An investigation of the factors that promote and hinder the use of ICT in an Irish adult education and training centre

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A Case Study Approach

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Declaration

"I hereby declare that this is entirely my own work and that it has not been submitted for the award of any degree at any other university".

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Abstract

Due to the widespread use of Information and Communications Technology (ICT) within all aspects of today's society, ICT use within all education sectors, including adult education must be encouraged in order to fully prepare learners for employment. This case study examines factors that facilitate and impede the use of ICT within education and identifies factors that are specific to adult education. This study primarily investigates the role of ICT within two adult education programmes, namely the Vocational Training Opportunities Scheme (VTOS) and the Back to Education Initiative (BTEI) within an Adult Education and Training Centre (AETC) in Ireland.

Primary research involved observing the eight teachers in the AETC to identify if and how they use ICT within their specific subject area. In addition, questionnaires were disseminated to these teachers and to a random sample of 30 learners, 15 learners from each programme. Alongside this, a semi-structured interview was carried out with the co-ordinators from both of the aforementioned programmes.

This study identified a disparity in ICT use across these specific adult education programmes. VTOS teachers and learners have increased ICT funding resulting in increased availability and accessibility of ICT resources. Consequently, VTOS teachers are highly trained and competent in ICT enabling the creation of versatile and innovative learning environments for VTOS learners. Comparatively, BTEI teachers do not experience the same levels of ICT funding, therefore have fewer opportunities to learn or develop ICT skills. BTEI teachers and learners have access to fewer ICT resources and subsequently BTEI teachers are less knowledgeable, competent or confident using ICT in their classrooms. Although inconsistencies in ICT use exist across programmes, all teachers and learners in the AETC acknowledge that ICT skills are crucial in today's society.

Accordingly, this study suggests that unless this disparity is addressed and resolved, the AETC is failing to meet the ICT requirements and needs of all adult learners.

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List of Abbreviations

AEO	Adult Education Officer
AETC	Adult Education and Training Centre
BECTA	British Educational Communications and Technology Agency
BTEI	Back to Education Initiative
CAI	Computer Aided Instruction
CEOs	Chief Executive Officers
DNA	Deoxyribonucleic acid
DVD	Digital Versatile Disc
ECDL	European Computer Driving Licence
FETAC	Further Education and Training Awards Council
ICT	Information and Communications Technology
NCTE	National Centre for Technology in Education
OCR	Oxford Cambridge and Royal Society of Arts Examinations
PCs	Personal Computers
TUI	Teachers' Union of Ireland
TV	Television
UK	United Kingdom
US	United States
VEC	Vocational Education Committee
VECs	Vocational Education Committees
VTOS	Vocational Training Opportunities Scheme

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Chapter One
Introduction

1.1 Introduction

Although much research has been conducted on the uses of Information and Communications Technology (ICT) in primary and post primary education, ICT use within adult education is a relatively unexplored domain. Ireland's current economic recession and high unemployment levels have resulted in an increased number of adults engaging in and qualifying for adult education programmes. Through adult education, adults hope to obtain the necessary qualifications and skills to improve their employment potential. As we live in a technology-focused society, this emphasis upon ICT should be reflected in the use of ICT in the adult education classroom.

Adult education programmes have a responsibility to prepare adult learners for the working environment. Therefore, they have a duty to integrate ICT within an adult education classroom in order to enable adult learners to develop and improve their ICT skills. This study examines ICT use in adult education, determines if and how ICT is used within a particular Adult Education and Training Centre (AETC) in Ireland and investigates factors that facilitate and impede ICT use within an adult education classroom.

1.2 Statement of Topic

This study is a case study of an Irish AETC delivering two adult education programmes, the Vocational Training Opportunities Scheme (VTOS) and the Back to Education Initiative (BTEI). Both programmes aim to provide adult learners with the necessary skills to return to employment.

VTOS was launched in 1989 by the Department of Education and Science to offer unemployed people, aged 21 or over, an opportunity to update their competences and qualifications. This full-time scheme provides the necessary skills to progress to employment directly or to advance to higher education. VTOS has grown in numbers from having 289 full-time learners in 1989 to 5300 in 2010. The programme is delivered in over 100 locations throughout Ireland by 33 VECs. Eligible adults must be in receipt of social welfare payments for at least six months prior to the start date of a VTOS course. All VTOS courses are 43 weeks in duration, commencing annually in September and all VTOS teachers must be fully qualified post primary teachers.

BTEI was established in 2002 by the Department of Education and Science and in 2007 a total of 25,860 learners were funded through BTEI with 9,847 (38%) achieving certification. BTEI offers all adults, aged 18 or over, an opportunity to learn new skills and gain qualifications on a part-time basis thus allowing them to combine gaining qualifications with family life and work. BTEI learners do not have to be in receipt of social welfare payments, although free tuition is provided to those who are dependent on social welfare. In the AETC studied, the BTEI programme adheres to the standardised post primary academic year and also employs qualified post primary teachers.

The AETC in this study has 130 learners, consisting of 72 VTOS learners and 58 BTEI learners. There are eight teachers in the AETC; some teach exclusively within one programme while others teach across both programmes.

The VTOS and BTEI programmes offer Further Education and Training Awards Council (FETAC) courses in Childcare and Computer Applications as well as the Leaving Certificate programme. In addition, the BTEI programme offers FETAC courses in Marketing and Bookkeeping and Payroll.

Although housed in one AETC, the VTOS and BTEI programmes are run independently, with each having separate management, funding and resources.

1.3 Research Questions

The primary aim of this study is to ascertain the factors that promote and hinder ICT use within an AETC. Specifically, the research questions of this study are:

1. What is the role played by ICT within Adult Education?

2. What are the factors that promote the use of ICT within Adult Education?

3. What are the inhibitors which impede the introduction and use of ICT in an adult education classroom?

1.4 Relevance

ICT use within mainstream education has been encouraged and promoted for many years. Although the National Centre for Technology in Education (NCTE) was established in 1998 to provide ICT training and support for the primary and post primary sectors, scant provision was made for the adult education sector. The NCTE offers minimal advice or support specifically for adult education. As a result, any ICT training or support for adult education teachers is provided by their management and funded by individual adult education programmes.

Moreover, Ireland's Department of Education and Skills (previously known as the Department of Education and Science until March 2010) allocated €252 million in 2007 to aid ICT integration in Irish schools with no provision for AETCs. To date, the Department of Education and Skills has failed to accept or address the importance and need for ICT use within adult education.

The relevance of this study is to determine if previous literature on the identification of factors that promote and hinder ICT use in mainstream education are evident within adult education. This study also identifies if additional factors

exist that are specific to adult education such as the aforementioned lack of ICT training and support.

1.5 Significance

The current adverse economic climate has forced many adults to return to education in the hope that when the economy returns to growth, they will have attained the necessary qualifications and skills that will make them more employable. As ICT is prevalent in most workplaces, failure to learn and develop ICT skills could restrict the employment prospects of these learners.

This study will determine if ICT is used within the AETC and if so, to what extent. As many factors exist that promote and hinder ICT use within any learning environment, an identification of these factors within adult education should be explored. The significance of identifying such factors could result in a realisation of the role played by the Department of Education and Skills, the AETC management, adult education teachers and adult learners in determining whether or not ICT is used within the AETC. Furthermore, possible recognition of other factors that inhibit ICT use may enable the specific educational personnel affected to explore the reasons for such impediments and seek ways to redress and overcome them.

1.6 Background to the Study

ICT use is quickly altering the way teachers teach. Educational approaches have to continually evolve to ensure that ICT is introduced and effectively used in any classroom. Mc Dougall and Squires (1997) state ICT use in the classroom results in a transformation of the learning environment as evinced in learners becoming more independent learners. As many adult learners are self-directed learners (Knowles 1990) and ICT can support autonomous learning (Jager and Lokman 1999), ICT use within adult education is beneficial in meeting learners' needs. ICT use within an adult education classroom can encourage adult learners to

develop ICT competencies thereby ensuring they are better equipped to compete within a competitive workforce and with young school leavers who already have benefited from an ICT integrated education.

The author of this study has taught in this particular AETC for six years and teaches within both the VTOS and BTEI programmes. The author has identified a disparity in ICT use between programmes. Factors that promote or inhibit ICT use within one programme do not necessarily apply to the other programme. This study aims to highlight this inconsistency in the hope that these issues can be addressed and resolved.

1.7 Research Methodology

To ensure validity and reliability of results, triangulation of data was undertaken by the author as both quantitative and qualitative data are used in this study. The sampling frame was identified as management, teachers and learners in the AETC. Qualitative data was obtained via a semi-structured interview with both the VTOS co-ordinator and the BTEI co-ordinator. In addition, a series of direct observations of the eight teachers in the AETC were undertaken to explore if and how teachers in the AETC use ICT within their specific subject area. Quantitative research was carried out through the administration of questionnaires by hand to all the teachers in the AETC. Questionnaires were also disseminated to a random sample of 30 adult learners, 15 from each programme.

1.8 Structure

This study consists of six chapters. Chapter one, Introduction, outlines the area being investigated by the author along with an examination of the relevance, significance and background to the study.

Chapter two, Literature Review, focuses on defining adult education, examining previous literature in the area of ICT use within education and identifying factors that promote and inhibit ICT use in education.

Chapter three, Methodology, outlines some of the main educational research methodologies and a justification and rationale for the research methodology chosen for this study.

Chapter four, Findings, details the results of this study presented by research questions.

Chapter five, Discussions, examines the findings of this study establishing if they compare or contrast with previous literature in this area. This chapter also answers the research questions posed by the author.

Chapter six, Conclusion, summarises the key research findings of this study in terms of outlining the role of management, teachers and learners upon ICT use in an adult education classroom. This chapter also proposes recommendations on how to further promote ICT use within adult education and concludes with an identification of areas for further research.

Chapter Two
Literature Review

2.1 Introduction

We live in an age of technology and computer use (Cook and Finlayson 1999; Kozma 2005) therefore the infusion of ICT into every aspect of peoples' lives, especially in education, cannot be denied (Leask 2001). As such, the effectiveness with which ICT is delivered and understood by the learner cannot be underestimated. Indeed, Cook and Finlayson (1999) argue that learners are entitled to become proficient in ICT and use these skills to augment their learning across all areas of the curriculum. Therefore, teachers need to learn how to effectively use ICT in specific teaching and learning scenarios. Teachers should aim to create information-rich environments where their learners, regardless of age, can develop critical thinking skills and subsequently explore and construct meaning (Dillemans *et al* 1998).

Leach and Moon (2000) suggests that the manner in which ICT is both introduced and developed by the teacher is of great importance and impacts upon the type and effectiveness of any intended learning. In fact, Pachler (2001) warns against the possible misuse of ICT as a valuable teaching aid and emphasises the significance of the approach adopted by the teacher in introducing ICT to learners.

The success or failure of using ICT in the learning process relies heavily on the attitudes, experiences and motivation of everyone involved in the learning process. In addition, the Department of Education and Skills along with the management of the school or adult education centre must provide and manage ICT resources effectively. Teachers must be competent and supportive of technology use (Baylor and Ritchie 2002) and learners must be fully informed and understand the potential of using ICT in their education.

The next section will define Adult Education and examine ICT use within adult education.

2.2 Adult Learning Theory

Andragogy is the term used to define and explain adult education. Reischmann (2004) states that there are three understandings of the term andragogy: firstly, andragogy is the academic approach to the education of adults, the skill of those involved in education comprehending and supporting the lifelong education of adults; secondly, andragogy involves the instruction for adults focusing more on the learning process and less on the content being taught; thirdly, andragogy requires changing specific teaching methods to reflect the nature and disposition of learners as opposed to simply diluting a pedagogical approach which does not cater for the specific and very different needs of adults.

The Department of Education and Science's Learning for Life: White Paper on Adult Education (2000) expands upon these ideas, recommending that when teaching adults, teachers need to:

1. Use a systemic approach by designing educational policies to embrace the life cycle. Adult education teachers must acknowledge and accept that learners' previous educational experiences may not have been favourable. From the onset, many adult learners may bring a preconceived idea to the classroom, of what their learning experience should entail;

2. Eliminate educational access barriers within a supportive management structure. All learners have the right to enhance their learning, irrespective of gender, age, disability or ethnic origin;

3. Design the course with consideration for each learner.

Knowles (1990) presents a theory of andragogy to establish a learning theory specific to adults, stating that unlike pedagogy many adults are self-directed and like to take responsibility for their decisions. Furthermore, andragogy makes certain assumptions in relation to how adults prefer to learn. Most notably, adult learners need to know why they need to learn something, approach learning as a problem solving exercise and learn best when the topic is of immediate value to them. Adults also view learning from a practical viewpoint and in many cases may not be interested in knowledge for its own sake.

Adult learners primarily return to education for four reasons: to improve work prospects; to obtain qualifications; to overcome learning blocks instilled from previous educational experiences; and to fulfil dreams (Scanlon 2008). In light of these factors, the next section will address what role ICT plays in andragogy.

2.3 ICT in Adult Education

Much research has been conducted into the effectiveness and usefulness of integrating ICT into classrooms. However, its integration into an adult learning environment is a relatively new concept which, as yet, has not been fully explored. Traditionally, adult education in Ireland was mainly concerned with developing basic educational skills such as literacy and numeracy. Therefore, many adult education teachers do not see the need for ICT integration. Indeed, many view ICT as a distraction (Ginsburg *et al* 2000). These authors also assert that the ability to use ICT effectively is equally as important as learning the basic skills of reading and writing.

In the twenty first century, it is no longer an issue as to whether ICT should be used in the education system. The majority of learners, irrespective of age, have access to ICT and learners need to become competent in using ICT for career preparation. This increased ICT access has resulted in many learners today being comfortable with technology and not afraid to use technology to learn. Strommen and Lincoln (1992) and Sutherland *et al* (2000) support this by declaring that from

a young age, learners encounter technology all around them. Many believe that this is the main aim for ICT use in today's classroom.

Many learners want and expect more from their educational experience, alongside their qualifications. Indeed, a wide range of individual goals exists within any single learning environment, especially for the adult learner. Alexander (2000) argues that educational goals may be influenced by local and national employment trends and highlights the fear that the Irish economy may fall behind other countries if Ireland does not integrate ICT effectively in education.

For many adults, returning to education can be their first step to resuming learning within a structured learning environment (Keogh and Downes 1998). Many will encounter ICT in education for the first time. Not all learners though will learn more effectively if ICT is used (Healy 1998: Townsend 1997). Consideration needs to be given to the differences between learners and how they learn (Ross and Schulz 1999). In response to this differentiation, ICT has the ability to integrate pictures, video, animation, text and sound. Abrams (1996) stated that this multi-sensory element helps individual learners to learn in different ways, as it can be tailored to meet their differing learning styles. Similarly, educators should avoid ICT resources that consist of a series of attractive images, sounds and video that offer little educational value (Aldrich *et al* 1998).

Adult learners may be apprehensive about returning to education. Using interactivity, ICT and Computer Aided Instruction (CAI) could be viewed as a mechanism to conquer this fear. Furthermore, Light *et al* (1997) states that CAI also allows learners to participate more in their learning than they would in a face-to-face forum.

Kuittinen (1998) argues that CAI should be based on what users need and want to achieve. ICT could be used to motivate learners to achieve their individual learning goals. Moreover, a need for interactivity is reinforced by Leach and Moon (2000) who argue that computer use is more effective when both teaching and learning processes are interactive.

The centrality of all learners' needs is critical to effective learning. Identification of these needs can be achieved if teachers take time to ascertain each individual learner's prior ICT knowledge and experience. Accordingly, teachers can build upon this existing knowledge and provide suitable ICT activities and learning opportunities (Cook and Finlayson 1999).

As the extent of ICT use within a classroom is in part dependent on learners' preferred learning styles, the next section will outline the affect ICT has on learning styles.

2.3.1 Learner-centred versus teacher-centred learning

Some adult learners prefer a more teacher-centred learning approach while others favour a more learner-centred approach. Miller and Olson (1995) argue that using ICT in the classroom has signified a restructuring of the way teachers plan. Consequently, teachers must be open to change and be adaptable. Planning to suit each individual learner's needs and being flexible within this, enables educators to adapt and to use ICT in a manner which puts learners at the centre of the planning and the consequent intended learning process. This learner-centred approach is best achieved when learners are given opportunities to explore within a computer learning environment, which is supportive. This will promote ownership of the learning process for the learners and encourage critical thinking skills (Lai 1993). The promotion of this more learner-centred approach provides more opportunities for the differentiated needs and learning styles of individual learners (Kirkpatrick and Cuban 1998).

Despite this, ICT may not match the expectations of its users and some software fails to promote higher order thinking skills (Kirkpatrick and Cuban 1998). The use of ICT requires a deviation from the more behaviourally based instructional applications of computer technology towards exposure to more interactive and multifaceted ICT, which is seen to facilitate the aforementioned higher order thinking skills (Baron and Goldman 1994).

A learner's favoured learning approach is intrinsically linked to their preferred learning style. Consequently, these cannot be ignored in deciding how to integrate ICT into a learning environment.

2.3.1.1 Learning Styles

Although research has been conducted on the effect of ICT on learning outcomes (Chen and Ford 1997), educators are now cognisant of the impact technology has on learning styles. Ross and Schulz (1999) state that ICT effectiveness can only be identified if the fundamental differences that exist between learners are explored. Learners may be visual, auditory, or kinaesthetic learners. Gardner (1993) stated that everyone has different types and levels of intelligences and this is why they learn and indeed prefer to learn in different ways.

Using ICT within a classroom encourages and supports the constructivist approach to learning, such as that explored by Vygotsky (1978). Constructivism views learning as a process in which learners actively construct new ideas or concepts based upon their current and past knowledge (Lai 1993). Constructivism can be viewed as a very personal endeavour, whereby learners' own experiences are applied in a practical real-world context. Knowles (1990) viewed this as a major contributor to the needs of an adult learner.

Gardner (1993) further stated that the learning process should centre around the learner, as it is only through this approach that each learner can acquire and enhance independent thinking and learning skills. Eisenberg and Johnson (2002) reinforce this, stating that a behaviourist approach to learning limits a learner's ability to link understanding and develop problem solving skills.

In direct comparison to a constructivist classroom, a behaviourist classroom environment centres on the teacher. The teacher decides on the class objectives, breaks them into stages and assists the learner to reach them. The main disadvantage of this teaching method is that learners are not active in their learning, Gonzalez 2002 (cited in Russell 2002). However, a behaviourist

classroom can be adapted to integrate ICT if teachers use ICT to attain the desired class objectives.

Any discussion regarding ICT must acknowledge the significance of other influences upon computer use. Engagement theory has much in common with the constructivist approach, as it claims that learner centrality is further advanced when learners are provided with activities that are both meaningful and provide authentic opportunities to interact with peers (Marshall 2007).

A major difference between a young learner and an adult learner is life experience. Kolb (1984) created an experiential learning circle outlining the role of experience upon a learning situation (Fig. 2.1).

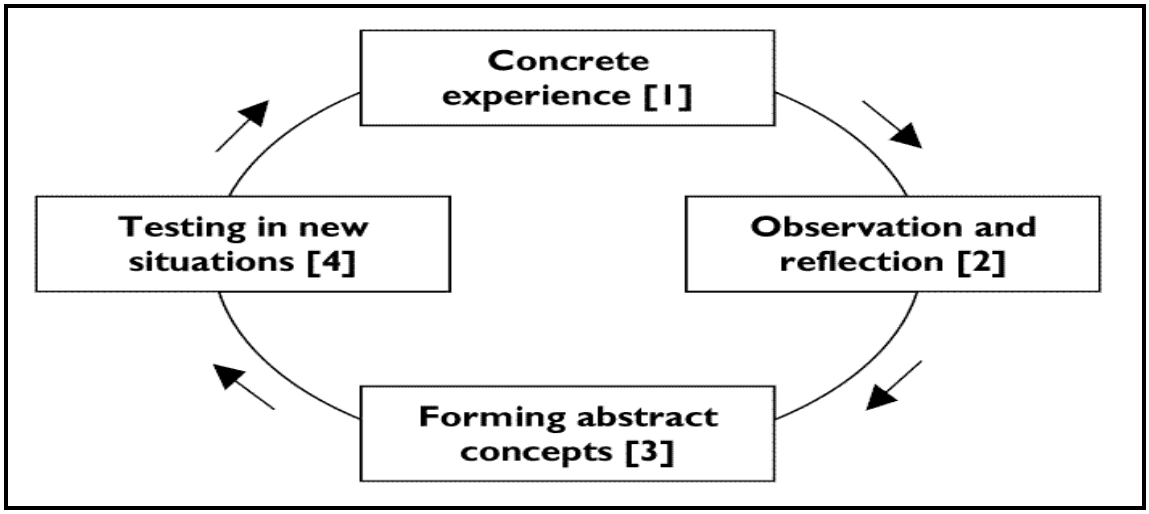

Fig 2.1: *Kolb's Experiential Learning Circle* *Source: Smith (2001)*

Kolb argues that learning could begin at any point on the circle, although in most instances, it begins at the first point, the concrete experience or action. The learner then observes the effects of this action and attempts to understand the effect (forms abstract concepts). Learners then recognise what procedures would follow a similar action in a new situation (testing).

Although adhering to individual learning approaches plays a major role in determining whether and how computer use is promoted in a classroom, other

factors also influence effective ICT use. Indeed, Leach and Moon (2000) argue that the learning approach is inconsequential if ICT is not integrated into both the planning and implementation of the actual curriculum. The following section will address the factors that promote and hinder ICT use in education.

2.4 Factors that promote and hinder the use of ICT in Education

There are various factors affecting successful ICT use within the curriculum. Many educationalists question if ICT should be taught as a separate subject within the curriculum providing learners with basic transferable skills. Vanderlinde *et al* (2008) supports this argument stating that in Finland, technology is a compulsory element in the second level school curriculum. As a result, ICT is no longer at the discretion of the teacher but integral to the school curriculum.

Teachers' reluctance to integrate ICT can be attributed to many aspects, such as a lack of proper ICT planning, ICT training and support, time and access to ICT resources. In fact, Baylor and Ritchie (2002) emphasise that to effectively use ICT, teachers must identify it as a supplementary teaching resource and not as an add-on. Dwyer (1996) reinforces this, stating that many teachers are concerned with teaching ICT rather than teaching with ICT. The Department of Education and Science (2008a, p.99) state that "more teachers use ICT in their planning than plan for the actual use of ICT in their teaching".

To try and overcome this, the Department of Education and Science established the National Centre for Technology in Education (NCTE) in 1998 to increase ICT awareness among teachers and learners in Ireland. NCTE's role is to offer ICT advice, develop ICT related software for schools and maintain the educational website, Scoilnet, as a resource for teachers.

Education funding also impacts drastically upon ICT use. Pelgrum (2001) noted that many governments throughout the world realise the importance of ICT in

education and consequently have increased investment in this area. In 2007, the Department of Education and Science in Ireland allocated €252 million to aid ICT integration in schools. However, this investment has been given to the primary and post primary sectors with little consideration for the adult learner.

Once funding and government support is present, ICT integration is then influenced by management, teachers and the learner. The following section outlines the role of management on ICT integration within a school or adult education centre.

