a virtual environment which encourage children to read the screens and ask their friends questions about the situations. (Barnards, 2006) The Department and Education and Science (2008) agrees with Barnardos stating that ICT improves literacy, reading and writing skills especially for children in junior infant classes. The use of stories and rhymes on CD, on the internet or on an app enriches the children's experiences of the written word. It allows them to repeat the words over and over again, forming and learning patterns of language and looking at the pictures gives them great enjoyment as the characters come to life. Children develop writing skills from using ICT. Children in infant classes are getting used to holding a pencil the correct way and are tracing letters. Children can practice other ways of writing as they use keyboards and different ICT software. (Selwyn et al, 2010)

ICT can develop children's social skills. Children will be more enthusiastic to learn about sharing, turn taking, co-operating and collaborating when they are joining in a group activity. (Zahariev et al, 2009) French (2008) also acknowledges that ICT can help children's social skills. French (2008)

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believes children can sometimes find it easier to work with a friends on a computer than work alone. ICT can develop their social skills by creating rules for co-operation, children talking about what they are doing and children helping each other Choosing appropriate ICT software can teach children about different cultures, languages and ethnic backgrounds. ICT offers children to learn outside the classroom. The teacher can use different methods of technology to teach the children about different ethnic backgrounds, diverse families, people with special needs and abilities. With access to the internet or electronic resources the teacher has access to different learning materials on any particular topic at any time which benefits the children. (Zahariev et al, 2009)

As technology is becoming the future, by the teachers informing the children about the different forms of ICT, what ICT means, ICT tools and software it is preparing them for the future. Schools and the work environment will be technology related and by the children learning about technology it is giving them the confidence and skills to use such technologies in their later life.

Although there is mixed results for using ICT in schools with young children DES (2008) says one of the major benefits of ICT is it can introduce a visual and interactive aspect into learning. ICT can help promote active learning by allowing the child to find, use and receive information. Research in UK found that ICT helps teachers facilitate the types of learners in the primary school curriculum. This research shows that teachers who use ICT in the classroom have described that ICT is more suited to support collaborative learning and active learning. (NCCA, 2004)

Children can use ICT at different levels depending on their age and stage of development. In infant classes children will use the software to develop and expand their language and in senior classes they can use the software to broaden their language. (Eleven et al, 2012) ICT has an important part to play in developing children's mathematical concepts. It is extremely exciting and can help make learning fun and enjoyable ICT can support children as it provides challenges to develop concepts and skills installed in game-like situations. (NCCA, 2004) The internet can have many different resources, activities and sources for teachers to use to benefit children. If the internet is used appropriately it can support the development of children's abilities to question, to analyse, to investigate and to think critically. (NCCA, 2004)

The Limitations of Using ICT at Infant Level in the Primary School.

As stated above technology has many different benefits but some people have a fear that technology is replacing real objects. From a survey done by Early Childhood Ireland in 2013 it found out most members were worried about:

- The amount of screen time children observed
- The impact ICT has on children's reading abilities
- The relationship between technology and obesity
- The connection between technology and play

ICT cannot be used if the broadband speed is not consistent and reliable. A teacher in a school in County Waterford tries to find many different ways of bringing ICT into the school curriculum but when it comes to the schools

internet access she cannot apply those skills to teach her students and it regularly leads to children being disappointed. (Murray, 2014)

Teachers are not able to use all the technology available for learning.