2.4.1 Role of Management on ICT Integration

The role of management is crucial in ensuring that ICT is used effectively within a school or adult education centre. Scrimshaw (2004) states that effective school leadership will encourage teachers to become innovative in ICT use. Sheppard (2003) in a study of 15 schools in Canada, explored how leadership affects the successful implementation of ICT in education, concluding that school principals are integral to altering classroom management practices. Sheppard's study found that a principal's influence is greater when it is indirect and allows teachers to explore independently.

Dawson and Rakes (2003) undertook a survey in the United States (US) to examine the influence of principals' technology training on technology integration within a curriculum. They found that a more technologically aware principal who identifies the potential of ICT will encourage teachers to use ICT in their teaching. Moreover, while principals do not need to be ICT specialists, they must realise how ICT can be used in education and understand how and where to obtain advice on technical issues such as troubleshooting or Internet connectivity (Gurr 2001).

Indeed, Mc Garr and Kearney (2009) in a study of 13 primary school principals in mid-west Ireland concluded that the workload of principals has increased as a

direct result of ICT integration. Many feel ICT increases demands on their time by having to keep up to date and familiar with ICT developments and initiatives.

The following section outlines factors that management are responsible for and have control over in the integration of ICT in a school or adult education centre.

2.4.1.1 ICT Planning

In order to ensure effective ICT integration into a classroom, management should develop and ensure the full implementation of an ICT plan. Although it is management's responsibility to produce the ICT plan, all teachers should be afforded the opportunity to contribute to its contents. Anderson (1996) states that all relevant stakeholders should be consulted in the development of the planning process as this will aid the aforementioned integration process.

NCTE (2002) state that an effective ICT plan must be developed, adhered to and reviewed within the entire school ethos. An effective ICT plan must encompass more than simply having well skilled and experienced teachers. It is not solely a matter of having more ICT resources, there must be a plan to manage and control existing ICT resources.

In order to successfully formulate an ICT plan, a needs analysis should be undertaken in order to evaluate the current situation within the educational setting and subsequently identify what ICT resources are currently available. There are many ways to conduct a needs analysis, one of which was explored by Sharpe *et al* (2001):

1. Firstly, an observation of current hardware should be carried out, detailing factors such as: the number of computers available; location; and an identification of ICT resources;

2. Secondly, identify what software is available and ascertain whether or not it is being used for the purpose for which it was originally purchased;

3. Thirdly, a skills audit should be undertaken, identifying the technological capabilities and experiences of teachers in conjunction with the technological needs and expectations of all learners. Sharpe *et al* (2001) states that determining the potential of using ICT is ineffective if teachers and learners do not have the knowledge or skills to operate it.

Upon completion of the needs analysis, an effective ICT plan can be produced which should include details on how ICT can aid teaching and learning and also state the importance of using ICT in all subject areas (Baylor and Ritchie 2002). It is crucial that the ICT plan contains information on what ICT support services are available within the educational setting. NCTE (2002) states that ICT plans should be updated regularly and considered integral to school policy.

NCTE (2002) further states that an ICT audit should be undertaken alongside an assessment of the current ICT status, to elicit future ICT needs. Consequently, an ICT plan must make provision for the funding of such ICT needs. Developments occur rapidly within this sector, therefore hardware and software technologies that are relevant and current today can quickly become obsolete. As teachers develop their ICT skills and realise its potential, their future ICT resource needs will intensify and change (Scrimshaw 2004). Management must be prepared for these advancements by having the future ICT resource needs of teachers and the inherent costs at the forefront of ICT planning. To facilitate this, a designated ICT co-ordinator should be on-site.

2.4.1.2 ICT Co-ordinator and ICT Technician

The appointment of a dedicated ICT co-ordinator plays an important role in the promotion of ICT integration (Tearle 2003). According to Lai and Pratt (2004) in a New Zealand survey evaluating ICT use, a full time co-ordinator is needed in order to fully integrate ICT into a classroom.

Although the primary role of a co-ordinator is to co-ordinate, Harrison (1998) emphasised that a co-ordinator should also be an initiator, a facilitator and an

evaluator. An increased number of schools in the United Kingdom (UK) no longer have an ICT co-ordinator and subsequently share the responsibilities of an ICT co-ordinator among other teaching staff (Becta 2002). One reason for this is to ensure the co-ordinator's role is undertaken by a range of experienced and highly qualified staff.

In Irish post primary schools, the position of ICT co-ordinator is generally classed as a post of responsibility. However, the number of ICT co-ordinators may decline in future years due to the introduction of a recruitment and promotions moratorium by the Department of Education and Science. This moratorium was confirmed in a circular letter issued to the managerial authorities of community and comprehensive schools and to the Chief Executive Officers (CEOs) of Vocational Education Committees (VECs) in March 2009 (Department of Education and Science 2009).

In February 2010, a directive on posts of responsibilities was issued by post primary teachers' unions. The Teachers' Union of Ireland (TUI) directive instructs teachers not to engage in a review of their existing post of responsibility duties until the moratorium is lifted. Consequently, if a current post holder leaves or retires, the post will not be filled and the duties of the vacated post will not be reassigned to another teacher (TUI 2010). This could have a detrimental effect on ICT integration in schools. At the time of writing (September 2010) this moratorium is still in place.

In addition to an ICT co-ordinator, an ICT technician responsible for maintaining and updating ICT equipment should also be available (Williams 1998). This will remove the burden often felt by ICT co-ordinators and teachers to maintain computers and subsequently allow them to focus on their primary role of teaching (Robertson *et al* 2007). Woods *et al* (2005) echo this by asserting that having an expert ICT technician available is a vital element in ensuring successful ICT integration by teachers with less experience of using ICT. Less experienced teachers may be reluctant to use ICT in their lessons for fear of something going wrong. Having an on-site ICT technician may alleviate this apprehension.

Butler and Sellbom (2002), in a study conducted at Ball State University, Indiana, made a number of recommendations to ensure the reliability of ICT equipment. Most notably, they recommend that the necessity for ICT maintenance be reinforced, that purchased equipment should be reliable, that systems for checking and preserving equipment should be improved, that all staff are informed of the identity of the individual responsible for the maintenance of ICT resources and that all ICT problems are reported and dealt with quickly and efficiently.

The presence of an ICT co-ordinator and ICT technician will ensure that teachers have adequate support to use ICT in their classrooms. Despite this, Herselman and Britton (2002) assert that having access to ICT resources is central to ICT use.

2.4.1.3 Access and Availability of ICT Resources

Gorard *et al* (2000) and Pye (1999) state that ICT has minimised barriers of the traditional classroom and has facilitated many adults to return to education. However, this facilitation only applies to those who have access to the relevant ICT resources.

Toulouse (1997) asserts that there are two issues in relation to access to ICT resources: whether people have access at all; and the allocation of access amongst those who do. All ICT resources should be made available for all teaching staff. Therefore, ICT equipment should not be placed in one room as these facilities will only be available to one group of learners at any one time. The Department of Education and Science (2008b) state that most Irish primary schools have at least one computer in every classroom, whereas most post primary schools have one computer room with most computers confined to that room. Management should consider the location of computers when drawing up an ICT plan and allocate all resources in a manner which ensures that all teachers and learners who wish to use them have equal access to them.

Cox *et al* (1999a) argue that ineffective resources can also create barriers to ICT integration. Every teacher should have access to a computer and if not their own,

one should be allocated to the staff room, which will allow teachers time to learn, plan, organise and practise their ICT skills. In 2009, the Department of Education and Science committed €150 million for the provision of a laptop, software and a digital projector for every primary classroom in Ireland. Cunningham *et al* (2003) found that providing personal computers for teachers results in a significant increase in their ICT confidence and competences.

ICT resources are not limited to hardware technologies such as workstations, computers or networks. Careful consideration must also be given to software. Weeks (2000) declared that software selection should be undertaken with caution and advises educators to choose software which satisfies the needs of both teachers and learners.

Although the availability of resources is important, other factors impact upon ICT use by both teachers and learners. This is reinforced by Cuban *et al* (2001) who surveyed two high-tech schools in California. Their research involved 3200 learners and 140 teachers and they concluded that the availability and accessibility of ICT resources does not automatically lead to ICT use by both teachers and learners. Issues such as time, knowledge and confidence also impact greatly on a teacher's ability to use ICT.

The next section outlines the teacher's role in integrating ICT in education.

2.4.2 Role of the Teacher on ICT Integration

Leslie (1994) states that teachers must realise that they may not know everything of value to their learners, but through ICT they can direct them to obtain the required information. Furthermore, O' Donnell (1996) states that in today's society, a teacher's role is not solely to offer information to learners but to guide and support them to achieve their goals. A note of caution is urged by Jager and Lokman (1999) who argue that even though ICT enables learners to learn independently, it should not take over the role of the teacher.

Ling (1996) describes the nature of teaching and the role of the teacher, as changing from that of an instructor to leader, facilitator, adviser and manager of resources. The teacher will always remain a vital and important link in the establishment of a positive environment, conducive to learning.

Although some teachers will be enthusiastic about introducing ICT into their classrooms, others will be extremely resistant to change (Eastwood *et al* 1998). In a Californian study, conducted by Cuban *et al* (2001) to identify teachers' assumptions towards ICT use, it was found that ICT enables teachers to plan more effectively, communicate more with colleagues and provides more access to teaching resources. Although 13 of the 21 teachers surveyed changed their teaching methods as a result of ICT, only four said that they had significantly changed their teaching philosophy. The teachers surveyed gave more independence to their learners and no longer relied solely on textbooks for information.

A learner's ICT experience within education will almost certainly influence their later attitudes towards ICT (Comber *et al* 1997). Learners' acceptance, interest and understanding of ICT can be partly affected by their teacher's attitude towards ICT. Rosen and Weil (1995) state that some teachers may have been educated before ICT was seen to play an active part in the curriculum and therefore may be anxious or continue to avoid using technology. This can prove problematic if their anxiety is conveyed to their learners. If learners develop a negative attitude towards ICT, it may affect their motivation and performance thereby resulting in them having fewer opportunities and options in the future.

Using technology as a teaching aid to successfully engage students requires planning and restructuring of existing practices (Vrasidas and McIsaac 2000). Selwyn (1997) advocates a number of recommendations that teachers should explore to promote ICT use in education including:

1. Deal with learner anxiety from the onset and identify their preconceptions, if any;

2. Focus ICT content on areas that relate to the learner's real life;

3. Centre ICT training to cater for the intrinsic and extrinsic motivational needs of learners.

The next section of this study will outline some of the factors that affect ICT use from a teacher's perspective.

2.4.2.1 ICT Training

Wise (1997) states that ICT is transforming the relationship between the teacher and the learner, arguing that changing teachers' existing teaching strategies will be difficult. Change will not solely occur by offering training to existing teachers or by only recruiting new teachers who understand technology. Change requires a combination of both approaches thereby enabling teachers to become knowledge facilitators rather than simply knowledge providers.

Mc Garr and Kearney (2009), in a survey investigating the role of leadership on ICT integration, found that ongoing ICT training and support is crucial to ensuring ICT use will not decline. Teachers need to be informed of the potential associated with using ICT to teach. They need to know that the time and effort spent on developing and improving their ICT skills is appreciated and of value. The European Experts' Network for Educational Technology (1998) highlights this by declaring that support within a school is the key to encouraging teachers to make more use of ICT.

A report by Empirica (2006), on behalf of the European Commission, concluded that Ireland was ranked as the one of the lowest in Europe in teacher satisfaction with ICT infrastructure in schools and 85% of those surveyed favoured increased ICT support.

Scrimshaw (2004) states teachers could be more competent in using ICT if increased teacher training and development in this area was provided. Cadiero-

Kaplan (1999), in researching how to enhance staff development in ICT, concluded that many teachers are uncomfortable with formal training programmes, where considerable amounts of information are provided within a limited time frame with little time given to practise this new learning. Teachers prefer on-site workshops where they can specify what they need training in. Adequate ICT training will increase teacher confidence in ICT integration.

2.4.2.2 Confidence in using ICT

Teacher confidence in ICT is crucial in determining whether or not teachers use ICT in their classrooms. In a study of 929 teachers, in 38 Queensland state schools, conducted by Jamieson-Proctor *et al* (2006), it was found that female teachers are 73% less confident than males in integrating ICT within the classroom. They also found that learners are more likely to want to use ICT if their teacher shows confidence in working with ICT.

Russell *et al* (2000), in a study of over 400 Australian schools, concluded that although many teachers were confident in basic ICT skills, they felt weak in advanced ICT practices. Irrespective of confidence levels, some teachers will remain reluctant to use any form of technology within their class as some view it as a clash with their traditional subject culture (Goodson and Mangan 1995). Many teachers consider themselves to be experts in their chosen subject area but not in technology and therefore may find it difficult to break away from more traditional teaching methods (Hargreaves 1994). Consequently, a digital divide may occur between how teachers teach and what learners expect (Oppenheimer 1997).

One way of increasing teacher confidence is to provide them with access to their own computer (Cunningham *et al* 2003). This will enable them to expand their knowledge of ICT in their own time (Schlumpf 1991). Mueller *et al* (2008) state that by having direct experience with ICT, teachers can build the confidence they need to enhance these skills further.

Cox *et al* (1999b) state that teachers should be provided with a supportive and collaborative environment in which they can share their expertise with colleagues. Some teachers will not have the confidence to introduce ICT into their subject area for fear of something going wrong or appearing foolish in front of the class if a lesson does not go as planned due to a technical problem.

The Department of Education and Science (2008a) state that in order to offer support and provide reassurance, a dedicated ICT co-ordinator and ICT technician should be available in all Irish schools. However, few schools have an ICT technician who is readily available. Ironically, as a direct consequence of the government's moratorium on promotion posts in school, ICT co-ordinators who retire or leave the post will not be replaced. As a result of the aforementioned moratorium, management or teachers will have to assume the role of the ICT technician and ICT co-ordinator. This is going to prove difficult for many who already lack confidence working with ICT.

2.4.2.3 Time

Al-Senaidi *et al* (2009) carried out a survey of four college departments in Oman, to identify perceived barriers towards ICT use. The participants of the survey cited time and lack of support as the major impediments to ICT use in their teaching. Their research concluded that more time should be given to teachers to learn and update their technological skills. Technology experts should be given time to work closely with teaching staff to aid this process.

Indeed, Becta (2004) state that teachers are apprehensive to use ICT if they are not given time to become familiar with ICT resources. Means and Olson (1995) argue that it can take a number of years for teachers to become assertive and confident enough to incorporate ICT into their teaching strategies. They further state that although there are many positive aspects of using ICT to teach, lack of time is a major stumbling block. Ironically, although a lot of time and effort is placed upon how to operate ICT hardware and software, teachers may not necessarily know how and when to use ICT within their classes. If teachers were

afforded time to explore ICT with their colleagues, they could discover how it can be utilised within their area of expertise (Haydn and Barton 2008).

Many teachers regard using ICT as an added pressure on their time and feel that it interferes with their home life. Cuban *et al* (2001) found that teachers already find their job time consuming without having to integrate ICT into their lessons. Providing teachers with time at work to explore ICT will expand their ICT knowledge.

2.4.2.4 ICT Knowledge and ICT Experience

Scott and Robinson (1996) declared that having access to computers will enable teachers to overcome integration problems. Mueller *et al* (2008) found that direct ICT experience is more beneficial than providing teachers with infrequent exposure to ICT resources. Evers *et al* (2002) reinforce this, stating that teachers need to have positive experiences with technology to ascertain its potential to enhance their teaching before they will be converted to ICT use.

Moreover, many teachers may have been trained during a time when ICT was not seen as integral to their teaching methodologies (Jamieson-Proctor *et al* 2006). These teachers may be hesitant to change their existing teaching strategies, with which they have become accustomed to and experts in.

Successful ICT use is highly dependent upon a teacher's competence to use ICT (Ringstaff and Kelley 2002). Shiel and O Flaherty (2006), in a census of ICT infrastructure in Irish schools, found that only 32% of primary schools and 53% of post primary schools engaged in ICT professional development training for teachers. Their study also concluded that larger schools provide more training than smaller schools and vocational schools are more likely to offer ICT training than secondary schools. There were no statistics given for adult education centres.

Dexter *et al* (2002), in analysing a case study of six US schools, exploring the link between technology and the teaching profession, found that the majority of teachers view technology as constantly evolving and subsequently feel they are continually learning. This results in a willingness by all teachers to support each other, making them less anxious in acknowledging weaknesses.

2.4.2.5 Attitudes towards ICT

Becta (2004) affirms that a reason for the slow integration of ICT in education is the failure to change the wider educational beliefs of teachers. Not all teachers will be open to change, or willingly adapt to new approaches that go against their teaching norms, yet teachers have the ability to create and instil a positive attitude towards ICT in their classroom. Learners' attitudes towards ICT in the classroom and in everyday life are greatly influenced by the attitudes of their teachers (Comber *et al* 1997). If teachers do not feel at ease using ICT, this could place learners at a severe disadvantage. Learners could be learning about ICT from role models who are themselves uncomfortable with it (Rosen and Weil 1995). Teachers' negative attitudes towards ICT have been found to be extremely influential in deterring learners from using ICT as a learning tool (Koohang 1987; Rosen and Weil 1995).

Some writers associate teachers' negative attitudes towards ICT to their uncertainty about the effectiveness of ICT as a teaching aid (Akbaba and Kurubacak 1999). Others attribute negative attitudes to the way in which ICT has been forced upon them. Many teachers have not been involved in the ICT planning process and in some cases, ICT equipment has simply been placed in their classroom (Fisher and Dove 1999). A teacher who feels involved in the ICT planning and integration process and who is encouraged to become proficient in using ICT will have a more positive attitude towards ICT (Madsen and Sebastiani 1987). Alongside this, when ICT is successfully integrated, teachers become more flexible, open minded and willing to experiment (Dwyer *et al* 1991).

Having discussed the role of management and teachers, the next section will address the final link in successful ICT use in the classroom, the adult learner.

2.4.3 Role of the Adult Learner on ICT Integration

Kambouri *et al* (2006) state that using ICT in education boosts an adult learner's confidence as they are learning and improving their ICT skills, as well as attaining the learning objectives of the class. ICT can empower some learners (Bose 2003), although it can also create a digital divide for others (Oppenheimer 1997). Learners who have access to ICT will succeed whereas those who do not may fall further behind in today's highly technologically driven society.

The following section outlines various factors that promote and hinder ICT use from an adult learner perspective.

2.4.3.1 Perception of ICT

Blake and Sekuler (2005) define perception as a psychological process that controls how people receive, arrange and decipher information from the environment. Adults may return to education with a preconceived idea of what their learning experience should be and in many cases, this may not involve ICT. This may be due to the fact that ICT was not used in their previous educational experience. Consequently, many adult learners may find themselves in unfamiliar territory when they return to education making them feel anxious or insecure (Fidishun 2000).

A difficulty for teachers is determining what their learners want and what they perceive from their learning experience. In reality, teachers must be aware that if andragogical methodologies are inappropriately used, the adult learner may leave a class feeling isolated and apprehensive to return. Some of these factors have a far greater impact on class drop-out rates than a student's lack of ability (Billington 1990: Galbraith 1994). Therefore, ICT may need to be introduced

slowly into an adult learner classroom to prevent learners who are unfamiliar with ICT, feeling de-motivated, segregated and detached from the learning experience.

2.4.3.2 Motivation towards ICT Use

Motivation can be defined as the force that drives people to satisfy needs (Maslow 1943). Some adult learners believe that by obtaining qualifications their lives will be transformed and their job opportunities will be significantly improved, which in turn, will enhance their quality of life and standard of living (Jephcote *et al* 2008). Other adult learners return to education in order to assist their children with their studies. As children in primary and post primary schools are familiar with ICT, their parents need to develop and update their own ICT skills.

If technology is to succeed it should be based on what learners need to achieve and should motivate them to attain a desired behaviour (Kosakowski 1998). Motivating learners would be less ominous if all learners had the same needs and wants from their learning experiences. Despite this, ICT use is enabling teachers to develop attractive and effective teaching materials that can help engage learners. Kearsley (1998) states using ICT within a classroom also enables teachers to bring real life situations to education. Teachers have a responsibility to create a highly motivating environment for all learners. In spite of this, some learners may still prefer more traditional teaching methods (Oliver and Omari 2001).

ICT can potentially enable learners to take more control over their learning which in itself can be highly motivating. ICT allows them to work at their own pace (Cohen *et al* 2004) which will instil in them an impetus to perform well. Alongside this, effective ICT integration promotes differentiation within a programme of study, by being tailored to the learning needs and styles of individual learners (National Council for Curriculum and Assessment 2004). Wishart and Blease (1999) state that through ICT, teachers can create differentiated tasks for all learners. Irrespective of their abilities, ICT allows

learners to choose the complexity of their own tasks within the prescribed syllabus.

The next section will assess if a learner's age and personality affects ICT use.

2.4.3.3 Age and Personality

Cuban *et al* (2001) state that teachers' age does not affect whether or not they use ICT in the classroom. However, research conducted by Selwyn *et al* (2003), highlights that the age of the adult learner influences their acceptance or reluctance to engage and use technology. They surveyed 352 UK adults aged 60 or over and concluded that 21% felt they were too old to use ICT. Despite this, Bernard and Philips (2000) state that all adults, regardless of age, should be encouraged and supported to use ICT, in order for all countries to become genuine information societies.

In addition to age, adult learners' personalities will greatly influence ICT use. Personality can be defined as "a person's nature or disposition or the qualities that make up a character's individualities" (Chambers 21st Century Dictionary 1996). Essentially, personality is the enduring traits of individuals which make them different from other people. As all learners have different personalities based on factors such as their genetic inheritance, beliefs, values and life experiences, their expectations of learning may be different. Some will deem ICT integration as commonplace whereas others will view it as a new and unusual approach to learning, all of which will affect learners' attitudes towards ICT.

2.4.3.4 Attitudes towards ICT

Attitudes comprise numerous components, most notably, beliefs, feelings and actions. Selwyn (1997) states that many learners are anxious using ICT to learn. However, this anxiety can no longer be viewed as either a viable or plausible justification for the inability of many learners to use ICT effectively. Societal

demands stress the urgency for challenging this apprehension, hostility and resentment in order to instil positive attitudes towards ICT.

Selwyn (1997) categorised learners' reluctances to convert to ICT use into three areas: psychological, operational and sociological. Psychological: some learners attribute using ICT as relinquishing control of their learning and many are reluctant to use computers for fear of breaking them. Operational: many learners fear that they will be unable to operate computers or understand ICT terminology. Sociological: some learners view using ICT to learn as working in isolation and view it as anti-social. Selwyn (1997, p.398) states "The idea of the computer 'nerd' or 'anorak' is a powerful image…, leading many non-users to stigmatise computer use as socially undesirable".

2.4.3.5 Socialisation

Socialisation is the term used by sociologists and educationalist to describe the process by which we learn from others. A traditional classroom setting provides learners with an opportunity to congregate, to interact, to discuss, to reflect and to learn from each other. A classroom that is heavily ICT resourced places greater emphasis upon ICT use (Herselman and Britton 2002). However, this could potentially restrict socialisation from occurring. As a result, a technology-rich classroom and a social constructivism teaching approach can potentially conflict with each other. Social constructivism asserts that interaction, dialogue and socially meaningful activity are vital components of the learning process and as such, ICT use must recognise and respond to this.

The constructivist approach to learning such as that forwarded by Vygotsky (1978) views technology as a means of allowing learners to engage in effective and reflective learning. However, it must be acknowledged that some educators may consider ICT as a surrogate for real interaction.

Opportunities arise from ICT integration such as increased learner motivation and an enhanced learning experience. However there is a danger that ICT will replace

real teaching and dialogue. Constructivist thinkers assert that socially meaningful activity is an intrinsic component of the learning process and that social interaction plays a fundamental role in cognitive development. Although an overdependence on technology could inhibit effective learning due to a lack of human interaction, Pilkington *et al* (2000) argue that learning with technology should incorporate exercises that promote interaction among learners.

2.5 Summary

Based on the examination of relevant literature, the main factors that promote ICT use in education are: an effective ICT plan administered by management who recognise and value ICT integration; sufficient ICT resources that are in good working order and available to those who wish to use them; appropriate and regular ICT training for teachers to build their confidences and competences in using ICT; technical support; and highly motivated teachers and learners.

Factors that are hindering ICT integration include: lack of time; lack of experience; lack of adequate ICT training and resources; inability to change unfavourable attitudes and perceptions of ICT; inexperience; and fear of the unknown.

This literature review highlights that encouraging ICT use within any educational establishment involves changing existing norms. Changing existing policies, strategies and expectations to integrate and actively promote ICT could prevent the creation of a digital divide among teachers and learners.

Although there are clear advantages and disadvantages in using ICT within the classroom, distinct factors also exist that can either promote or inhibit ICT use. The identification of these factors within adult education should not be viewed as making ICT mandatory at the expense of other modes of learning.

While this literature review looks at general findings in education, the primary research of the author's study is more specifically focussed on an AETC offering two specific adult education programmes.

The next chapter will outline the research methodology undertaken by the author to identify promoters and inhibitors to ICT use within an AETC.

Chapter Three
Methodology

3.1 Introduction

This chapter identifies the research methodology utilised for the purpose of this study. The background of the research and the setting where the research was carried out will be presented. A number of research methodologies will also be examined along with the justification of the selected methodology. This chapter further explores the research instruments used to answer the research questions alongside the validity and reliability of the chosen methods. This chapter concludes with an examination of how the data will be analysed and a brief discussion on the ethical considerations adopted by the author.

3.2 Background to the Research

Educational approaches are continually being reviewed to ensure that ICT is being effectively implemented into the curriculum and to ensure that the most productive learning environment is established. Using ICT to teach and learn is not a new phenomenon. However, ICT use within all educational sectors including adult education is increasing. Indeed, Lockard *et al* (1994) stated that in the 1970s, it was believed that ICT would change, improve and revive education.

Due to the current economic downturn, the number of adults returning to education has increased drastically. Some of these adults may be entering education for the first time while others are returning to learn or update skills. All these factors have created versatile teaching and learning environments. This study investigates which of the factors, outlined in the literature review, promote and hinder ICT use within an adult education context. This study also identifies issues that may be exclusive to an adult education classroom.

3.3 Research Setting

The setting for this study is an AETC that delivers two adult education programmes namely, VTOS and BTEI. Both programmes offer FETAC certification at Levels 4 and 5, as well as Leaving Certificate qualifications.

Eight teachers are employed in this AETC, some teach exclusively in one programme whereas others teach across programmes. The AETC used in this study caters for 72 VTOS learners and 58 BTEI learners.

The AETC has three general studies classrooms, three ICT suites, one counselling/guidance room and one science laboratory.

3.4 Research Questions

There are many factors which promote and impede ICT use within education. The primary aim of this study is to elicit which of these factors, if any, are evident within an AETC setting. Consequently, this study will ask;

1. What is the role played by ICT within Adult Education?
2. What are the factors that promote the use of ICT within Adult Education?
3. What are the inhibitors which impede the introduction and use of ICT in an adult education classroom?

3.5 Research Methodology

A literature review was undertaken which enabled the author to identify factors that other academics have recognised as either an aid or an obstacle to ICT integration. This provided the author with in-depth knowledge of the chosen

field. The author then explored various research methodologies to identify the most suitable approach for this study.

The next section analyses the advantages and disadvantages of two of the main methodologies associated with educational research.

3.5.1 Action Research

Action research has many definitions. Feldman and Minstrell (2000) define action research as "teachers researching their own practice of teaching. It is an enquiry into their teaching and their classroom". Carr and Kemmis (1986, p.3) state that action research is an exploration of oneself, to improve understanding of one's own practices. Most definitions of action research conclude that it is an investigation and analysis of current practices, which has the underlying assumption that improvements can be made (Cohen *et al* 2007).

Many authors (Hult and Lennung 1980; Mc Kernan 1991; Noffke and Zeichner 1987) have identified numerous advantages of using action research in education. Most notably, an increase in awareness of current teaching practices, improving the feelings of self-worth among teachers and it bridges the gap between research and reality. Action research is a highly reflective research mechanism.

Although effective, certain real-life disadvantages are inherent within action research. Zuber-Skerritt (1996) argues that it is difficult for action research techniques, conducted on a small scale to lead to new insights within a specific area. Other drawbacks include difficulties ensuring all parties have an equal say, shared values and as stated by Morrison (1998) shared ownership of practices.

For the purpose of this study, management, teachers and learners will be researched. Although they have a common interest in education, their respective reference points to it are different. This, in turn, can prove problematic for an action practitioner.

3.5.2 Case Study

Case studies have been identified by authors as an ideal approach to undertaking an in-depth investigation that enables worldwide literature to be examined in a real-life, local scenario (Gummesson 1991; Hamel *et al* 1993; Yin 1994). Anderson (1993) states that case studies are concerned with identifying why and how things happen. This allows for an identification of what is actually happening compared to what was actually intended. Tellis (1997) states although case studies are mainly used in law and medical schools, their uses in education are continually increasing.

Hitchcock and Hughes (1995) define a case study as a vivid description of a particular event relevant to a particular area. They further state that case studies can have a geographical border. Consequently, Noor (2008) and Yin (1994) declare that analysing case studies enables authors to reinforce theory as opposed to making generalisations about the entire research population. In addition, case studies aim to extract details from participants by using multiple collection methods (Tellis 1997). However, they need to be conducted correctly.

A major disadvantage of a case study approach would be to only select the evidence that supports the author's belief. This would result in a misrepresentation and distortion of research findings.

3.5.3 Methodology Chosen

For the purpose of this study the philosophical assumptions made by the author are ontological. Therefore, the author's aim was to examine reality in a particular setting. Consequently, for the reasons outlined above, it was decided to adopt a case study approach using interviews, observations and questionnaires as research methods. This ensures triangulation of data (Yin 1994) and therefore improves accuracy of results (Stake 1995).

3.6 Research Instruments

In order to increase the reliability and validity of the author's research, triangulation was conducted in this study, as both quantitative and qualitative data was obtained from all participants; management, teachers and learners.

Qualitative data is primarily used to identify perceptions and feelings on a topic and to ascertain peoples' opinions (Linehan and Cadogan 2007). Although effective, qualitative data is less susceptible to generalisations. In contrast, quantitative data allows for the collection of statistical data that can be easily analysed. For the purpose of this study, interviews and observations were used to obtain qualitative data and questionnaires were used to collect quantitative data.

3.6.1 Interviews

Interviews are a valuable mechanism to extract information from participants. The author of this study carefully designed the interview questions to ensure they were unambiguous. As noted by Hoyle *et al* (2002 p.144) interviews have the "...dual goals of motivating the respondent to give full and precise replies while avoiding biases...".

There are many different types of interview techniques such as structured interviews, semi-structured interviews and unstructured interviews. In this study, the author undertook semi-structured interviews, interviewing the co-ordinators from both programmes (Appendix C). Although semi-structured interviews do not have a predefined list of interview questions they provided the interviewee with a guide containing a list of issues to be addressed (Appendix B).

3.6.2 Observations

Observations are used to obtain information about the behaviour and actions of people in a particular situation. They are a useful research technique when the participants find it difficult to verbalise their actions.

The author of this study observed the eight teachers in the AETC to observe their teaching practice, thus identifying if they integrate ICT into their adult education classrooms (Appendix H). Observations also allowed the researcher to establish if ICT was more easily incorporated within particular teaching subjects or within a particular programme.

3.6.3 Questionnaires

Brace (2008) states that questionnaires are intricate measurement tools which need to be carefully calibrated to be reliable and interpretable. They are also responsive to the conditions in which they are administered. Questionnaires are potentially a valuable research mechanism as they have the potential to obtain substantial amounts of information from respondents.

The major drawback of administering questionnaires is response rates. Edwards *et al* (2002) outlined a number of ways to increase response rates. Most notably:

1. Ensure they are of interest to the respondents;

2. Contact all respondents prior to distributing questionnaires informing them of the purpose of the research;

3. Keep questionnaires short.

In this study, questionnaires were administered by hand, to all respondents, for self-completion. A separate questionnaire was designed for each category of recipients, both teachers and learners (Appendices D and E). Although some questions were similar, specific information was required from each group. Structured closed questions, Likert scales, rating scales and open-ended questions were used to obtain a holistic view of the chosen topic.

3.7 Sample Group

A sampling frame is defined as a list of the entire population from which, a sample is to be selected (Linehan and Cadogan 2007). In this study, the sampling frame was the management, teachers and learners in an AETC. The co-ordinators from both programmes were interviewed to identify the perceived factors that promote and hinder ICT integration from a managerial perspective. The eight teachers who teach within the VTOS and BTEI programmes were surveyed and observed to elicit both their views and actual teaching practices. A random sample of 30 learners, 15 from each programme were then asked to complete questionnaires to determine factors pertinent to them.

3.7.1 Limitations of Sample Group

This study was a specific investigation undertaken in one AETC. Although the sample selected provides indicators of the factors that promote and hinder ICT use in the AETC studied, as noted by Noor (2008), generalisation cannot be made to the entire adult education population.

In order to ensure an unbiased representation of the target population, a random sampling technique was chosen to select learners from each programme. This ensured that all members of this population had an equal chance of being selected. Irrespective of this, this research relies heavily on the personal opinions, feelings and the perceptions of all respondents, all of which are subjective in nature. To overcome this overdependence on personal judgements, triangulation was undertaken. This helped alleviate this problem and increase the validity of findings.

3.8 Reliability and Validity of Research

As previously stated, triangulation of data was utilised to ensure authenticity of results (Spencer *et al* 2003). Each research instrument used by the author was

selected to ensure that the results obtained would be reliable and valid. Personal interviews were used as they are a fast, effective research mechanism, when undertaken correctly. The interviews enabled the author to probe answers to obtain a more in-depth understanding of the topic. As the author has been trained on how to conduct interviews, the possibility of error or interviewer bias in this study was reduced.

Careful consideration was taken when observing teachers in their own classroom environment. Teachers were encouraged to proceed with their classes as normal so that accurate observations could be made.

Questionnaires were designed to sustain interest and to avoid any ambiguity. Closed-ended questions were used extensively for ease of completion by all respondents. These questions also ensured the removal of bias, as respondents simply ticked a box. Closed-ended questions also allow for easy analysis of data, thereby increasing validity and reliability. A selection of open-ended questions was also used. Although more difficult to analyse, more meaningful information can be obtained. Open-ended questioning encourages respondents to answer in their own words, thereby, not directing them to set answers.

The author of this study works within the AETC studied therefore is known to all respondents. This enabled all participants to be more comfortable engaging in the research process.

3.9 Data Analysis

Findings of the research were inputted into Microsoft Excel for statistical analysis. This allowed for the computerised creation of cross tabulations tables, statistical analysis and accurate graphical representation of results.

3.10 Ethical Considerations

To further ensure authenticity of results, ethical issues were considered and implemented by the author during all stages of the research. Prior to finalising the research questions, permission was sought and granted to undertake research in the AETC. Written permission was granted from the Adult Education Officer (AEO) who is responsible for adult education services in the county (Appendix A). It was decided and communicated to all parties that the AETC, as well as all participants in the research would not be identified, to ensure anonymity of all respondents. It was also agreed that research findings would be made available to any research participant who wished to view them.

As all teachers employed in the AETC were surveyed, a meeting was held with all teachers prior to commencing the research to inform them of the purpose of the research, how it was to be carried out and to reassure them that at no stage during the research would they be identified. Moreover, throughout the research phase, all data obtained from all respondents was securely stored by the author.

Informed consent was also used to select adult learners. This enabled the learners to "choose whether to participate in an investigation after being informed of facts that would be likely to influence their decision" (Diener and Crandall 1978, p. 57).

The next section of this study will present the finding obtained by the author.

Chapter Four
Findings

4.1 Introduction

This chapter presents the findings of the author's research. For the purpose of this study, the responses from teachers and learners surveyed were collated and firstly analysed as a group and then according to their programme of study (Appendices F and G). References to VTOS teachers and VTOS learners allude to teachers and learners exclusively attached to the VTOS programme. Similarly, references to BTEI teachers and BTEI learners allude to those who teach and study solely within the BTEI programme. Moreover, teachers who exclusively teach in BTEI will be referred to as Teacher A and Teacher B. VTOS exclusive teachers will be referred to as Teacher C, Teacher D and Teacher E.

The profile of respondents and data obtained from the three research methods were collated and the results found presented by research question.

4.2 Profile of Respondents

All eight teachers in the Adult Education and Training Centre are female. Half of the BTEI teachers are aged 31 – 40 while the remainder are aged 41 or over. Sixty seven per cent of the VTOS teachers are aged 31 – 40 and 33% are aged 41 or over. Of the two programmes delivered in the AETC, 25% of teachers teach exclusively within the BTEI programme, 37.5% teach exclusively in the VTOS programme and 37.5% teach across both programmes.

The teachers in the AETC have all taught adults in excess of five years. Indeed, 62.5% have taught adults for 5 – 9 years, 25% for 10 – 14 years and 12.5% for over 15 years.

These teachers deliver a range of courses in the AETC: Bookkeeping and Payroll, Computer Applications, Childcare, Leaving Certificate and Marketing. Leaving Certificate is the course which attracts the highest percentage of learners, with 40% of those surveyed enrolled in this programme. Consequently, four of the teachers surveyed deliver the Leaving Certificate programme (Fig. 4.1).

Figure 4.1: *Course taught in the AETC*

Thirty adult learners in the AETC were also surveyed, 15 from each programme. These learners comprised both female and male respondents, 73% female and 27% male. In this study, 40% of learners are aged 18 – 25, 10% are aged 26 – 30, 27% are aged 31 – 40 and 23% are aged 41 or over. The specific age profile of VTOS and BTEI learners is outlined below (Table 4.1).

	18 – 25	26 – 30	31 – 40	41+
VTOS	20%	13%	27%	40%
BTEI	60%	6.5%	26.5%	7%

Table 4.1: *Age profile by programme*

The learners surveyed are enrolled in various courses within the AETC with 16.7% studying Computer Applications, 26.7% studying Childcare, 40% studying Leaving Certificate, 10% studying Marketing and 6.6% studying Bookkeeping and Payroll. There are three computer suites in the AETC, two VTOS suites containing 30 personal computers (PCs) and one BTEI suite containing ten PCs.

This study found that 83% of learners have a home Internet connection, 87% have a personal e-mail address and 73% use computers at home on a daily basis. Therefore, these learners have some prior ICT knowledge and experience.

The next section will outline the findings obtained from all respondents.

4.3 Findings by Research Question

4.3.1 What is the role played by ICT within Adult Education?

This study found that ICT has a role to play within the adult education classroom. Teachers in the AETC use ICT for a wide range of activities (Fig. 4.2).

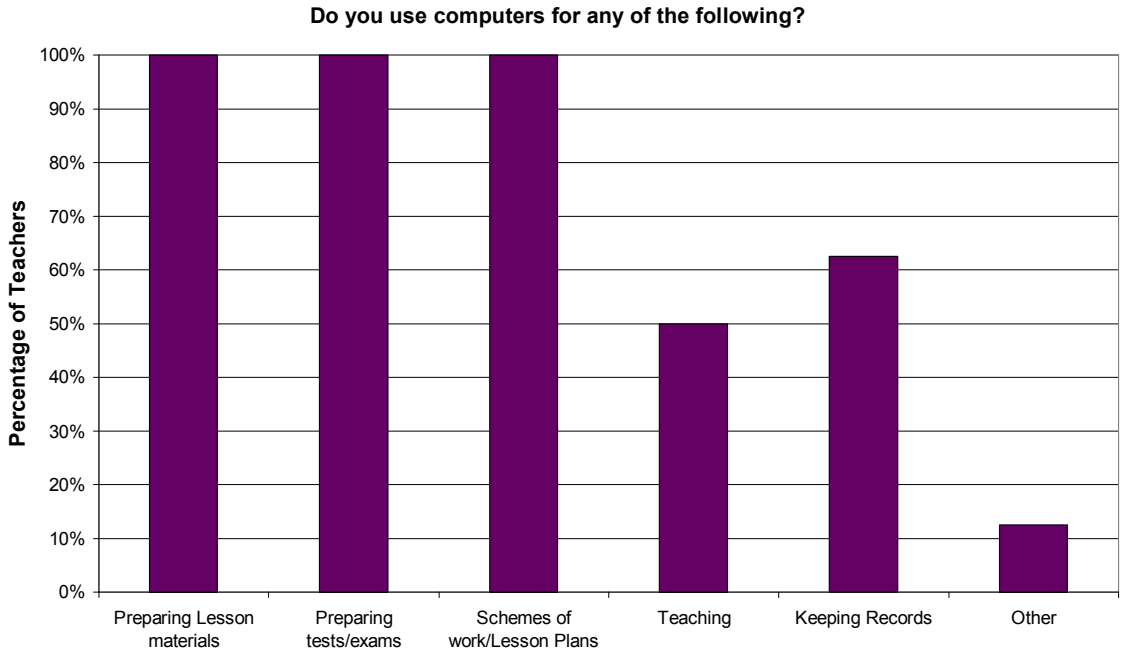

Figure 4.2: *Reasons for using computers*

This study found that the role of ICT within an adult education classroom depends on the programme of study. Although 67% of the VTOS teachers use ICT all the time in their teaching, 50% of the BTEI teachers use ICT occasionally. In this study, 100% of VTOS teachers and 50% of BTEI teachers believe they have sufficient ICT resources in their classroom.

This study ascertained that 67% of VTOS teachers would prefer to teach using ICT than use a more teacher-centred approach (Fig. 4.3).

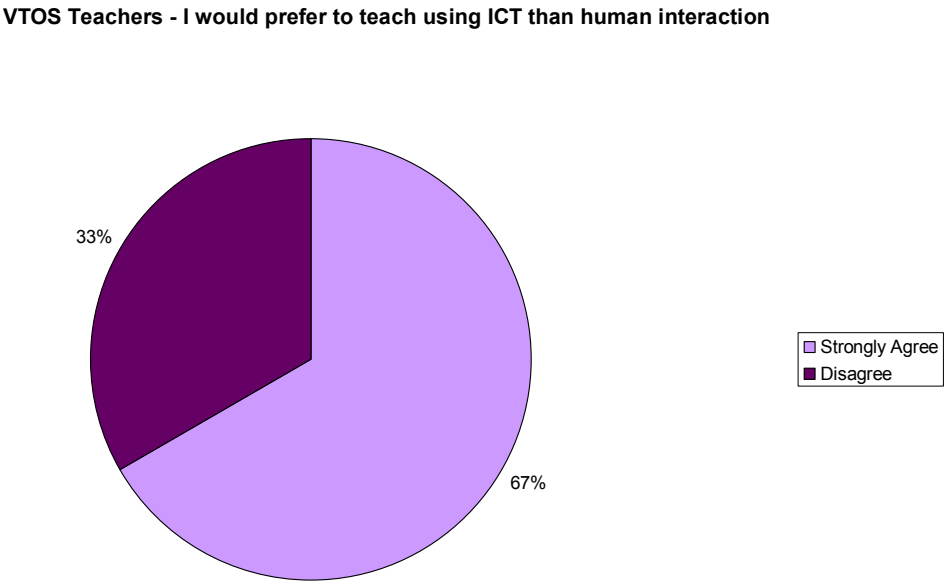

Figure 4.3: *VTOS teachers – ICT versus teacher-led interaction*

In contrast, all BTEI teachers in this study and 73% of the BTEI learners prefer teacher-led instruction as opposed to ICT-led. (Fig. 4.4)

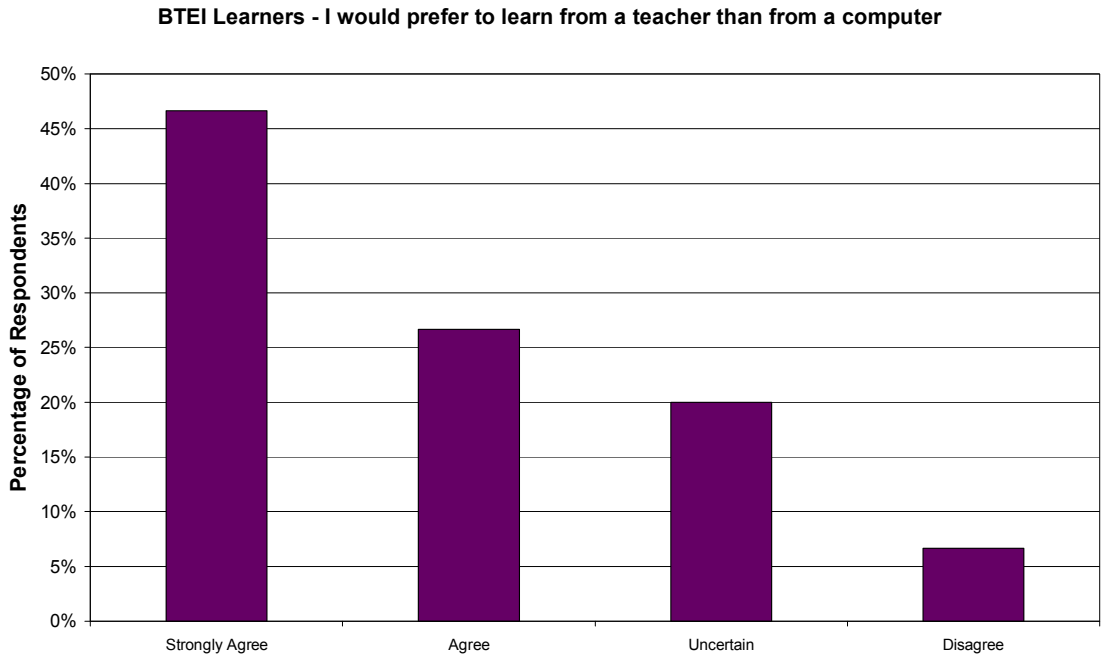

Figure 4.4: *BTEI learners – ICT versus teacher-led interaction*

When teachers in this study were asked if they believe adult learners prefer a more teacher-centred approach to learning, only 33% of VTOS teachers concurred as opposed to 50% of BTEI teachers. One BTEI teacher stated "Our learners prefer the teacher to direct the class, not technology" (Teacher A).

ICT's role within an adult education classroom is largely dependent on teachers' and learners' ICT experiences and perceptions. This study found that 100% of the VTOS teachers in the AETC are not afraid to use ICT. However, 50% of the BTEI teachers in this study indicated that they would be apprehensive towards ICT. Accordingly, this study has found a clear difference in opinion between VTOS and BTEI teachers in their perception of ICT.

This study found that consensus exists between all the learners regarding whether or not ICT frightened them with 80% of the BTEI learners (Fig. 4.5) and 86% of the VTOS learners (Fig. 4.6) agreeing or strongly agreeing with this.

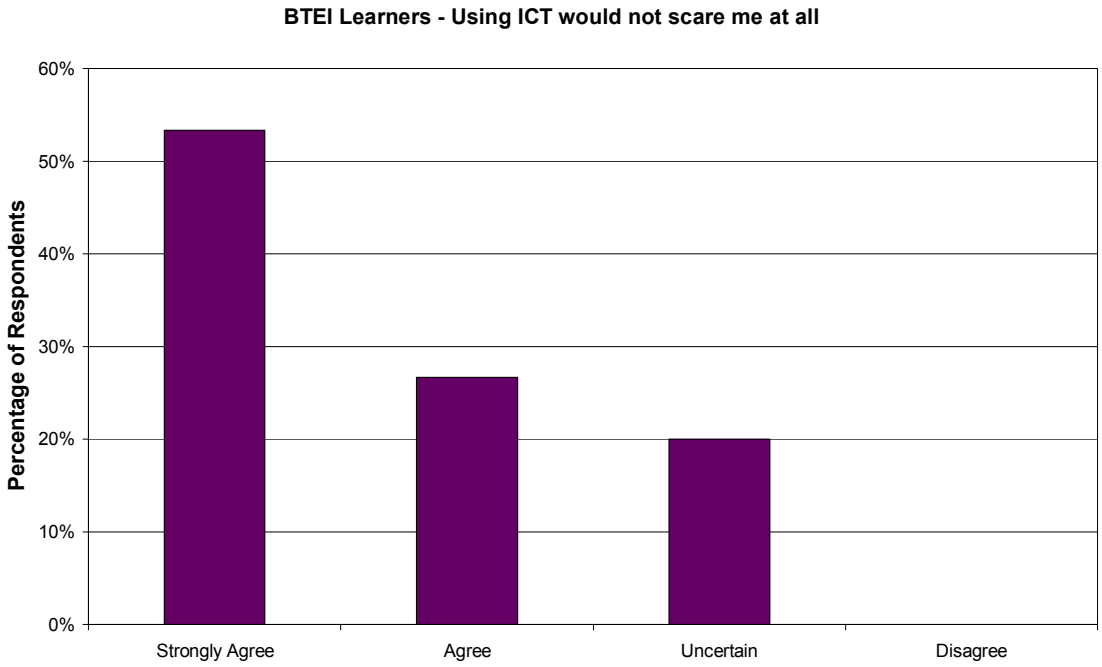

Figure 4.5: *BTEI learners – perception of ICT*

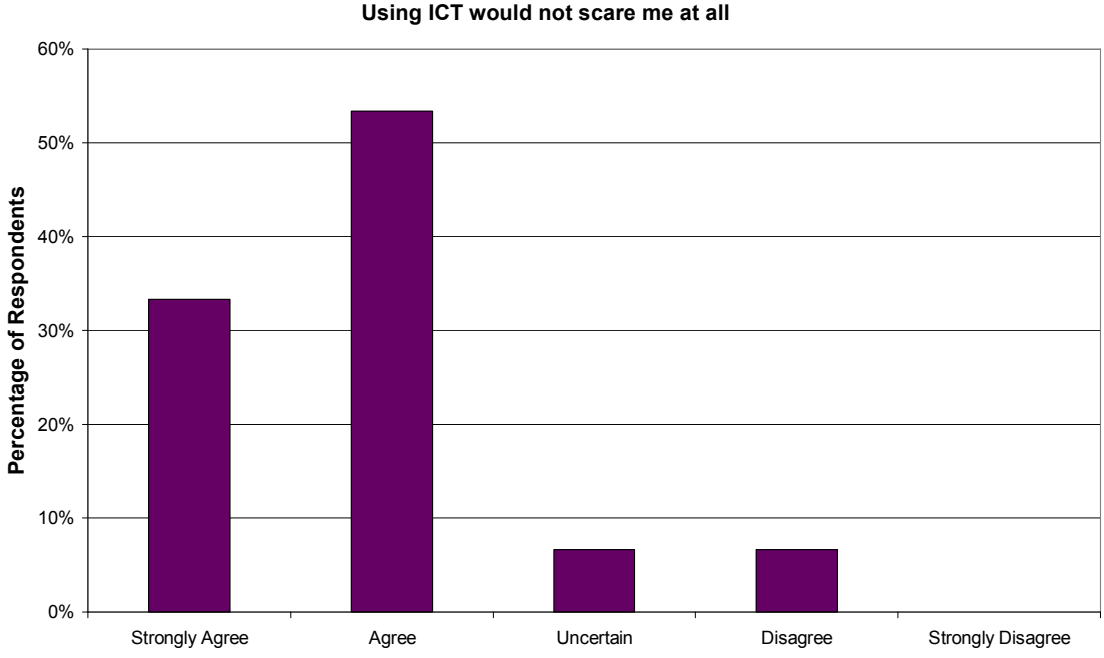

Figure 4.6: *VTOS learners – perception of ICT*

In this study, all teachers surveyed would like to use ICT in their teaching. Similarly, 87% of the VTOS learners and 94% of the BTEI learners would also

like ICT used within their specific area of learning. Moreover, all respondents feel it is important to have ICT skills in today's society.

A concern for teachers is the rapid changes in ICT technologies. Indeed, in this study, 37.5% of teachers believe that ICT technologies are changing too rapidly to keep up to date. These teachers are BTEI teachers as no VTOS teacher feels this is an issue. One BTEI teacher said;

"…the time it takes to prepare FETAC assignments, marking schemes and project briefs is substantial enough without having to keep up to date in the latest technologies…"

(Teacher B)

When asked if using ICT facilitates learners to learn at their own pace, 67% of both VTOS teachers and learners agreed. In marked contrast, 50% of the BTEI teachers surveyed and 60% of the BTEI learners surveyed were uncertain about the value of ICT in helping learners to learn at their own pace.

In this study, 100% of the VTOS teachers and 50% of the BTEI teachers believe adult learners would like to use ICT in their learning.

The next section will identify the factors that promote ICT use within an adult education classroom.

4.3.2 What are the factors that promote the use of ICT within Adult Education?

This study has highlighted that the factors that promote ICT within an adult education classroom are unequivocally linked to the specific adult education programme. This is mainly related to the ICT funding available for each programme. Interviews with both programme co-ordinators identified that in the 2009/2010 academic year, approximately €12000 was spent on ICT within the VTOS programme in areas such as ICT resources, ICT training for teachers and

ICT support and maintenance and only €3000 was spent within the BTEI programme.

The VTOS co-ordinator, who is the only co-ordinator permanently based on-site in the AETC, actively encourages VTOS teachers to integrate ICT in all lessons. Although the VTOS co-ordinator solely focuses on running the VTOS programme, all teachers, both VTOS and BTEI, regularly ask advice and guidance from the VTOS co-ordinator regarding all aspects of ICT. The BTEI co-ordinator manages all BTEI programmes in the county and therefore is not based on-site in the AETC.

The VTOS co-ordinator clearly sees the advantages inherent in using ICT within adult education:

> "…as a previous ICT teacher and having studied ICT, I realise that ICT has huge potential to sustain learners' interest and make their learning more interesting. I also think it helps teachers, as it provides them with new approaches to learning rather than the mundane chalk and talk approach".
>
> (VTOS co-ordinator)

Although the VTOS programme does not have a documented ICT plan, the VTOS co-ordinator is fully aware what ICT resources the AETC has, who has access to them and ensures that "all resources are the most up to date resources available to teachers and learners" (VTOS co-ordinator). The BTEI co-ordinator stated that BTEI teachers are also aware of what ICT resources are available: "all teachers know what resources are available and how to get them when they need them" (BTEI co-ordinator).

In this study, VTOS teachers and learners have abundant resources available to them (Fig. 4.7) with all VTOS teachers surveyed having a digital projector and a DVD player. In addition, 33% have a TV and 67% have a digital camera and a scanner.

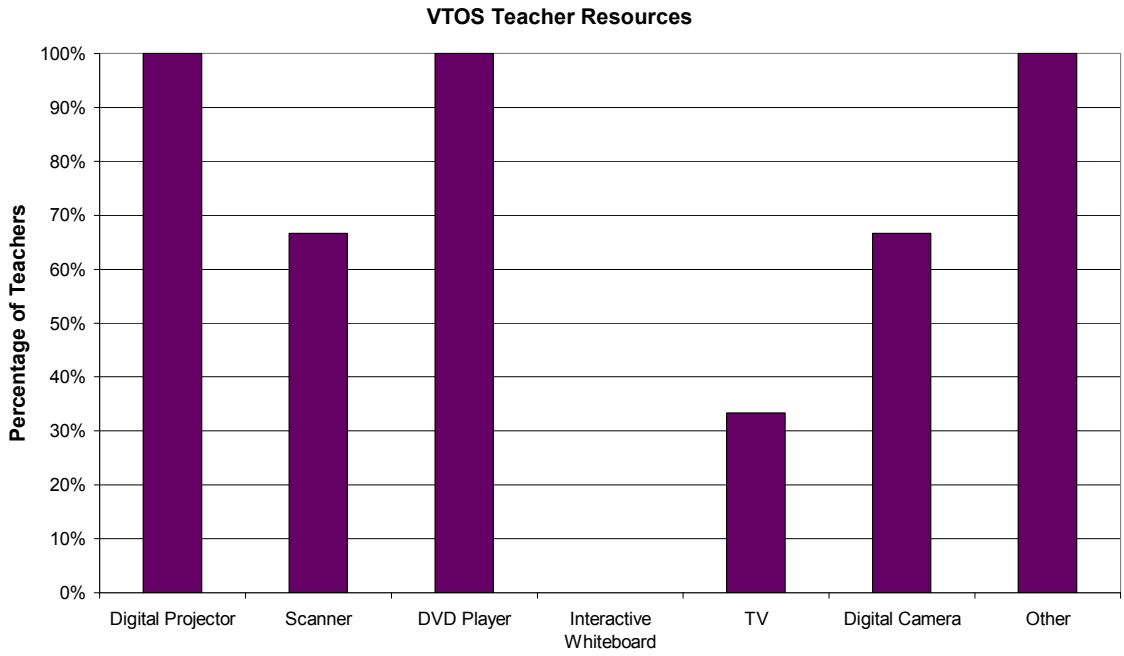

Figure 4.7: *VTOS teachers' resources*

Moreover, 87% of the teachers surveyed have a computer in their classroom. Indeed, 100% of VTOS teachers in this study are provided with a laptop and use it often. Half of all learner respondents also have access to a computer in their classroom, 67% of these are VTOS learners and 33% are BTEI learners. All VTOS learners use these computers often.

When asked how computers are used within the classroom, BTEI teachers state that they use computers for "PowerPoint use and Internet use" (Teacher A). BTEI learners use computers for "typing, printing" and for "assignments and Internet". VTOS teachers use computers for a wide range of activities such as "images, notes, topical events, maps" (Teacher C) and the "delivery of lessons, skills demonstrations, planning and preparation" (Teacher D). VTOS learners use classroom computers for "research, Microsoft Word, Excel, PowerPoint, OCR, Adobe Photoshop, Mapedit and Web Design".

In examining teachers' ICT training, it was found that 62.5% of the teachers surveyed have undertaken ICT courses. However, when analysed further it was found that all VTOS teachers have studied ICT either to postgraduate or Masters

Degree level. These VTOS teachers have also received formal on-site ICT training. Consequently, it was found that 67% of them use ICT all the time in their teaching (Fig. 4.8).

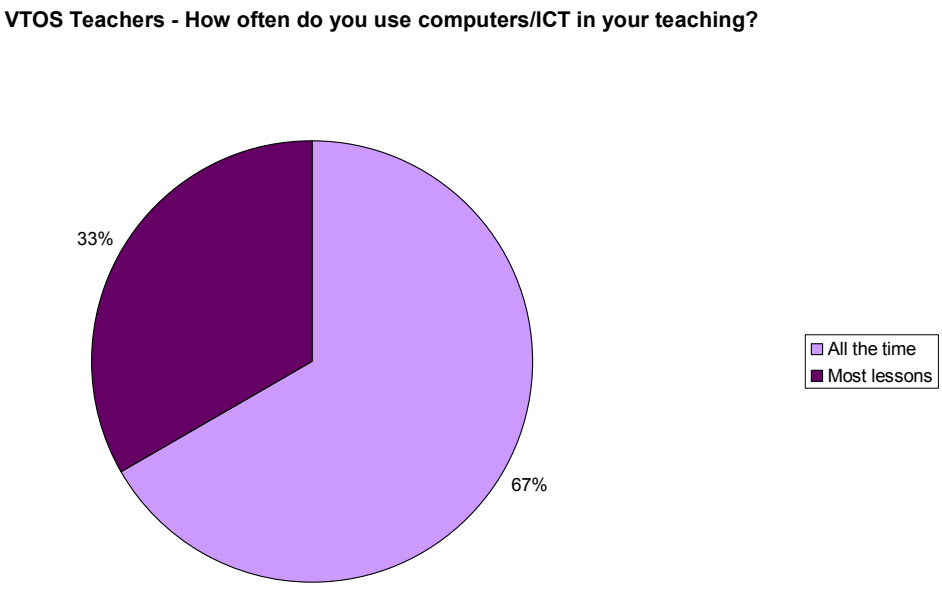

Figure 4.8: *VTOS teachers' frequencies of ICT use*

The author's observations found that VTOS teachers in the AETC actively use ICT in their teaching, irrespective of what they are teaching. These teachers are confident in using ICT within their specific subject area. Teachers of subjects such as Leaving Certificate or Childcare, who may not generally use ICT in their lessons, are actively doing so in this AETC. The VTOS co-ordinator aids all VTOS teachers who want to engage in ICT professional development courses.

"We have a policy here in the VEC to help fund professional development courses. If the course was needed for them to do their job then we would fully pay for the course, alternatively we would subsidise it to a maximum of €750"

(VTOS co-ordinator)

In this study, 47% of VTOS learners have undertaken previous ICT courses. These courses included ECDL, Basic Computers and Computerised Accounts and Payroll. Therefore ICT is not a new phenomenon for these learners.

Learners surveyed also have ICT experience from their previous learning environments with 63% of all learners stating this. Previous educational experiences afforded 67% of the BTEI learners (Fig. 4.9) and 60% of the VTOS learners (Fig. 4.10) the opportunity to use ICT.

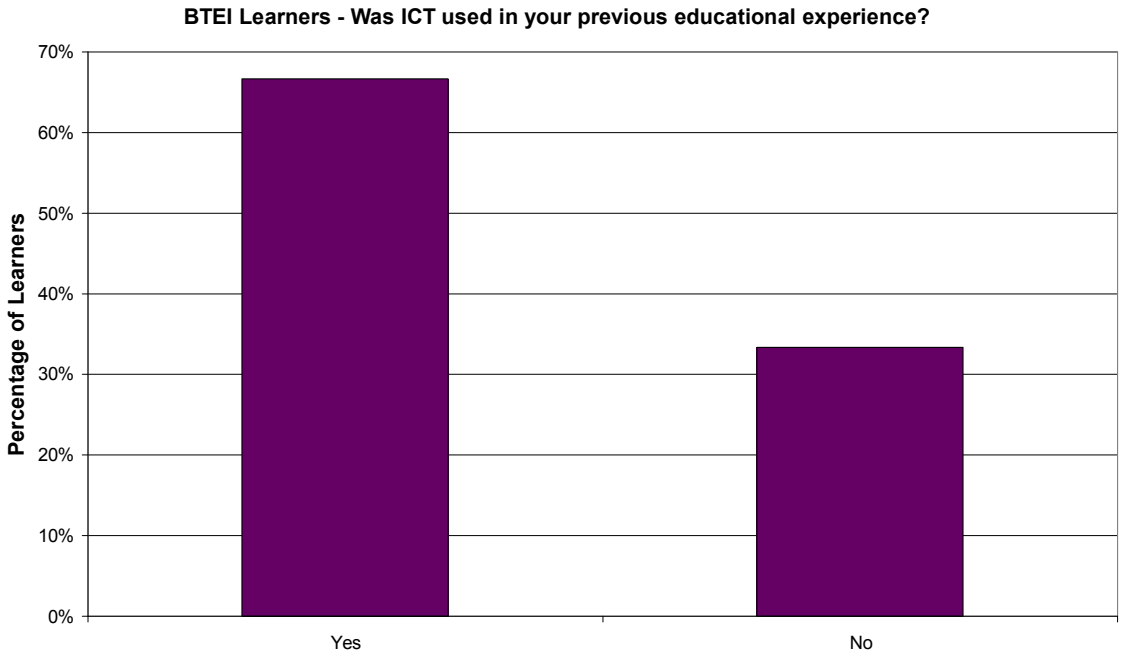

Figure 4.9: *BTEI learners' educational experiences of ICT*

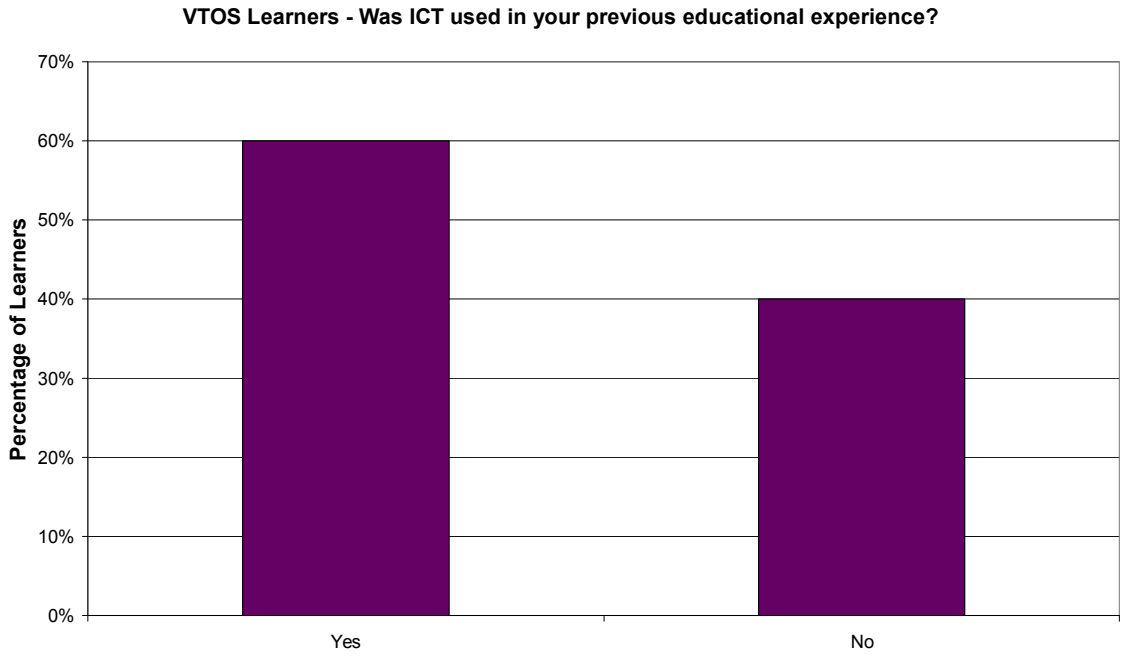

Figure 4.10: *VTOS learners' educational experiences of ICT*

Time can be a major obstacle in ICT use however in this study, 67% of VTOS teachers state that they have sufficient time to prepare ICT lessons. This study found that these VTOS teachers have supportive colleagues and a supportive co-ordinator to whom they can turn for help at any time. During the observations, one VTOS teacher was having difficulty with a digital projector and rather than waste class time, the teacher asked the VTOS co-ordinator for assistance and the problem was resolved quickly. VTOS teachers in this study are not afraid to ask for assistance in any aspect of ICT and know exactly where to seek advice.

In examining teachers' ICT competence levels, this study found that VTOS teachers in the AETC are highly knowledgeable in ICT and use a wide range of computer applications. Table 4.2 illustrates that in this study VTOS teachers use ICT either during most lessons or all the time in their teaching because they are familiar with many ICT applications.

VTOS Teachers					
Computer Application	**Level of Competence % of Respondents**				
	Very Good	Good	Fair	Poor	None
Word Processing	67	33	-	-	-
Spreadsheets	67	-	-	33	-
Databases	67	-	-	33	-
PowerPoint	67	-	33	-	-
Internet	100	-	-	-	-
E-mail	100	-	-	-	-
Web Authoring	67	-	-	33	-
Digital Photography	-	-	67	33	-
Video Editing	-	67	-	-	33
Scanning images	33	33	-	-	33
Software Development	-	33	33	-	33

Table 4.2: *VTOS teachers - ICT competence levels*

In this study 100% of the teachers surveyed and 60% of the learners surveyed state that learners would be more motivated to learn if ICT is regularly used in their lessons. "Confidence grows as students become more computer literate as well as enhancing job aspects for the future" (Teacher C). ICT "encourages independent thinking and learning" (Teacher E). ICT can "enrich the lesson by making it more interactive, a change from the textbook" (Teacher A) and "ICT opens up possibilities and has many advantages for work and home use. ICT allows for exploratory learning and learners are motivated by this" (Teacher D). Moreover, 63% of the adult learners in the AETC believe ICT enhances the overall learning experience. Indeed, one VTOS learner stated that using ICT in education "keeps you more up to date with modern technology".

All VTOS teachers in this study, believe that using ICT in a classroom would not decrease the learners' opportunity to interact with each other or affect the

interaction between them and learners. Furthermore, 67% of the VTOS learners concur (Fig. 4.11).

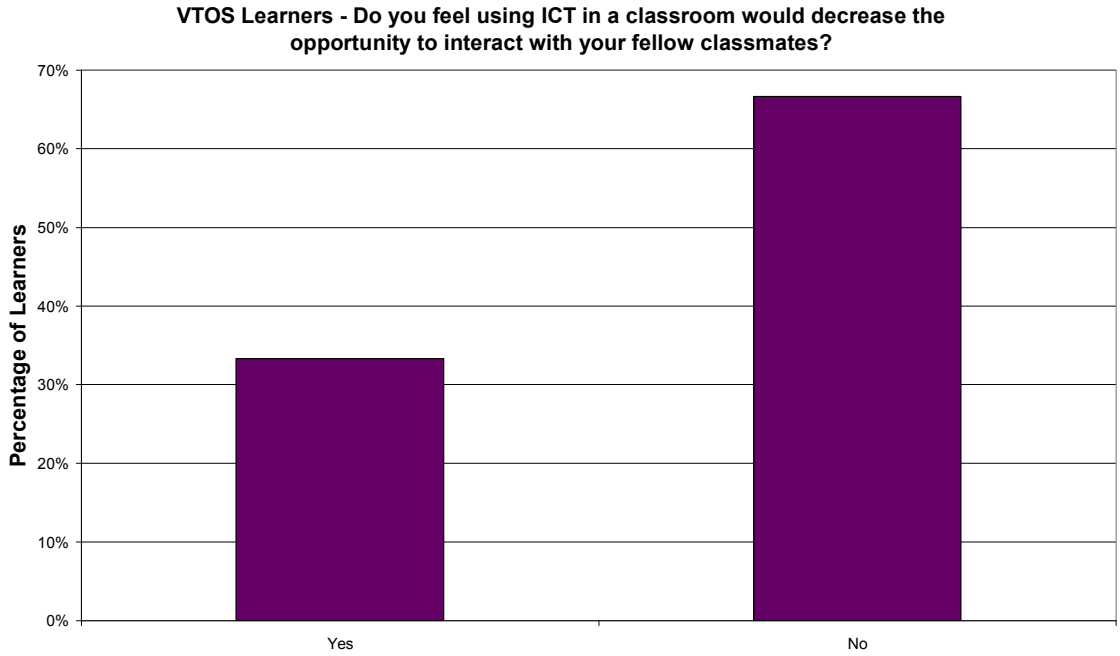

Figure 4.11: *VTOS learners - affect of ICT on interaction with peers*

As identified, many factors promote ICT use within an adult education classroom, namely: access to ICT resources; supportive co-ordinator; ICT training and qualifications of teachers; attitudes of teachers/learners; and funding.

The next section will identify the factors that have been found to be inhibitors to ICT use within the AETC.

4.3.3 What are the inhibitors which impede the introduction and use of ICT in an adult education classroom?

This study found that many of the factors preventing or hindering ICT use in an adult education classroom are programme specific. This study found that BTEI teachers and BTEI learners are being disadvantaged in this AETC due to lack of ICT funding. In the academic year 2009/2010, the BTEI co-ordinator spent €3000

on ICT in the AETC compared to €12000 spent on ICT within the VTOS programme.

An interview with the BTEI co-ordinator found that the BTEI co-ordinator understood the need for ICT use in education, stating "ICT allows for differentiated learning, some learners might prefer to learn one way and others a different way. ICT can play to everyone's needs". However, the BTEI co-ordinator further stated that;

"…some learners on my courses have not been in education for many, many years, if at all in some instances. They may prefer a more intimate approach to learning…"

BTEI co-ordinator

Both programmes in the AETC do not have a designated ICT co-ordinator or ICT technician. The VTOS co-ordinator stated "we don't have a designated person because unlike schools, we don't have post of responsibilities". Consequently, if any ICT problems occurred in the AETC, teachers approached the VTOS co-ordinator as the BTEI co-ordinator is not based on-site.

Neither programme in the AETC has a documented ICT plan. Although the VTOS co-ordinator knows what ICT resources are available and ensures that these resources are current, the BTEI co-ordinator was uncertain of the usefulness of an ICT plan.

When asked how often ICT is used in their teaching, no BTEI teacher in this study, said that they use ICT all the time. In the AETC, BTEI offers identical courses to those offered by VTOS, yet BTEI learners are being taught very differently due to the ICT resources available and BTEI teachers' lack of ICT confidence.

In this study, although the BTEI teachers state there are adequate ICT resources in the AETC and all have access to a digital projector, only half have a DVD player, a TV and a digital camera and only half have their own computer and use it often.

Therefore, BTEI teachers in the AETC have fewer ICT resources compared to VTOS teachers (Fig. 4.12).

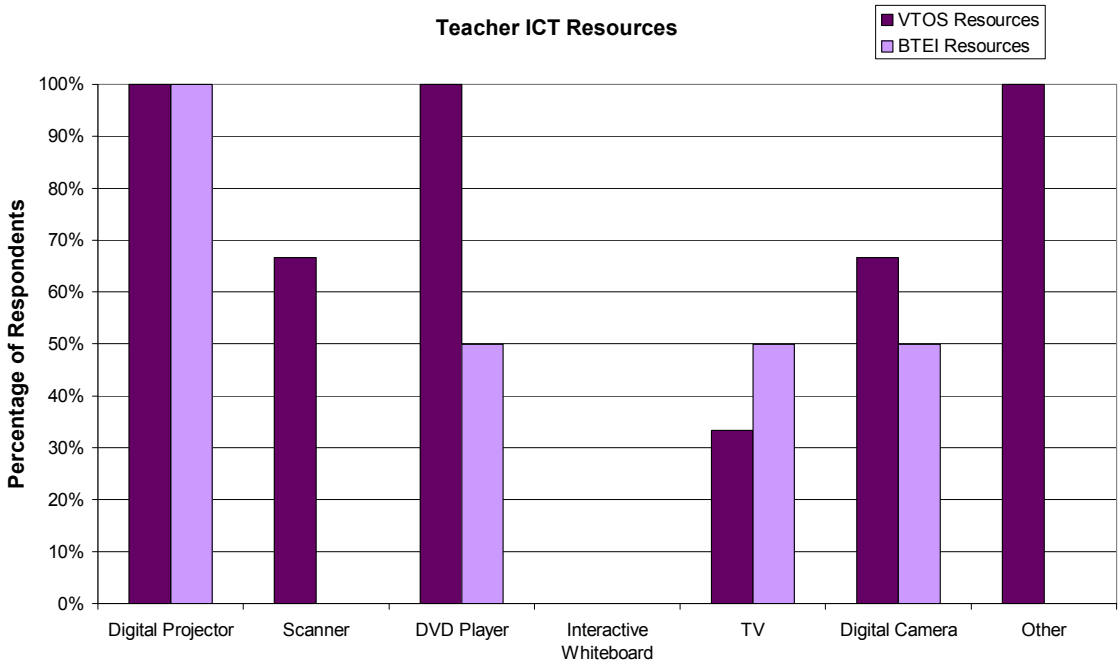

Figure 4.12: *Comparison of ICT Resources*

Similarly, only 33% of the BTEI learners surveyed have access to a classroom computer and 20% of these learners use them often. The author's observations show that BTEI teachers mainly use ICT in their teaching when they are using the resources of the VTOS programme.

BTEI teachers' ICT training is also an inhibitor to ICT use within their classrooms. In the AETC, only 50% of BTEI teachers have undertaken courses in ICT and no BTEI teacher has ever received on-site ICT training either formally or informally.

This study found that BTEI teachers are not adverse to using ICT in their classes, as 50% of them would use ICT more if they knew more about it (Fig. 4.13). "I know ICT can be motivating and if I had better ICT skills I would use it within the class" (Teacher B). Moreover, 73% of the BTEI learners are in agreement (Fig. 4.14).

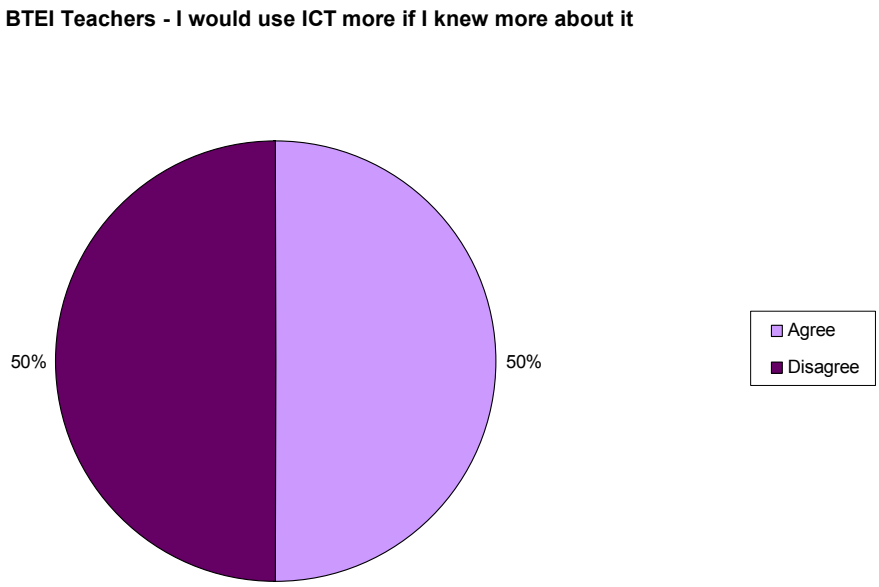

Figure 4.13: BTEI teachers' attitudes towards ICT

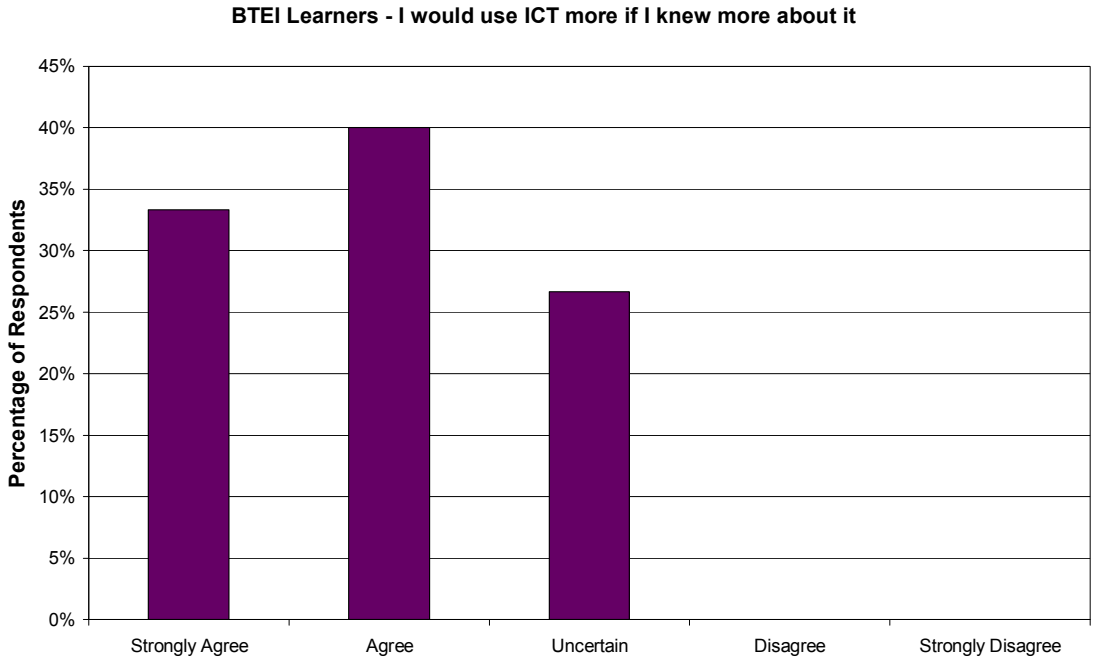

Figure 4.14: *BTEI learners' attitudes towards ICT*

In this study, 50% of BTEI teachers state that they do not have enough time to prepare ICT lessons and although all these teachers state that adequate ICT

resources are available in the AETC, only 50% of them believe they have sufficient ICT resources in their classroom. Access to ICT resources is a significant problem for BTEI teachers and learners, with 50% of BTEI teachers finding it difficult to avail of a computer room. One BTEI teacher stated that by using ICT "learning can be more interesting but I personally cannot access a computer room" (Teacher A).

Teachers' ICT competence levels have a direct link to the resources available (Table 4.3).

BTEI Teachers					
Computer Application	**Level of Competence % of Respondents**				
	Very Good	Good	Fair	Poor	None
Word Processing	-	-	100	-	-
Spreadsheets	-	-	50	50	-
Databases	-	-	50	-	50
PowerPoint	-	50	-	50	-
Internet	-	100	-	-	-
E-mail	-	50	-	50	-
Web Authoring	-	-	-	100	-
Digital Photography	-	-	-	100	-
Video Editing	-	-	-	100	-
Scanning images	-	-	-	100	-
Software Development	-	-	-	100	-

Table 4.3: *BTEI teachers - ICT competence levels*

In this study, 67% of the BTEI learners have used ICT in their previous educational experiences therefore, it could be assumed they would expect ICT to be used when accessing adult education. In this study, no BTEI teacher feels confident using ICT and only 50% feel experienced enough to incorporate ICT

into their lessons. One BTEI teacher stated ICT can add "an extra dimension, another angle but I wouldn't have the skills to use it" (Teacher B).

In direct comparison to VTOS teachers and learners, 50% of the BTEI teachers and 47% of the BTEI learners feel that using ICT in a classroom would decrease learners' opportunities for peer interaction.

This study has shown that inhibitors exist that impede ICT use within the AETC studied and these inhibitors are strongly linked to the programme of study.

4.4 Summary

This study has discovered a disparity in both attitudes towards and use of ICT between the two programmes within the AETC. This disparity appears to be due to the fact that the VTOS programme has access to more funding, ICT resources and ICT training than the BTEI programme. Moreover, in this study, VTOS teachers are better qualified, more competent and more confident in using ICT in their classrooms. As a result, learners within the VTOS programme are exposed to more positive ICT experiences than their peers in the BTEI programme.

Chapter Five
Discussions

5.1 Introduction

This chapter discusses the research findings in the context of the literature review and answers the research questions posed by the author. This discussion is presented by research question and explores how the author's study relates to existing knowledge in this area.

5.2 Discussion of Research Findings

5.2.1 What is the role played by ICT within Adult Education?

Previous literature on ICT integration within adult education found that many adult education teachers view using ICT as a distraction (Ginsburg *et al* 2000). Findings show that ICT integration within the AETC studied is entirely dependent on the adult education programme. There is a marked contrast between ICT uses within the VTOS programme compared to the BTEI programme. Although in this study, VTOS and BTEI teachers use ICT for many preparatory reasons including preparing lesson materials, tests/exams, schemes of work and lesson plans, 67% of VTOS teachers also use ICT all of the time in their teaching compared to 50% of BTEI teachers who only use ICT occasionally in their teaching. Consequently, these BTEI teachers support Ginsburg *et al* (2000) as they to do not necessarily see the need to integrate ICT in their lessons. Increased ICT use within VTOS can be attributed to many factors such as teachers' preferred teaching methods, their ICT training and competence levels and their increased opportunities to use ICT within their lessons.

In analysing and defining adult education theory, Knowles (1990) stated that adults are self-directed learners, who view learning as a practicality to get to

where they want to be. Jephcote *et al* (2008) further stated that by obtaining qualifications, adult learners' job prospects will improve and their standard of living will be enhanced. All respondents in this study believe ICT knowledge is crucial in today's society. Consequently, ICT must be integrated into an adult education classroom. In this study, VTOS teachers and learners realise the potential ICT can bring to their teaching and learning environments. Indeed, although all teachers in this study would like to use ICT in their teaching, ICT only plays an integral role within one programme, namely VTOS.

The ethos of the VTOS programme is to prepare adult learners for employment. Accordingly, this study found that VTOS teachers realise the benefits of using ICT in their classrooms as "ICT opens up possibilities and has many advantages for work and home use..." (Teacher D).

5.2.1.1 Learner-centred versus teacher-centred learning

This study found that a teacher's preferred teaching method is reliant on the adult education programme. In this study, 100% of the BTEI teachers and 73% of the BTEI learners prefer a teacher-led instructional approach. Although Ross and Schultz (1999) state that not all learners will learn more effectively if ICT is incorporated into lessons, VTOS teachers in this study disagree and would concur with Alexander (2000) who state that unless ICT is integrated into lessons, learners may be disadvantaged. One VTOS teacher in this study said that "confidence grows as students become more computer literate as well as enhancing job aspects for the future" (Teacher C).

In this study, 67% of VTOS teachers prefer to teach using ICT than use a more traditional teacher-centred method. Indeed, only 33% of the VTOS teachers and 50% of the BTEI teachers believe that adult learners also prefer a teacher-centred approach. In contrast, 94% of the BTEI learners and 87% of VTOS learners in the AETC studied would like ICT used within their lessons. Therefore, in the AETC studied, the views and aspirations of VTOS learners are being catered for,

whereas, those of BTEI learners are not. BTEI teachers do not accept or provide for the preferred learning style of their learners.

Adult education theory stipulates that when teaching adults, the teacher's focus should be on the learning process and not solely on the content being taught (Reischmann 2004). This supports the constructivist approach to learning whereby the learner actively builds upon their current and past knowledge (Lai 1993). In this study, high levels of ICT integration in VTOS can be attributed to VTOS teachers' and learners' previous ICT experiences and their perceptions of ICT. VTOS teachers in this study are not afraid to integrate ICT within their classes and are creating interactive approaches to learning, building upon the higher order thinking skills (Baron and Goldman 1994).

Comparatively, 50% of the BTEI teachers surveyed are apprehensive towards using ICT in their classroom. Although, Gardner (1993) states that the learning process should focus on the learner, BTEI teachers in the AETC studied are not doing this. They are teaching their learners in a method which they prefer and not necessarily the approach favoured of their learners. This may be linked to BTEI teachers' lack of ICT training, lack of support and limited ICT resources.

ICT possesses many multi-sensory elements (Abrams 1996) such as pictures, videos and animation which enable individual learners to learn in ways that meets learners' preferred learning styles. In this study, all the VTOS teachers believe their learners like ICT to be used in their learning. However, only 50% of the BTEI teachers agree. One BTEI teacher said "our learners prefer the teacher to direct the class, not technology" (Teacher B).

In addition, Light *et al* (1997) argue that using interactivity in a classroom allows learners to participate more, than in a traditional situation. In this study, 67% of VTOS teachers and learners feel that using ICT enables learners to learn at their own pace. In contrast, 50% of BTEI teachers and 60% of BTEI learners are uncertain of the need for ICT in facilitating learning at your pace. This may be linked to the lack of ICT experience among these target groups.

Cook and Finlayson (1999) argue that teachers should ascertain the ICT needs and experiences of their learners, as through this process they can build upon learners' existing knowledge. This study found that although VTOS teachers are fully aware and capable of fulfilling the ICT needs of their learners, BTEI teachers are not. As the BTEI programme has less ICT funding, BTEI teachers have less ICT training, resulting in an inability to cater for their learners' ICT needs.

5.2.1.2 Age

This study comprised both male and female learners, 73% female and 27% male. BTEI learners in the AETC account for the youngest learners, with 60% aged 18 – 25, whereas only 20% of the VTOS learners are within this age range. Indeed, 40% of VTOS learners in the AETC are aged 41 or over. Kolb (1984), in examining the affect of bringing life experiences to any learning situation, stated that in most instances, learning begins with concrete experiences of a topic/area. Learners then reflect on these experiences before understanding how this knowledge can be applied in any new learning. Due to the age range of learners in the AETC, it would appear that VTOS learners bring more life experience to a class than their BTEI colleagues.

The age of the adult education teachers, who are all female, is similar across programmes with all teachers aged over 30. Therefore, the age of these teachers should not impact upon ICT use.

This study found that each programme has factors that promote and hinder ICT use in this AETC. The next section will explore such factors.

5.2.2 What are the factors that promote the use of ICT within Adult Education?

This study found that many factors promote ICT use in this AETC. These factors are mainly associated with the VTOS programme including levels of ICT funding,

teachers' ICT training, the availability of ICT resources and accurate assumptions of learners expectations.

5.2.2.1 Funding

Pelgrum (2001) stated that many governments appreciate the importance of ICT integration in education and are therefore investing more into this area. Although in 2007, the Irish government allocated €252 million to support ICT integration in schools, no specific provision is currently in place for ICT funding within adult education.

VTOS and BTEI programmes receive an annual budget and each programme co-ordinator within each AETC decides how to allocate these funds. In this study, the level of ICT funding within VTOS is a promoter for ICT use in the VTOS classroom. The VTOS co-ordinator allocated €12000 in the 2009/2010 academic year to ICT which equates to 15% of VTOS' annual expenditure. This money was invested in areas such as ICT teacher training, updating and maintaining ICT resources and technical support. Consequently, VTOS teachers have access to a wide range of ICT resources and have opportunities to enhance their ICT knowledge.

5.2.2.2 Role of Management

Scrimshaw (2004) and Sheppard (2003) found that school leadership is integral to ICT use by teachers and crucial to changing teachers' existing classroom practices. This study concurs with this as the VTOS co-ordinator encourages VTOS teachers to use ICT in their classes and ensures they have the ICT resources they need. The VTOS co-ordinator is highly trained and competent in ICT and therefore, understands the benefits that ICT can bring to a classroom, stating ICT "sustain learners' interest and make their learning more interesting. I also think it helps teachers, as it provides them with new approaches to learning rather than the mundane chalk and talk approach" (VTOS co-ordinator).

5.2.2.3 ICT Planning

Findings show that no written ICT plan exists in this AETC. Despite this, the VTOS co-ordinator is very knowledgeable on one aspect of an ICT plan, namely, the identification of ICT resources. The VTOS co-ordinator is aware of the ICT resources available in the AETC stating "all resources are the most up to date resources available to teachers and learners". The BTEI co-ordinator believes that BTEI teachers are also aware what ICT resources they have access to, stating "all teachers know what resources are available and how to get them when they need them". However, ICT resources are only one element within an ICT plan and as such, attention must be given to the other components that are integral to a successful ICT plan.

5.2.2.4 ICT Co-ordinator and ICT Technician

To ensure the successful promotion of ICT in a classroom, Lai and Pratt (2004) found that schools should have a dedicated ICT co-ordinator. As AETCs do not have posts of responsibilities, no AETC has a dedicated ICT co-ordinator. Therefore, in this study, the role of the ICT co-ordinator is undertaken by the VTOS co-ordinator. The VTOS co-ordinator offers support and guidance on all areas of ICT integration.

In addition, the AETC studied does not have a dedicated on-site ICT technician. This role is also largely undertaken by the VTOS co-ordinator. Consequently, this study found that no VTOS teacher in the AETC is afraid to use ICT in their teaching as they know they can obtain assistance from the VTOS co-ordinator at any time. All BTEI teachers in the AETC also seek regular ICT technical advice from the VTOS co-ordinator, as the BTEI co-ordinator is not based on-site.

Alongside this, both programmes employ the assistance of an external ICT technician to maintain and update all ICT equipment, if and when needed. Woods *et al* (2005) assert that it is vital to have an expert ICT technician available as this

may alleviate the concerns of teachers who are less technologically aware and encourage them to use ICT in their classrooms.

In the AETC studied, the VTOS co-ordinator ensures that all ICT equipment is maintained and reliable. Butler and Sellbom (2002) state that to ensure ICT resources continue to be used in teaching and learning environments, teachers should know where to access ICT advice if needed. In this study, all teachers contact the VTOS co-ordinator should they need assistance on any ICT issue.

5.2.2.5 Access and Availability of ICT Resources

A disparity also exists across programmes within the AETC in relation to access to ICT resources. Toulouse (1997) asserts that everyone should have equal access to resources. Findings show that VTOS teachers and learners have access to a wide range of ICT resources. All VTOS teachers have a digital projector and a DVD player, 67% have a scanner and a digital camera and 33% have a TV in their classroom. Furthermore, 87% of all teachers in the AETC have a classroom computer.

In this study, both co-ordinators decide on the location of all ICT equipment. There are three computer suites in the AETC; two VTOS suites comprising 30 PCs and one BTEI suite with 10 PCs. The Department of Education and Science (2008b) state that most Irish post primary schools have one computer room with most computers located in that room. Although the AETC has two VTOS computer rooms, all VTOS teachers are also provided with a laptop. Mueller *et al* (2008) found that direct experience with ICT is more beneficial to teachers than simply providing them with sporadic access to ICT resources. Having a laptop ensures that any VTOS teacher who wishes to use a computer in their classroom has access to one. Cunningham *et al* (2003) states that having access to a personal laptop increases teacher ICT confidence and competence. This appears to be the case within VTOS in the AETC.

Adult learners in the AETC also have access to computers with 50% of all learners having a computer in their classrooms. However, 67% of these learners are VTOS learners and only 33% are BTEI learners. The ratio of computers to learners is 2.4:1 in VTOS and 5.8:1 in BTEI. Although all VTOS learners use computers often, it can be attributed to the fact that they have increased access to them. This further emphasises the disparity between programmes.

5.2.2.6 Role of the Teacher

Leslie (1994) stated that teachers must accept that they may not know everything of value to their learners but using ICT enables them to access an abundant amount of information. Moreover, Cuban *et al* (2001) state that ICT provides increased teaching resources. In this study, the BTEI teachers who use ICT occasionally in their classrooms mainly use it for "PowerPoint use and Internet use" (Teacher A). BTEI learners surveyed mainly use ICT for Internet searches or completing assignments. Comparatively, VTOS teachers and learners in the AETC use ICT for many reasons such as "images, notes, topical events, maps" (Teacher C) and "delivery of lessons, skills demonstrations, planning and preparation" (Teacher D). These VTOS teachers and learners can either understand the value of ICT in education or it may be attributed to the fact that they have more opportunities to use ICT.

5.2.2.7 ICT Training and ICT Confidence

The literature review shows that teachers' ICT training and experience can be linked to their level of ICT use. Although 62.5% of all teachers in the AETC have undertaken ICT courses, all VTOS teachers have an ICT qualification ranging from postgraduate qualifications to Masters Degrees. Mc Garr and Kearney (2009) found that ongoing ICT training and support ensures the holistic integration of ICT. In this study, the VTOS co-ordinator encourages all VTOS teachers to update their ICT skills and qualifications regularly. In contrast, little support or encouragement is provided by the BTEI co-ordinator.

Although no BTEI teacher has received any on-site ICT training, all VTOS teachers in this study have received on-site ICT training. The VTOS programme actively encourages and provides funding towards professional development courses for VTOS teachers.

Findings show that VTOS learners also have previous ICT training with 47% completing ICT courses and 60% using ICT in previous learning environments. Furthermore, 67% of the BTEI learners surveyed also have previous ICT educational experiences and 73% of all learners use computers daily at home. Consequently, these learners have some prior ICT knowledge that could be further developed, but this is not being fully addressed in the AETC.

5.2.2.8 ICT Knowledge and ICT Experience

Baylor and Ritchie (2002) state that ICT should be viewed as an additional teaching resource. However, Dwyer (1996) stated that many teachers are more concerned with teaching ICT than teaching with ICT. Findings show that VTOS teachers use ICT, regardless of their subject area. Although the VTOS programme offers a wide range of courses from Childcare to Leaving Certificate, all VTOS teachers in this study use ICT regularly in their teaching. These teachers feel competent in many computer applications. Indeed, all rate their knowledge of Internet and e-mail as very good and 67% rate their knowledge of word processing, spreadsheets, PowerPoint and databases as very good. This ICT proficiency may be why the VTOS teachers, in this AETC, have no apprehension towards using ICT in their classrooms.

Jamieson-Proctor *et al* (2006) found that if teachers are confident using ICT, learners will subsequently want to use ICT. In this study, 87% of VTOS learners and 94% of BTEI learners would like ICT used within their courses and all teachers and learners in this AETC feel it is important to have ICT skills in today's society.

5.2.2.9 Time

Al-Senaidi *et al* (2009) cite time and lack of support as two main reasons why ICT is not used in teaching. In today's dynamic ICT world, it can be difficult for teachers to regularly update ICT skills. In this study, 100% of the BTEI teachers feel this is an issue whereas no VTOS teachers cited this as a concern. ICT practice in the BTEI programme is restricted to the development of FETAC assessment materials within a shorter time frame than VTOS. In this AETC, although the same courses are delivered across both programmes, VTOS teachers get an additional six weeks to deliver the same courses. Consequently, 67% of VTOS teachers have sufficient time to prepare ICT lessons. Therefore, time and support have enabled ICT integration within this programme.

Although Dexter *et al* (2002) found that teachers believe that ICT is evolving rapidly and consequently teachers are continually learning, in this study, VTOS teachers do not feel technology is changing so fast that they cannot keep their skills up to date. This may be a direct result of the VTOS co-ordinator's and VTOS teachers' commitment to ongoing ICT training.

5.2.2.10 Perception of ICT

In today's society many learners, regardless of their age, expect ICT to be integrated in their education. As learners encounter technology from a young age (Sutherland *et al* 2000), they expect and demand a technologically enriched classroom and are comfortable using ICT to learn. Since 60% of the BTEI learners in this study are aged 18 – 25, these learners left the formal education system within the last ten years. This may account for 67% of them stating ICT was used in their previous educational experience. In contrast, 40% of the VTOS learners are aged 41 or over and subsequently ICT may not have been used in their previous educational experience. Despite this, VTOS learners could expect ICT to be used in adult education as ICT has infiltrated most other areas of society.

This study found that 86% of the VTOS learners are not afraid to use ICT in their lessons. This may be attributed to VTOS teachers' attitudes towards ICT and the high levels of ICT use within a VTOS classroom making it the norm.

5.2.2.11 Motivation

Kearsley (1998) states that using ICT in education enables teachers to bring real life scenarios to the classroom. In this study, one VTOS teacher said "ICT opens up possibilities and has many advantages for work and home use. ICT allows for exploratory learning and learners are motivated by this" (Teacher D).

Cohen *et al* (2004) believes that by encouraging and enabling learners to work at their own pace, learners will be more motivated and driven. In this study, all BTEI and VTOS teachers and 60% of all learners believe that learners would be more motivated to learn if ICT was regularly integrated into their education. All of the teachers and 63% of the learners in this AETC also believe ICT enhances the overall learning experience. One VTOS learner said using ICT in education "keeps you more up to date with modern technology".

5.2.2.12 Socialisation

Although effective, Pilkington *et al* (2000) found that ICT should not be used in isolation and believe that ICT exercises should also promote interaction among learners. In this study, all VTOS teachers and 67% of the VTOS learners believe that using ICT in their lessons does not decrease learners' opportunities to interact with each other.

There are many factors that promote ICT use within the AETC: the allocation of ICT funding to the VTOS programme; supportive VTOS co-ordinator and colleagues, technical support; abundant VTOS ICT resources; appropriate and adequate ICT training and confident and competent teachers and learners. Although many factors promote ICT use, the next section will address factors which hinder ICT use.

5.2.3 What are the inhibitors which impede the introduction and use of ICT in an adult education classroom?

Findings show that many factors inhibit ICT use within this AETC and these factors are mainly linked to the BTEI programme, such as lack of ICT funding, lack of support, lack of ICT training, lack of ICT resources and misconceptions of what learners want and expect.

5.2.3.1 Funding

In the 2009/2010 academic year, the AETC's BTEI programme only invested €3000 on ICT, 75% less than within VTOS. This equates to €52 per BTEI learner compared to €167 spent per VTOS learner. Consequently, this is a major drawback for the BTEI teachers and the BTEI learners. Although VTOS and BTEI programmes do not receive specific funding for ICT, the VTOS co-ordinator allocates substantially more funds to ICT than the BTEI co-ordinator. This may be attributed to the importance placed upon ICT within VTOS as opposed to BTEI and the attitudes and beliefs of each programme co-ordinator.

ICT is used more by teachers to plan than in their teaching practices (Department of Education and Science 2008a). This is the case for BTEI teachers in this AETC. Findings show that all BTEI teachers use ICT for planning and preparation yet only 50% use ICT in their teaching and those who do, only use it occasionally. This study found that BTEI teachers are reluctant to use ICT in their teaching due to a lack of ICT resources, lack of ICT training, lack of support and encouragement to use ICT and fear of ICT.

5.2.3.2 Role of Management

The AETC's BTEI co-ordinator acknowledges that ICT has many educational benefits stating that ICT "can play to everyone's needs". Indeed, a study conducted by Dawson and Rakes (2003), found that a school leader who is

technologically aware encourages teachers to use ICT in education. In this study, the BTEI co-ordinator states that although ICT should be used within education, many learners are reluctant to use it, believing that as many BTEI learners may have left formal education many years ago, they may not prefer an ICT-led approach and would "prefer a more intimate approach to learning". This is in direct contrast to what the BTEI learners actually want from their learning experience as 94% would like ICT used within their area of learning. This may be attributed to the fact that 67% have previous educational experience of ICT. By communicating more with the learners, the BTEI co-ordinator would be more aware of what BTEI learners want and expect from their current learning experience.

5.2.3.3 ICT Planning

NCTE (2002) state all schools should have an ICT plan that is adhered to and reviewed regularly. This study found that neither programme in the AETC has a documented ICT plan. The BTEI co-ordinator was unsure of the effectiveness of having a written ICT plan stating that "all teachers know what resources are available and how to get them when they need them". This lack of understanding may be attributed to the BTEI co-ordinator's lack of ICT training.

The author of this study believes that neither co-ordinator is fully aware of the purpose of having an ICT plan and concludes that having an ICT plan in place could inform all relevant personnel of some of the ICT irregularities across programmes.

5.2.3.4 ICT Co-ordinator and ICT Technician

Robertson *et al* (2007) states schools should also have an ICT technician. This would remove the onus from co-ordinators and teachers to maintain ICT equipment and enable them to concentrate on co-ordinating and teaching. Unlike post primary schools, adult education programmes do not have posts of responsibilities therefore, do not have a designated ICT co-ordinator or ICT

technician. Alongside this, the BTEI co-ordinator is not based on-site in the AETC as the BTEI co-ordinator manages all BTEI programmes throughout the county. Therefore, the BTEI co-ordinator is not readily available to support and aid ICT integration. This is an impediment to ICT use in the AETC studied. Although BTEI teachers regularly seek ICT support from the VTOS co-ordinator, who willingly assists them, there is no obligation on the VTOS co-ordinator to do this.

In agreement with Woods *et al* (2005), not having an ICT technician in the AETC means that less experienced teachers, namely BTEI teachers, are not using ICT within their classrooms. They fear something could go wrong and they will have no one to turn to who is directly responsible to support their needs.

5.2.3.5 Access and Availability of ICT Resources

In the AETC studied, the availability and access to ICT resources for the BTEI programme is limited. Unlike VTOS teachers who all have computers available in their classrooms, only 50% of BTEI teachers in the AETC have classroom computers. Moreover, although all BTEI teachers surveyed believe there are adequate ICT resources in the AETC, these teachers have access to fewer ICT resources than their VTOS colleagues with only 50% having a DVD player and a digital camera.

This study found that of the 50% of BTEI teachers who use ICT occasionally in their teaching, they mainly do so when they are using the VTOS ICT resources. Half of all BTEI teachers in the AETC find it difficult to access a computer room. One BTEI teacher said "learning can be more interesting but I personally cannot access a computer room" (Teacher A). Indeed, only 33% of the BTEI learners have access to a computer in their classroom and only 20% of these learners use them often. Although there are 58 BTEI learners in the AETC, these learners only have access to one computer suite containing ten PCs. This lack of access has proven to be an inhibitor to ICT integration in the AETC.

5.2.3.6 Attitude towards ICT

Eastwood *et al* (1998) stated that introducing ICT into a classroom may prove difficult as some teachers will be hesitant to change existing practices. In this study, BTEI teachers concur with Jager and Lokman (1999) who argue that ICT does not make the role of the teacher obsolete. This study found that 100% of the BTEI teachers in the AETC still prefer a teaching approach that is more teacher-led than ICT-led. This may be attributed to their lack of awareness, understanding and experience of ICT.

Although access to ICT resources is inhibiting ICT use in this AETC, other teacher-led factors exist such as, the teacher's attitude towards ICT. Comber *et al* (1997) state a learner's experience and attitude towards ICT within education will influence their attitude towards ICT in the future. To ensure the holistic use of ICT in the AETC, BTEI learners' and BTEI teachers' attitudes towards ICT must change. More ICT training and support can aid this process, in conjunction with a change in the BTEI co-ordinator's attitude towards the effectiveness of ICT in teaching and learning.

5.2.3.7 ICT Training, Experience and Confidence

Findings show that BTEI teachers do not receive ICT support or ICT training. Consequently, BTEI teachers are less qualified in ICT than their counterparts in VTOS with only 50% of them possessing ICT qualifications. In addition, no BTEI teacher has ever received on-site ICT training, either formally or informally. Due to this lack of ICT training, BTEI teachers are not confident using ICT in their teaching. This is placing BTEI learners in a disadvantageous position compared to their VTOS peers. Although similar and in some cases identical courses are offered in this AETC across both programmes, this study found that the failure of BTEI teachers to use ICT in education results in BTEI learners receiving a different learning experience than their VTOS counterparts.

Russell *et al* (2000) found that although teachers may be confident in basic ICT skills, some do not feel as confident in more advanced ICT skills. In this study this was found to be the case within the BTEI programme. When all teachers were asked to rate their competence levels in various applications, no BTEI teacher felt they had a very good knowledge of any computer application. Moreover, all BTEI teachers in the AETC rated their knowledge of many ICT applications as fair, poor or admitted having no knowledge at all. This lack of ICT knowledge can be attributed to the lack of exposure to ICT resources or level of ICT training.

5.2.3.8 Time

Haydn and Barton (2008) state that giving all teachers time to explore ICT with colleagues will enable them to see how to use ICT within their subject area. Although 50% of BTEI teachers in the AETC cited time as an inhibitor to ICT use in their classrooms, 50% are also apprehensive and feel inexperienced in ICT. Evers *et al* (2002) state that by having positive ICT experiences, teachers may begin to use ICT more in their classes. Spending time with their VTOS colleagues may be the necessary support needed for these teachers. As 50% of the BTEI teachers surveyed believe that ICT technologies are changing too rapidly for them to keep up to date, peer support and training would be advantageous to these teachers. By not updating their ICT skills regularly, technology could appear to them to be evolving much faster.

5.2.3.9 Socialisation

This study found that a perception that using ICT may restrict learners interacting with each other is impeding ICT use. Indeed, 50% of the BTEI teachers surveyed believe ICT decreases learners' opportunities for peer interaction whereas no VTOS teacher cited this as a concern. This may be partly attributed to BTEI teachers' lack of ICT training and awareness of how to make best use of ICT within their classrooms.

This study found that many inhibitors exist towards ICT use within the AETC and in most instances these impediments are programme specific.

5.3 Summary

This study found that the role and extent to which ICT is used within the AETC studied is dependent on the educational programme. Teachers and learners within VTOS have the advantage of having a supportive on-site co-ordinator, substantial ICT funding, adequate ICT training, sufficient ICT resources and teachers who realise the potential and necessity of using ICT in an adult education classroom.

In contrast, teachers and learners within the BTEI programme in the AETC have less ICT funding available to them, have access to fewer ICT resources, receive no ICT training and in many instances need to avail of the ICT resources and support from VTOS.

Chapter Six
Conclusion

6.1 Introduction

The Department of Education and Skills realise the importance of using ICT in Irish primary and post primary schools, as evidenced in the provision of €252 million for these sectors in 2007. Although additional ICT funding is not provided for adult education programmes, should ICT use in adult education not be treated with equal importance? To prepare for the world of work, adult learners cannot ignore the need to be competent in ICT. Consequently, adult education management and teachers need to realise the importance of effectively integrating ICT within an adult education classroom.

This chapter summarises the key findings of the author's study, makes appropriate recommendations and identifies areas for further research within this field.

6.2 The role of ICT within Adult Education

This study found that the manner in which ICT is viewed by management, teachers and learners determines if and how ICT is used within adult education. In this study, although ICT plays a significant role within the VTOS programme, ICT is not used to the same extent within the BTEI programme. VTOS teachers are afforded the opportunity to use ICT effectively in their classes thereby ensuring that their learners are better prepared for the world of work, which in today's society is largely ICT orientated. In contrast, BTEI learners are not provided with opportunities to learn and develop ICT skills, even though 94% of them would like ICT used in their classes.

In the AETC studied, the BTEI teachers prefer a teacher-centred approach to learning. Although ICT has the potential to create versatile learning environments

that meet the holistic needs of all learners, irrespective of their preferred learning style, it will take time to alter the existing teaching practices of these teachers.

In line with andragogical theories, ICT can bring real life scenarios to an adult education classroom. In the AETC studied, VTOS management and teachers realise this and subsequently place major emphasis upon ICT use. They believe that developing ICT skills is just as important as meeting the educational goals of the class. As a result, VTOS learners benefit from this approach. In comparison, BTEI management and teachers in this study, are hesitant to use ICT in their classrooms, due to insufficient ICT funding, scarce ICT resources and lack of ICT experience and confidence. Consequently, the BTEI programme is failing to meet BTEI learners' holistic needs.

This study found that BTEI teachers and learners would use ICT more if they knew more about it. Therefore BTEI management must realise the necessity for ICT use and offer the required funding, support, resources and training to BTEI teachers to ensure that their learners have the same ICT experiences and possibilities as their VTOS counterparts. Only then will the AETC studied be capable of providing all learners with the skills and opportunities necessary for adapting to an already ICT enriched workplace. As one of the aims of adult education is to prepare learners for the world of work, failure to fully integrate ICT and incorporate best practice across all adult education programmes is disadvantageous to those teachers and learners engaged in programmes where the full potential of ICT is neither fully recognised nor valued.

6.2.1 Recommendations

To promote further ICT use in adult education;

1. All educational personnel should be educated on the necessity for ICT proficiency in today's society. This awareness and understanding can be

achieved by providing adequate ICT funding, ICT training and ICT support for all teachers.

2. As some adult learners expect ICT to be used in their lessons, teachers should acknowledge this and tailor their classes to accommodate this.

6.3 Factors that promote and hinder ICT use in Adult Education

This study supports previous literature which outlines the role of management, teachers and learners in promoting and hindering ICT use in education.

6.3.1 Role of Management

Supportive on-site management who realise the importance of ICT within education is fundamental for effective ICT use. In this study, the VTOS co-ordinator who is based on-site is highly qualified in ICT and enthusiastically promotes ICT use within VTOS by providing and encouraging VTOS teachers to develop ICT skills. In contrast, although the BTEI co-ordinator acknowledges that ICT can meet the needs of differentiated learners, the BTEI co-ordinator is not based on-site and does not fully understand the BTEI learners' needs. Consequently, BTEI teachers in this study do not have the same supportive structure as their colleagues in VTOS. Although the VTOS co-ordinator tries to fulfil this supportive role for BTEI teachers, this is not the VTOS co-ordinator's responsibility.

Lack of appropriate ICT planning is evident in the AETC as neither programme has a written ICT plan. Although all BTEI teachers in this study feel there are adequate ICT resources in the AETC, they have access to fewer ICT resources than their VTOS colleagues. Producing a documented ICT plan could enable AETC and programme management to realise that a distinct difference exists between ICT uses across programmes.

In addition, the role of funding cannot be ignored. In the academic year 2009/2010, VTOS management spent four times more on ICT than BTEI management. Accordingly, in the AETC studied, VTOS teachers and learners have access to and make use of abundant ICT resources and are therefore confident and experienced in ICT. As BTEI teachers and learners in the AETC have infrequent exposure to ICT they are more apprehensive using ICT.

All adult education management must aim to be on-site to actively support and encourage all teachers to use ICT on a regular basis. For effective ICT integration in the classroom, all management must acknowledge that ICT is not an optional add-on to the existing curriculum or teaching practice.

AETCs do not have a dedicated ICT co-ordinator or ICT technician and unless government policy on assigning posts of responsibilities to AETCs changes, no AETC will ever have these positions and it will continue to be management's responsibility to ensure that the duties of these posts are carried out.

Both AETC and programme management must also understand that the creation of a comprehensive ICT plan is crucial to the successful promotion of ICT in the classroom. Only through conducting an ICT needs analysis, evaluating the current and future ICT situation within the AETC, will ICT be effectively used in the adult education classroom.

6.3.1.1 Recommendations

To promote ICT use within adult education:

1 Management should be located on-site, thereby more readily available to support and encourage all teachers to use ICT in their lessons.

2 The management of AETC's should prepare an ICT plan outlining the ICT resources available, the technological capabilities and experience of teachers, the technological needs and expectations of the adult learners, the

ICT support available and details of how ICT can aid teaching and learning.

3 The Department of Education and Skills should realise the importance for ICT support within adult education and accordingly assign ICT co-ordinators and ICT technicians to AETCs.

6.3.2 Role of the Teacher

Teachers' attitudes, experiences and levels of ICT training also affect ICT use within education. In the AETC studied, VTOS teachers are experienced and highly trained in ICT. Unfortunately, BTEI teachers are not afforded the same opportunities to develop or improve their ICT skills. Indeed, in the AETC, no BTEI teacher has received any on-site ICT training. Consequently, BTEI teachers are not as confident in ICT with only 50% using ICT occasionally in their lessons as opposed to 67% of VTOS teachers who use ICT on a regular basis in their teaching.

The accessibility of ICT resources is central to ICT use. In the AETC, all VTOS teachers are provided with laptops and each VTOS classroom is heavily equipped with ICT resources. This study found that on many occasions if BTEI teachers wished to use ICT resources they availed of those of their VTOS colleagues.

In the AETC studied, 50% of BTEI teachers believe that the time it takes to prepare ICT related lessons is hindering their ICT use. Comparatively, 67% of the VTOS teachers surveyed believe they have sufficient time to prepare ICT lessons. This may be attributed to the high level of ICT knowledge among VTOS teachers and the extra time given to VTOS teachers to deliver courses, making it easier and quicker to prepare lessons.

This study found that BTEI teachers in the AETC make inaccurate assumptions as to what their learners want and expect from their learning experience with 50%

assuming their learners prefer a teacher-centred approach when in fact 94% would like ICT to be integrated into their lessons. In contrast, VTOS teachers in the AETC acknowledge and can cater for their learners' preferred learning styles. The author concludes that although the aspirations and needs of VTOS learners are being catered for, those of BTEI learners are not.

Consequently, teachers' attitudes towards ICT are vital to ICT use within an adult education classroom. Teachers who are confident using ICT, adequately trained in ICT and encouraged to use ICT, regularly do so. Teachers can create positive ICT experiences for their learners. Familiarising themselves with ICT and accepting the importance of having ICT skills in today's society, will help to ensure that learners become competent and comfortable using ICT, a valuable skill to enhance learners' employment prospects.

6.3.2.1 Recommendations

To encourage ICT use within adult education:

1 ICT training should be offered to all adult education teachers.

2 If future lack of funding for a particular programme prevents an increase in ICT resources, management of all programmes within an AETC should pool all ICT resources and make them available to all teachers who wish to use them.

6.3.3 Role of the Adult Learner

Adult learners bring previous educational experiences to a classroom which may or may not involve ICT. From a young age, learners are now familiar with technology and therefore expect ICT to be used upon accessing adult education. However, 40% of the VTOS learners surveyed are aged over 41 and consequently, their previous educational experience did not always involve technology. A lack

of ICT experience among VTOS learners has not hindered their development of ICT skills in the AETC.

ICT creates motivational opportunities for adult learners as it can support their diverse needs and empower them by enabling them to work at their own pace. This study found that 67% of the adult learners surveyed believe ICT allows them to work at their own speed. Comparatively, only 50% of the BTEI learners surveyed concurred with this. The author concludes that the hesitation of these BTEI learners to realise the motivational aspects of ICT may be due to their lack of ICT experiences within the AETC studied or to a more sporadic and limited exposure to ICT than they were accustomed to in previous educational experiences.

All learners in this study accept that ICT enhances their overall learning experience and is an essential component in today's workplace. Previous literature stated that ICT can be perceived as a substitute for human interaction. In this study, although no VTOS teacher agreed, 50% of BTEI teachers believe that ICT does indeed decrease social interaction within the classroom. These teachers' socialisation concerns may by partly attributed to their lack of ICT exposure.

This study found that the learners with the most post primary ICT experience were the learners who had the least opportunities to learn using ICT within the AETC. These learners had a preconceived idea of what their learning experience would entail and the AETC did not meet the needs and expectations of these learners. This, in turn could actually result in a failure to motivate learners who expect ICT to be part of their learning process. It is ironic that learners' willingness and expectations to use ICT in the aforementioned learning is largely dependent upon the manner in which their teachers' introduce and utilise ICT.

6.3.3.1 Recommendations

To further promote ICT use, adult education teachers should;

1. Ascertain the previous ICT educational experiences of their adult learners and design courses based on the requirements of all learners.

2. Realise the necessity placed upon learners to become ICT competent in today's society.

6.4 Summary

As we live in a society that is highly dependent on ICT, the necessity for ICT use within an adult education classroom is essential. This study found that in the AETC studied, ICT is promoted and encouraged within VTOS as this programme has adequate ICT funding, has supportive management, is heavily ICT resourced and VTOS teachers are appropriately trained and competent in ICT. In contrast, the BTEI programme in the AETC has many factors hindering ICT use, namely poor ICT support, no ICT training for BTEI teachers, lack of adequate funding and limited ICT resources. The Department of Education and Skills, adult education management and teachers must realise and accept that education without adequate ICT provision is one that is failing to meet the holistic educational needs of adult learners. It is only when this situation is redressed that ICT within adult education can be treated with equal importance, as in the post primary sector.

6.5 Limitations/Recommendations for future study

This study was limited to one AETC which delivers two adult education programmes, namely BTEI and VTOS, therefore results obtained cannot be generalised to all AETCs throughout Ireland. Although factors that promote and hinder ICT use within these programmes are largely consistent with previous literature, the significant differences that exist between teachers and learners within one AETC are surprising. Research of AETCs at national level could identify if disparities exist across other adult education programmes and perhaps

encourage the Department of Education and Skills to address this issue and ensure that adult education is treated in parity with mainstream education.

Bibliography

Abrams, A. (1996) *Multimedia magic: Exploring the power of multimedia production*, Boston: Allyn and Bacon.

Akbaba, S. and Kurubacak, G. (1999) 'Teachers' attitudes towards technology', *Computers in the Social Studies*, 7(2), 833–836.

Aldrich, F., Rogers, Y. and Scaife, M. (1998) 'Getting to grips with "interactivity": helping teachers assess the educational value of CD-ROMs', *British Journal of Educational Technology*, 29(4), 321-332.

Al-Senaidi, S., Lin, L. and Poirot, J. (2009) 'Barriers to adopting technology for teaching and learning in Oman', *Computers and Education*, 53(3), 575–590.

Alexander, T. (2000) 'New OECD Initiatives on ICT, Education and Learning', accepted for *Dissolving Boundaries – ICT and Learning in the Information Age*, 4/5 May.

Anderson, G. (1993) *Fundamentals of Educational Research,* London: Falmer Press, 15–160.

Anderson, L. (1996) *K-12 Technology Planning at State, District, and Local Levels,* available: http://www.ericdigests.org/1996-4/k-12.htm [accessed 10 Dec 2009].

Baron, L. and Goldman, E. (1994) 'Integrating technology with teacher preparation' in Means, B., ed., *Technology and education reform*, San Francisco: Jossey-Bass Publishers, 81-110.

Baylor, A. and Ritchie, D. (2002) 'What factors facilitate teacher skill, teacher morale and perceived student learning in technology-using classrooms?', *Computers and Education*, 39(4), 395–414.

Becta (2002) *ICT Co-ordination in secondary schools,* Coventry: BECTA.

Becta (2004) A *Review of the Research Literature on Barriers to the Uptake of ICT by Teachers* [online], available: http://partners.becta.org.uk/page_documents/research/barriers.pdf [accessed 19 Dec 2009].

Bernard, M. and Philips, J. (2000) 'The challenge of ageing in tomorrow's Britain', *Ageing and Society*, 20(1), 33–54.

Billington, D. (1990) 'Developmental Aspects of Adult Education: A Comparison of the Traditional and Nontraditional Self-Directed Learning Programs', *Journal of Continuing Higher Education*, 38(1), 31–38.

Blake, R. and Sekuler, R. (2005) *Perception,* 5th ed., New York: Mc Graw-Hill Higher Education.

Bose, K. (2003) 'An e-learning experience – a written analysis based on my experience in an e-learning pilot project', *Campus-Wide Information Systems*, 20(5), 193–199.

Brace, I. (2008) *Questionnaire Design How to Plan, Structure and Write Survey Material for Effective Market Research*, London: Kogan Page Limited.

Butler, D. and Sellbom, M. (2002) 'Barriers to Adopting Technology for Teaching and Learning', *Educause Quarterly*, 25(2), 22–28.

Cadiero-Kaplan, K. (1999) 'Collaborative Technology Development: A Staff Development Model for Integrating Computers into School Curriculum', accepted for *Society for Information Technology and Teacher Education International Conference*, San Antonio, Texas, 28 Feb – 4 Mar.

Carr, W. and Kemmis, S. (1986) *Becoming Critical: Education, Knowledge and Action Research*, Lewes: Falmer.

Chambers 21st Century Dictionary (1996) Chambers: Edinburgh.

Chen, S. and Ford, N. (1997) 'Towards adaptive information systems: individual differences and hypermedia', *Information Research*, 3(2), available: http://informationr.net/ir/3-2/paper37.html [accessed 22 Dec 2009].

Cohen, L., Manion, L. and Morrison, K. (2004) *A Guide To Teaching Practice*, 5th ed., London: RoutledgeFalmer.

Cohen, L., Manion, L. and Morrison, K. (2007) *Research Methods in Education,* 6th ed., Abingdon: Routledge.

Comber, C., Colley, A., Hargreaves, D. and Dorn, L. (1997) 'The effects of age, gender and computer experience upon computer attitudes', *Educational Research*, 39(2), 123–133.

Cook, D. and Finlayson, H. (1999) *Interactive Teaching, Communicative Teaching*, Buckingham: Open University Press.

Cox, M., Preston, C. and Cox, K. (1999a) 'What Factors Support or Prevent Teachers from Using ICT in their Classrooms', accepted for *British Educational Research Association Annual Conference*, September 2–5.

Cox, M., Preston, C., & Cox, K. (1999b) 'What motivates teachers to use ICT?', accepted for *British Educational Research Association Annual Conference*, September 2-5.

Cuban, L., Kirkpatrick, H. and Peck, C. (2001) 'High access and low use of technologies in high school classrooms: Explaining an apparent paradox', *American Educational Research Journal*, 38(4), 813-834.

Cunningham, M., Kerr., K., McEune, R., Smith, P. and Harris, S. (2003) *Laptops for Teachers: An evaluation of the first year of the initiative*, London: Becta/DfES.

Dawson, C. and Rakes, G. (2003) 'The Influence of Principals' Technology Training on the Integration of Technology into Schools', *Journal of Research on Technology in Education*, 36(1), 29–49.

Department of Education and Science (2000) *Learning for Life: White Paper on Adult Education*, Dublin: The Stationery Office.

Department of Education and Science (2008a*) ICT in Schools promoting the quality of learning,* Dublin: Department of Education.

Department of Education and Science (2008b) *Investing Effectively in Information and Communications Technology in Schools 2008-2013*, Dublin: Department of Education.

Department of Education and Science (2009) *Implementation of Moratorium on Recruitment and Promotions in the Public Service,* [online], available: http://www.education.ie/servlet/blobservlet/cl0023_2009.doc [accessed 06 Jan 2010].

Dexter, S., Seashore, K. and Anderson R. (2002) 'Contributions of professional community to exemplary use of ICT', *Journal of Computer Assisted Learning*, 18(4), 489–497.

Diener, E. and Crandall, R. (1978) *Ethics in Social and Behavioural Research*, Chicago: University of Chicago Press.

Dillemans, R., Lowyck, J., Van der Perre, G., Claeys, C. and Elen, J. (1998) 'Review of New Technologies for Learning: Contribution of ICT to innovation in education', *Education and Information Technologies*, 4(1), 425–427.

Dwyer, D. (1996) 'A response to Douglas Noble: We're in this Together', Educational *Leadership*, 54(3), 24-26.

Dwyer, D., Ringstaff, C. and Sandholtz, J. (1991) 'Changes in Teachers' Beliefs and Practices in Technology-rich Classrooms', *Educational Leadership*, 48(8), 45–52.

Eastwood, K., Harmony, D. and Chamberlain, C. (1998) 'Integrating technology into instruction: How we became one of the best by simply listening', *Curriculum Technology Quarterly*, 7(3), 1–5.

Edwards, P. J., Roberts, I. G., Clarke, M. J., DiGuiseppi, C., Pratap, S., Wentz, R. and Kwan, I. (2002) 'Increasing response rates to postal questionnaires: systematic review', *British Medical Journal*, 324, 1183.

Eisenberg, M. B. and Johnson, D. (2002) *Learning and Teaching Information Technology – Computer Skills in Context* [online], available: http://www.ericdigests.org/2003-1/skills.htm [accessed 11 Dec 2009].

Empirica (2006) *Benchmarking Access and Use of ICT in European Schools 2006: Final Report from Head Teacher and Classroom Teacher Surveys in 27 European Countries*, Bonn: European Commission.

European Experts' Network for Educational Technology (1998) *How learning is changing: information and communications technology across Europe ICT in Education Policy*, Coventry: Becta.

Evers, W. J. G., Brouwers, A. and Tomic, W. (2002) 'Burnout and self-efficacy: A study on teachers' beliefs when implementing an innovative educational system in the Netherlands', *British Journal of Educational Psychology*, 72(2), 227–243.

Feldman, A. and Minstrell, J. (2000) *Action Research as a Research Methodology for the Study of the Teaching and Learning of Science*, available: http://www.pmfst.hr/~luketin/Physics_education/ZadarPrezentacija/FeldmanMinstrell2000.PDF [accessed 10 January 2010].

Fidishun, D. (2000) 'Teaching adult students to use computerized resources: utilizing Lawler's key to adult learning to make instruction more effective', *Information Technology and Libraries*, 19(3), 157–158.

Fisher, S. C. and Dove, M. K. (1999) 'Muffled Voices: Teachers' Concerns Regarding Technological Change', in Price, J., Willis, J., Willis, D. A., Muktha, J. and Boger-Mehall, S., eds., SITE 99: *Society for Information Technology & Teacher Education International Conference,* Charlottesville: *AACE,* 1338-1343.

Galbraith, M. (1994) 'Connecting Instructional Principles to Seld-Esteem', *Adult Learning*, 5(3), 24–25.

Gardner, H. (1993) *Frames of mind. The theory of multiple intelligences,* New York: BasicBooks.

Ginsburg, L., Sabatini, J. and Wagner, D. (2000) 'Basic Skills in Adult Education and the Digital Divide', in OECD, *Learning to Bridge the Digital Divide*, Paris: OECD, 79–89.

Goodson, I. F. and Mangan, J. M. (1995) 'Subject cultures and the introduction of classroom computers', *British Educational Research Journal*, 21(5), 613–628.

Gorard, S., Selwyn, N. and Williams, S. (2000) 'Must Try Harder! Problems Facing Technological Solutions to Non-participation in Adult Learning', *British Educational Research Journal*, 26(4), 507–521.

Gummesson , E. (1991) *Qualitative Methods in Management Research*, California: Sage Publication, 83 – 156.

Gurr, D. (2001) 'Principals, technology and Change', *The Technology Source*, September/October, available: http://technologysource.org/article/principals_technology_and_change/ [accessed 24 Dec 2009].

Hamel, J., Dufour, S., & Fortin, D. (1993) *Case study methods,* Newbury Park, CA: Sage Publications.

Hargreaves, A. (1994) *Changing Teachers Changing Times Teachers' Work and Culture in the Postmodern Age*, London: Teachers College Press.

Harrison, M. (1998) *Coordinating information and communications technology across the primary school*, London: The Farmer Press.

Haydn, T. and Barton, R. (2008) ''First do no harm': Factors influencing teachers' ability and willingness to use ICT in their subject teaching', *Computers & Education,* 51(1) 439–447.

Healy, J. M. (1998) *Failure to Connect: How computers affect our children's minds, for better and worse*, New York: Simon & Schuster.

Herselman, M. and Britton, K. (2002) 'Analysing the role of ICT in bridging the digital divide amongst learners', *South African Journal of Education*, 22(4), 270–274.

Hitchcock, G. and Hughes, D. (1995) *Research and the Teacher*, London: Routledge.

Hoyle, R. H., Harris, M. J. and Judd, C. M. (2002) *Research Methods in Social Relations*, London: Thompson Learning Inc.

Hult, M. and Lennung, S. (1980) 'Towards a definition of action-research: a note and bibliography', *Journal of Management Studies*, 17(2), 241 – 250.

Jager, A. K. and Lokman, A. H. (1999) 'Impact of ICT in education. The role of the teacher and teacher training', accepted for *European Conference on Educational Research*, 22-25 September.

Jamieson-Proctor, R. M., Burnett, P., Finger, G. and Watson, G. (2006) 'ICT integration and teachers' confidence in using ICT for teaching and learning in Queensland state schools', *Australasian Journal of Educational Technology*, 22(4), 511–530.

Jephcote, M., Salisbury, J. and Rees, G. (2008) 'Being a teacher in further education in changing times', *Research in Post-Compulsory Education*, 13(2), 163–172.

Kambouri, M., Mellar, H. and Logan, K. (2006) 'Adult Learners and ICT: An Intervention Study in Nejdl, W. and Tochtermann, K., eds., *EC-TEL, 2006, LNCS 4227. Book Series: Lecture Notes in Computer Science*, Springer-Verlag: Berlin Heidelberg, 213–226.

Kearsley, G. (1998) 'Educational Technology: a Critique', *Educational Technology*, 38(2), 47–51.

Keogh, H. and Downes, T. (1998) *VTOSpells Success*, Dublin: Department of Education and Science.

Kirkpatrick, H. and Cuban, L. (1998) 'Computers Make Kids Smarter – Right?', *Technos Quarterly*, 7(2), 26–31.

Knowles, M. (1990) *The Adult Learner: a neglected species*, 4th ed., Houston: Gulf Publishing.

Kolb, D. A. (1984) *Experiential Learning: experience as the source of learning and development*, New Jersey: Prentice-Hall.

Koohang, A. A. (1987) 'A study of the attitudes of preservice teachers toward the use of computers', *Education Communications Technology Journal* 35(3), 145–149.

Kosakowski, J. (1998) *The Benefits of Information Technology* [online], available: http://www.ericdigests.org/1999-1/benefits.html [accessed 27 Dec 2009].

Kozma, R. (2005) 'National Policies that Connect ICT-Based Education Reform to Economic and Social Development', *Human Technology*, 1(2), 117–156.

Kuittinen, M. (1998) 'Criteria for evaluating CAI applications', *Computers and Education,* 31(1), 1–16.

Lai, K. W. (1993) 'Teachers as Facilitators in a Computer-supported Learning Environment', *Technology, Pedagogy and Education*, 2(2), 127-137.

Lai, K. and Pratt, K. (2004) 'Information and communication technology (ICT) in secondary schools: the role of the computer co-ordinator', *British Journal of Educational Technology*, 35(4), 461–475.

Leach, J. and Moon, B. (2000) 'Pedagogy, information and communications technology and teachers' professional knowledge', *The Curriculum Journal*, 11(3), 385-404.

Leask, M. (2001) 'Electronic professional networks for teachers: political issues' in Leask, M., ed., *Issues in teaching and using ICT,* London: RoutledgeFalmer.

Leslie, J. (1994) 'Kids Connecting', *Wired Magazine,* available: http://www.wired.com/wired/archive/1.05/kids.connecting.html [accessed 01 Jan 2010].

Light, P., Colbourn, C. and Light, V. (1997) 'Computer mediated tutorial support for conventional university courses', *Journal of Computer Assisted Learning*, 13(4), 22-39.

Linehan, M. and Cadogan, T. (2007) *Make That Grade Marketing,* 3rd ed., Dublin: Gill and Macmillan.

Ling, P. (1996) *Frames of reference for evaluating new learning technologies* [online], available: http://www.aare.edu.au/99pap/lin99105.htm [accessed 24 Dec 2009].

Lockard, J., Abram, P., Many, W. (1994) *Microcomputer for Twenty-first Century Educators,* New York: HarperCollins College Publishers.

Mc Dougall, A., Squires, D., (1997) 'A Framework for Reviewing Teacher Professional Development Programmes in Information Technology', *Journal of Information Technology for Teacher Education*, 6(2), 115-126.

Mc Kernan, J. (1991) *Curriculum Action Research*, London: Kogan Page.

Mc Garr, O. and Kearney, G. (2009) 'The Role of the Teaching Principal ICT Use in Small Primary Schools in Ireland', *Technology, Pedagogy and Education*, 18(1), 87–102.

Madsen, J. and Sebastiani, L. (1987) 'The effects of Computer Literacy Instruction on Teachers' Knowledge of and Attitudes toward Microcomputers', *Journal of Computer-Based Instruction*, 14(2), 68–72.

Marshall, S. (2007) 'Engagement Theory, WebCT, and academic writing in Australia', *International Journal of Education and Development using ICT*, 3(2), 109–115.

Maslow, A. H. (1943) 'A Theory of Human Motivation', *Psychological Review*, 50(4), 370–396.

Means, B. and Olson, K. (1995) *Technology's role in education reform: Findings from a national study of innovating schools,* Washington: Department of Education, Office of Educational Research and Improvement.

Miller, L. and Olson, J. (1995) 'How technology is transforming teaching In Canada/How Computers Live in Schools ', *Educational Leadership*, 53(2), 74–77.

Morrison, K. R., B. (1998) *Management Theories for Educational Change*, London: Paul Chapman.

Mueller, J., Wood, E., Willoughby, T., Ross, C. and Specht, J. (2008) 'Identifying discriminating variables between teachers who fully integrate computers and teachers with limited integration', *Computers & Education,* 51(4), 1523–1537.

National Council for Curriculum and Assessment (2004) *Information and communications technology (ICT) in the primary school curriculum: guidelines for teachers*, Dublin: NCCA.

NCTE (2002) *ICT Plan Outline* [online], available: http://www.ncte.ie/ICTPlanning/ICTPlan/ [accessed 28 Dec 2009].

Noffke, S. E. and Zeichner, K. M. (1987) 'Action research and teacher thinking', accepted for *Annual Meeting of the American Educational Research Association*, April 20-24.

Noor, K. B. M. (2008) 'Case Study: A Strategic Research Methodology', *American Journal of Applied Sciences*, 5(11), 1602-1604.

O' Donnell, J. (1996) 'The Digital Challenge', *Wilson Quarterly*, 20, Winter 1996, 48-49.

Oliver, R. and Omari, A. (2001) 'Student responses to collaborating and learning in a web-based environment', *Journal of Computer Assisted Learning*, 17(1), 34–47.

Oppenheimer, T. (1997) 'The Computer Delusion', *The Atlantic Monthly*, 280(1), 45 – 62.

Pachler, N. (2001) 'Connecting schools and pupils: to what end? Issues related to the use of ICT in school based learning' in Leask, M., ed., *Issues in teaching and using ICT,* London: RoutledgeFalmer.

Pelgrum, W. (2001) 'Obstacles to the integration of ICT in education: results from a worldwide educational assessment', *Computers & Education*, 37(2), 163–178.

Pilkington, R., Bennett, C. and Vaughan, S. (2000) 'An Evaluation of Computer Mediated Communication to Support Group Discussion in Continuing Education', *Educational Technology and Society*, 3(3), 349–360.

Pye, J. (1999) 'Perspectives of ICT in professional development and education', *Information Services and Use*, 19(4), 307–312.

Reischmann, J (2004) *Andragogy. History, Meaning, Context, Function* [online], available: http://www.uni-bamberg.de/fileadmin/andragogik/08/andragogik/andragogy/Andragogy-Internet.pdf [accessed 16 Dec 2009].

Ringstaff, C. and Kelley, L. (2002) *The Learning Return on Our Educational Technology Investment: A review of Findings from Research*, San Francisco: WestEd.

Robertson, M., Webb, I. and Fluck, A. (2007) *Seven Steps to ICT Integration*, Camberwell: Australian Council Educational Research (ACER Press).

Rosen, L. D. and Weil, M. M. (1995) 'Computer availability, computer experience and technophobia among public school teachers'. *Computers in Human Behavior,* 11(1), 9-31.

Ross, J. and Schulz, R. (1999) 'Can computer-aided instruction accommodate all learners equally?', *British Journal of Educational Technology*, 30(1), 5–24.

Russell, G., (2002) 'Constructivist vs. Behaviorist A Search for the Ideal Learning Environment', accepted for *BMED Seminar,* November 6.

Russell, G., Finger, G. and Russell, N. (2000) 'Information Technology Skills of Australian Teachers: implications for teacher education', *Journal of Information Technology for teacher Education*, 9(2), 149–166.

Scanlon, L. (2008) 'Adults Motives for returning to study: the role of self-authoring', *Studies in Continuing Education*, 30(1), 17–32.

Schlumpf, J. (1991) 'Empowering K-12 teachers', *Technological Horizons in Education*, 18(9), 81–82.

Scott, R. and Robinson, B. (1996) 'Managing technological change in education – what lessons can we all learn?' *Computers and Education,* 26(1–3), 131–134.

Scrimshaw, P. (2004) *Enabling Teachers to make successful use of ICT*, Version 1, Coventry: Becta.

Selwyn, N. (1997) 'Teaching information technology to the 'computer shy': a theoretical perspective on a practical problem', *Journal of Vocational Education and Training*, 49(3), 395–408.

Selwyn, N., Gorard, S., Furlong, J. and Madden, L. (2003) 'Older adults' use of information and communications technology in everyday like', *Ageing and Society*, 23(5), 561–582.

Sharpe, J., Potter, J., Allen, J. and Loveless, A. (2001) *Primary ICT Knowledge, Understanding and Practice*, Exeter: Learning Matters Ltd.

Sheppard, B. (2003) 'Leadership, Organizational Learning, and the Successful Integration of Information and Communication Technology in Teaching and Learning', *International Electronic Journal for Leadership in Learning*, 7(14), available: http://www.ucalgary.ca/iejll/sheppard [accessed 15 Dec 2009].

Shiel, G. and O Flaherty, A. (2006) *NCTE 2005 Census on ICT Infrastructure in Schools*, Dublin: NCTE.

Smith, M. K. (2001) 'David A. Kolb on experiential learning', *The Encyclopaedia of Informal Education*', available: http://www.infed.org/biblio/b-explrn.htm [accessed 05 Dec 2009].

Spencer, L., Ritchie, J., Lewis, J. and Dillon, L. (2003) *Quality in Qualitative Evaluation: A framework for assessing research evidence*, London: Crown copyright.

Stake, R. (1995). *The art of case research*. California: Sage Publications.

Strommen, E. and Lincoln, B. (1992) 'Constructivism, Technology and the Future of the Classroom', *Education and Urban Society*, 24(4), 466–476.

Sutherland, R., Facer, K., Furlong, R. and Furlong, J. (2000) 'A new environment for education? The computer in the Home', *Computers and Education,* 34(3-4), 195–212.

Tearle, P. (2003) 'ICT Implementation: what makes the difference' *British Journal of Educational Technology*, 34(5), 567–583.

Tellis, W. (1997) 'Introduction to Case Study', *The Qualitative Report*, 3(2), July.

Toulouse, C. (1997) 'Introduction', in Toulouse, C. and Luke, T., eds., *The Politics of Cyberspace*, London: Routledge, 1–16.

Townsend, M. (1997) 'Computer block-does it exist in the comprehensive secondary school?', *British Journal of Educational Technology,* 28(3), 219-221.

TUI (2010) *Directive on Posts of Responsibility* [online], available: http://www.tui.ie/_fileupload/Directive%20on%20Posts%20of%20Responsibility.pdf [accessed 12 Jun 2010].

Vanderlinde, R., Van Braak, J., De Windt, V., Tondeur, J., Hermans, R. and Sinnaeve, I. (2008) 'Technology Curriculum and Planning for Technology in Schools: The Flemish Case', *TechTrends: Linking Research and Practice to Improve Learning*, 52(2), 23–26.

Vrasidas, C. and McIsaac, M. (2000) 'Principles of Pedagogy and Evaluation for Web-based Learning', *Education Media International*, 37(2), 105-111.

Vygotsky, L. (1978) *Mind in society: The development of higher psychological processes*, Cambridge: Harvard University Press.

Weeks, B. (2000) *What are the most efficient teaching strategies for Information Technology in the Early Years*? [online], available: http://primary.naace.co.uk/curriculum/earlyyears/it.htm [12 Dec 2009].

Williams, D., Wilson, K., Richardson, A., Tuson, J. and Coles, L. (1998) *Teachers' ICT Skills and Knowledge Needs Final Report to SOEID* [online], available: http://www.scotland.gov.uk/library/ict/append-title.htm [accessed 14 Dec 2009].

Wise, E., (1997) *Technology and the New Professional Teacher; Preparing the 21st Century* [online], available: http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/14/fd/e2.pdf [accessed 20 Dec 2009].

Wishart, J. and Blease, D. (1999) 'Theories underlying perceived changes in teaching and learning after installing a computer network in a secondary school', *British Journal of Educational Technology*, 30(1), 25-41.

Woods, E., Mueller, J., Willoughby, T., Specht, J. and Deyoung, T. (2005) 'Teachers' perceptions: Barriers and supports to using technology in the classroom', *Education, Communication, & Information,* 5(2), 183–206.

Yin, R. (1994) *Case study research: Design and* methods, ed., Beverly Hills, CA: Sage Publishing.

Zuber-Skerritt, O. (1996) 'Introduction' in Zuber-Skerritt, O., ed., *New Directions in Action Research*, London: Falmer, 3-9.

Appendices

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Appendix A

Permission to conduct Research

Ms. Joanne Irwin
Adult Education and Training Centre
[redacted]

1st November 2009

Re: Permission to Carry Out Research

Dear Joanne

I refer to your e-mail correspondence of the 1st November 2009 in relation to research for your thesis as part of the Master of Arts in Digital Media Development for Education at the University of Limerick.

I am pleased to advise that I have no issues with you conducting the research as described previously at the Adult Education and Training Centre, [redacted]. I ask that you will ensure that all matters relating to credibility and reliability are adhered to. I also emphasise the need to outline all matters relating to confidentiality before commencing the research.

I would like to wish you every success with your work and I look forward to reading the findings of your research.

Kind Regards

Mise le meas

[redacted]

[redacted]

Adult Education Officer

[redacted]

Appendix B
Interview Questions

I would like to take this opportunity to thank you for agreeing to be interviewed today. I would like to remind you again that at no stage during the interview will you be required to identify yourself. The answers you provide will be treated confidentially.

1. What programme do you currently co-ordinate here at the Adult Education & Training Centre?

2. How many years are you co-ordinating at the Centre?

3. Have you ever co-ordinated in other Adult Education Centres?
    - If yes, was ICT integrated in that Centre? Why do you think this was the case?

4. What ICT qualifications and/or experience do you posses?

5. Have you ever taught using ICT?
    - If yes, what were the advantages and/or disadvantages of using it?
    - If no, would you have preferred to use ICT to teach? Why? Why not?

6. Do you think ICT is an effective teaching method? Why? Why not?

7. Does this Centre have an ICT plan?
    - If yes, were all relevant stakeholders such as teachers consulted in designing the ICT plan?
    - If no, do you feel this Centre should have an ICT plan?

8. Do you feel ICT has altered your job as a co-ordinator?
    - If yes, how?

9. Does the Centre have a designated ICT co-ordinator?
    - If not, why not?

10. What ICT resources are available in the Centre?

11. Do all teachers have access to these resources?
    - If yes, do you feel that equal access is provided?

12. Do all learners have access to these resources?
    - If yes, do you feel that equal access is provided?

13. Do you feel the ICT resources in this Centre are being used for the purpose intended?

14. Would you encourage all teachers to use ICT in their teaching?
    - If yes, what resources have you put in place for this to happen

15. What technical support is available in the Centre? – is this internal support or external support?

16. Does this Centre have a designated ICT Technician?
    - If not, why not?

17. How are ICT problems reported? Dealt with?

18. How often would you update ICT equipment, either Hardware or Software?

19. Have you ever provided ICT training for teachers either formally or informally?

20. Would you encourage teachers in the Centre to engage in Professional Development courses in ICT?

21. In your opinion, is it important that adult learners are technologically aware?
    - If yes, why?

22. Do you feel that adult learners see ICT as an impediment to learning?

Thank you for taking the time to be interviewed today.

Appendix C
Interview Transcriptions

Interview 1

I would like to take this opportunity to thank you for agreeing to be interviewed today. I would like to remind you again that at no stage during the interview will you be required to identify yourself. The answers you provide will be treated confidentially.

Interviewer: What programme do you currently co-ordinate here at the Adult Education & Training Centre?

Interviewee: I am the VTOS co-ordinator here at the AETC and have been since it started in 1999.

Interviewer: Have you ever co-ordinated in other Adult Education Centres?

Interviewee: Yes, I set up VTOS in the AETC [redacted] and I co-ordinate that Centre also. We have 72 VTOS students here in [redacted] and 15 in [redacted]. Usually I attend [redacted] one day per week, usually Wednesdays and [redacted] the other 4 days.

Interviewer: Is ICT integrated in that Centre?

Interviewee: Yes, there is only one VTOS teacher in [redacted] so she has full use of the ICT resources there.

Interviewer: What ICT resources are there in [redacted]?

Interviewee: We have a computer lab with 15 computers, a digital projector, scanner, television, digital camera and digital video recorder and others as well.

Interviewer: What ICT qualifications and/or experience do you posses?

Interviewee: I have a Masters in ICT in Education from the University of Limerick. I started my career as an ICT teacher.

Interviewer: What do you think are the advantages and disadvantages of using ICT to teach?

Interviewee: Well, as a previous ICT teacher and having studied ICT. I realise that ICT has huge potential to sustain learners' interests and make their learning more interesting. I also think it helps teachers as it provides them with new approaches to learning rather than the mundane chalk and talk approach. That being said it shouldn't be overused as this would probably be just as boring as chalk and talk. I would have always used ICT in my classroom but as it was mainly ICT that I taught it was a given. It can be difficult here in the Centre to allocate time for all classes to have access to all the ICT equipment. Up until last year the 3 Leaving Cert teachers here in [redacted] had to share one digital projector which caused many problems, as you can imagine. This year we could afford to purchase a digital projector each, which is hugely beneficial. The other teachers here already had their own digital projectors so I am happy to now say no teacher has to share.

Interviewer: Do you think ICT is an effective teaching method?

Interviewee: I personally do but I am sure there are others who don't. When you are trying to teach something it makes it a lot easier to show it on the big screen using a projector than to go around each student individually. It also saves a lot of time, therefore in my opinion, you can be more effective with your teaching time. As you know, our learners come from a wide range of educational backgrounds and we have learners from age 21 – 58, so some of them would have used ICT before other would not so it depends a great deal on the learner and on what you are teaching. It may not be effective in every teaching circumstance.

Interviewer: Would you care to elaborate on that?

Interviewee: Well, take essay writing in Leaving Cert English or writing compositions or something like that, in these circumstances I can

not see how ICT can be effective. As well as that, I think a large number of our learners join VTOS to build confidence and many do this by interacting with others. In some instances, teacher-student and student-student interaction can develop their confidence a lot more than using ICT equipment would. Again, I suppose its all about moderation.

Interviewer: Does this Centre have an ICT plan?

Interviewee: No, we don't have an ICT plan in writing but I would be fully aware of what ICT resources we have, who has access to them and I try to keep up to date with developments in ICT to ensure that we have the most up to date resources available to our teachers and learners.

Interviewer: Do you feel ICT has altered your job as a co-ordinator?

Interviewee: If you mean has it changed the way I do my job on a daily basis then, absolutely. Most of my correspondence and communications, in fact, almost all of it is now done through e-mail. I would also use e-mail to communicate with my administrator even though she is only down the hall. It enables me to keep track on when I have asked for something to be done and it also prevents any miscommunication that could take place. I would communicate occasionally with my staff via e-mail but usually it would be my AEO and administrator that I would correspond with via e-mail. I have to say I write very little now compared to what I did when I first became co-ordinator. Everything now is typed, spellchecked, scanned or e-mailed. Even the payments procedure for learners is now all done via computers and all our invoicing and payments is done online which is connected to the accounts department here in the VEC Headquarters. The first thing I do when I get to my office is turn on my laptop and generally apart from meeting students I would be

on it all day. It has changed my job as a co-ordinator but I must say I think it has changed it for the better.

Interviewer: Does the Centre have a designated ICT co-ordinator?

Interviewee: We don't have a designated person because unlike schools, we don't have post of responsibilities in VTOS. To be honest I would class myself as the ICT co-ordinator as I do all the work associated with it. Now that you say that I wonder do the teachers know that?

Interviewer: What ICT resources are available in the Centre?

Interviewee: We have two VTOS computer labs with 30 computers. One has 18 PCs and the other has 12 PCs, I think. Both rooms have a laser printer, a scanner and a digital projector. As I said earlier all the other VTOS teachers have their own digital projector and their own laptop. The Centre has one digital camera, one digital video camera, 3 TVs, one video recorder, two DVD recorder and two digital Dictaphones. We also have 15 audio transcription machines. All the computers in the building are networked via a server which enables any learner to access their personal files from any machine. All the PCs have wired broadband and all the teachers laptops can connect to the wired broadband or the wireless connection that is available anywhere in the Centre. The staff room has its own PC that is also connected to the server and the Internet. We got a new photocopier in the Centre last year which is top of the range. It does the normal functions of a photocopier as well as folding paper and creating pamphlets. All the VTOS teachers can log into any computer in the building and print directly to the photocopier. Last month we installed paper cut software onto all the machines to try and reduce the amount of paper and ink we use. When each VTOS teacher or learner logs onto their machines they can see how much of a paper quota they have remaining. So far it seems to be working. As co-ordinator, I

can log on and see what each teacher and learner is printing, I can see their quota and the time they sent material to the printer.

Interviewer: Do all teachers have access to these resources?

Interviewee: Yes and No. Only the ICT teachers have access to the computer labs. Unfortunately, the Leaving Cert and Childcare teachers and learners do not have access to the labs. As all our classes run from 9.30 – 3pm, it is not possible to timetable these learners in the ICT rooms. The ICT rooms are used by the ICT teachers throughout the day. As you know, we don't have any free periods in the Centre so the rooms are never free. Even if I could do this, the size of the rooms and the number of learners we have wouldn't work out. It would be nice if all learners could have equal access but it's not viable with the constraints of the building and time.

Interviewer: Do you feel the ICT resources in this Centre are being used for the purpose intended?

Interviewee: Yes, although some teachers make more use of the resources than others.

Interviewer: Why do you think this is the case?

Interviewee: Again, it depends on the subjects being taught but it also depends on the teacher's competence and I suppose attitude towards using it. Some may like using it other to not. I do try and encourage everyone to use it.

Interviewer: What technical support is available in the Centre?

Interviewee: If there is a problem, then the teacher logs it by filling out an incident report form and submitting it to me. I then call in the technician. We have an agreement with a company who we purchase all our ICT equipment from and they maintain and service all equipment.

Interviewer: How often would you update ICT equipment, either Hardware or Software?

Interviewee: Regularly and as needed is probably the best answer I can give.

Interviewer: Have you ever provided ICT training for teachers either formally or informally?

Interviewee: Occasionally we provide training but we would encourage teachers to update their knowledge.

Interviewer: Would you encourage teachers in the Centre to engage in Professional Development courses in ICT?

Interviewee: Yes, I would inform all teachers of various courses that would be coming up that may be of interest to their chosen areas. We have a policy here in the VEC to help fund professional development courses. If the course was needed for them to do their job then we would fully pay for the course alternatively, we would subsidise it to a maximum of €750. As well as that we spent €12000 here in the Centre on ICT last year alone.

Interviewer: In your opinion, is it important that adult learners are technologically aware?

Interviewee: Yes. One of the aims of VTOS is to prepare learners for work. Technology is everywhere in the world of work therefore, we would be doing a disservice to our learners if we didn't provide them with the most up to date skills we could.

Interviewer: Do you feel that adult learners see ICT as an impediment to learning?

Interviewee: Again, probably a difficult one for me to answer. You would probably be best to ask the learners that. I can give you my opinion – it depends on each learner. Some may feel that they are doing a course to learn Childcare or whatever, not ICT and feel that

it puts an added pressure on them. Others may feel it strange if ICT is not used. It's a difficult one to answer.

Interviewer: Thanks you for taking the time to answer my questions.

Interviewee: You're welcome

Interview 2

I would like to take this opportunity to thank you for agreeing to be interviewed today. I would like to remind you again that at no stage during the interview will you be required to identify yourself. The answers you provide will be treated confidentially.

Interviewer: What programme do you currently co-ordinate here at the Adult Education & Training Centre?

Interviewee: I co-ordinate the BTEI programme that delivers Leaving Cert, Computers, Bookkeeping Manual and Computerised and Marketing.

Interviewer: Have you ever co-ordinated in other Adult Education Centres?

Interviewee: I am also the BTEI County co-ordinator which means I co-ordinate all the BTEI programmes in the six Adult Education and Training Centres throughout [redacted] VEC and co-ordinate all night classes run under BTEI.

Interviewer: How many years are you co-ordinating at the Centre?

Interviewee: I have been the County co-ordinator since BTEI was set up in [redacted] in 2002. However until last year I had BTEI learner support workers in each Centre to run things in each Centre. Due to cutbacks, I no longer have a support worker in [redacted] therefore I am the co-ordinator in this Centre since September 2009.

Interviewer: Is ICT integrated in the other Centres that you co-ordinate?

Interviewee: Yes and No. BTEI offer a wide range of programmes such as Junior Cert Maths and English, Communications, Personal development, computing and so on and in wide range of settings. Some setting would have ICT facilities others would not. Some of my teachers would not see the need in using ICT in what they teach.

Interviewer: What ICT qualifications and/or experience do you posses?

Interviewee: I have the JEB Teachers' Diploma in ICT and I taught ICT briefly before becoming the BTEI County co-ordinator.

Interviewer: What do you think are the advantages and disadvantages of using ICT?

Interviewee: ICT allows for differentiated learning, some learners might prefer to learn one way and others a different way. ICT can play to everyone's needs. Some learners on my courses have not been in education for many, many years, if at all in some instances. They may prefer a more intimate approach to learning where it is just teacher and learner and not loads of gadgets for the want of a better phrase.

Interviewer: Do you think ICT is an effective teaching method?

Interviewee: I would say yes and for the reasons I just mentioned – being able to cater for different preferred ways of learning.

Interviewer: Does this Centre have an ICT plan?

Interviewee: No.

Interviewer: Do you feel this Centre should have an ICT plan?

Interviewee: All teachers know what resources are available and how to get them when they need them. Failing that they can contact me.

Interviewer: Do you feel ICT has altered your job as a co-ordinator?

Interviewee: Having to liaise with a number of Centres has been made easier by using computers, Internet and e-mail facilities.

Interviewer: Does the Centre have a designated ICT co-ordinator?

Interviewee: No, BTEI would not have the funding available to put resources into a designated ICT co-ordinator.

Interviewer: What ICT resources are available in the Centre?

Interviewee: We have one computer suite with 10 computers all linked to the Internet and networked to a printer. Again, BTEI has limited funding available and the funding provided is used to fund tuition and other expenses such as light and heat and so on.

Interviewer: Do all teachers have access to these resources?

Interviewee: The Bookkeeping and Accounts teacher has full time access to the computer suite. The Childcare teacher also teaches VTOS and therefore can use the VTOS resources. The Marketing teacher teaches in a VTOS computer classroom so again can use all the facilities there. The Leaving Cert teacher has no specific ICT resources from BTEI but again would use those of VTOS.

Interviewer: You mention that a lot of teachers use VTOS resources. What about the courses that runs in Centres that do not offer VTOS?

Interviewee: We would try and provide appropriate resources in these Centres but finances normally dictate this and we can only work within the budget provided.

Interviewer: Do you feel the ICT resources in this Centre are being used for the purpose intended?

Interviewee: Yes

Interviewer: Would you encourage all teachers to use ICT in their teaching?

Interviewee: I think this is a personal choice for each teacher. I certainly wouldn't push the use of ICT onto a teacher who would not be happy and comfortable to use it.

Interviewer: What technical support is available in the Centre? – is this internal support or external support?

Interviewee: Any support needed would be communicated to the administrator and they would in turn contact our computer support team; an outside company from who we purchase equipment.

Interviewer: Does this Centre have a designated ICT Technician?

Interviewee: I know [redacted] VEC have a technician who we can contact if needed but we generally would go through our outside computer support company if any errors or problems arises that we cannot fix ourselves.

Interviewer: How are ICT problems reported? Dealt with?

Interviewee: They are reported to the administrator in the Centre.

Interviewer: How often would you update ICT equipment either Hardware or Software?

Interviewee: As required.

Interviewer: Have you ever provided ICT training for teachers either formally or informally?

Interviewee: No.

Interviewer: Would you encourage teachers in the Centre to engage in Professional Development courses in ICT?

Interviewee: Yes I would encourage anyone to engage in Professional development.

Interviewer: Would funding be provided for such training?

Interviewee: Although I would like to, funding to programmes such as BTEI are limited and our focus is to try and run as many courses as possible to help as many learners as possible. In saying that, last year we spent €3000 on ICT in this Centre alone.

Interviewer: In your opinion, is it important that adult learners are technologically aware?

Interviewee: Yes. BTEI is often run as a part-time programme that enables learners to combine, work, learning and family life. Technology encompasses all these aspects therefore yes all learners should be technologically aware if they wish.

Interviewer: Do you feel that adult learners see ICT as an impediment to learning?

Interviewee: It depends on each learner some may and others may not. An 18 year old BTEI learner may be more used to working with ICT than an older learner. Although in saying that - this may not always be the case.

Interviewer: Thank you for taking the time to be interviewed today. It is very much appreciated.

Interviewee: You're welcome.

Appendix D

Teacher Questionnaire

Dear Sir/Madam,

I am currently undertaking a Masters Degree in Digital Media Development for Education at the University of Limerick which involves conducting research in a chosen field. My research is on the factors that promote and inhibit the use of ICT in an Adult Education and Training Centre from a managerial, teacher and learner perspective.

I would appreciate if you would complete the attached questionnaire on the use of ICT in your teaching practices. The questionnaire should take approximately 5 minutes to complete and all your views/answers will be treated with the utmost confidentiality. You will not be asked to identify yourself at any stage.

For clarification purposes, ICT is an abbreviation for "Information and Communications Technology" and incorporates elements such as Computers, Digital Cameras, Digital Projectors, Scanners, Televisions and other technologies.

If you require any assistance with any of the questions, please do not hesitate to ask.

Yours sincerely

_____

Joanne Irwin

Please tick ✓the appropriate box.

1. Gender: Male ☐ Female ☐

2. Age: 18 – 25 ☐ 26 - 30 ☐ 31 - 40 ☐ 41 + ☐

3. Which Programme are you currently teaching?

   BTEI ☐ VTOS ☐ Both ☐

4. Which course are you currently teaching at the Adult Education & Training Centre?

   Computer Applications . . . . . ☐
   Childcare . . . . . ☐
   Marketing . . . . . ☐
   Leaving Certificate . . . . . ☐
   Bookkeeping and Payroll ☐

5. How many years have you taught adults?

   0 – 4 ☐ 5 – 9 ☐ 10 – 14 ☐ 15+ ☐

6. Have you ever undertaken a course in ICT?

   Yes ☐ No ☐

   If yes, please list courses and/or qualifications obtained: _____

   _____

7. How often do you use computers/ICT in your teaching?

   All the time ☐ Most lessons ☐ Occasionally ☐ Never ☐

8. Is there a computer in your classroom? Yes ☐ No ☐

   If yes, how often do you use it?

   Often ☐ Occasionally ☐ Never ☐

What do you use classroom computers for? _____

_____

9. Do you use computers for any of the following: **Please tick all that apply (√)**

Preparing lesson materials . . .	☐	Teaching	☐
Preparing tests/exams	☐	Keeping records .	☐
Schemes of work/Lesson Plans	☐	Other	☐

10. Do you think it is important to have ICT skills in today's society?

Yes ☐ No ☐

11. Did you use ICT when you were educated at: **Please tick all that apply (√)**

Primary Level ☐ Second Level ☐ Third Level ☐

12. Does your classroom have any of the following ICT equipment? **Please tick (√) all that apply**

Digital Projector	☐	Interactive Whiteboard . . .	☐
Scanner	☐	TV	☐
DVD Player	☐	Digital Camera	☐

Other ICT equipment ☐

Please specify: _____

_____

13. Using the scale below, please indicate your response for each statement. For example, if you strongly agree with the statement, then write 1 in the box. However, if you strongly disagree about the statement then write 5 in the box and so on. There is no right or wrong answer, please give the response that matches your feelings.

1----------2----------3----------4----------5

Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree

I would prefer to teach using ICT than human interaction . . . . . ☐
Using ICT would not scare me at all . . . . . ☐
I would like to use ICT in my teaching . . . . . ☐
I would prefer to use ICT as little as possible . . . . . ☐
I find ICT difficult to use . . . . . ☐
I would use ICT more if I knew more about it . . . . . ☐
Using ICT enables the learners to learn at their own pace . . . . . ☐
ICT technologies are changing too rapidly for me to keep up to date ☐

14. Please indicate your level of expertise or competence in each of the following by ticking (√) the most appropriate box:

	Very Good	Good	Fair	Poor	None
Word Processing					
Spreadsheets					
Databases					
PowerPoint					
Internet					
E-mail					
Web Authoring					
Digital Photography					
Video Editing					
Scanning images					
Software Development					

15. Which computer applications would you use most often? **Please tick (√) all that apply**

Word Processing	
Spreadsheets	
Databases	
PowerPoint	
Internet	
E-mail	
Web Authoring Software	
Digital Photography Editing Software	
Video Editing Software	
Windows Media Player	
Paint	
Other (Please specify)	

16. Have you ever received on-site ICT training, either formally or informally?

Yes ☐ No ☐

If Yes, was it Formal ☐ Informal ☐

17. Do you think learners would be more motivated to learn if ICT was regularly integrated into their lessons?

Yes ☐ No ☐

If yes, please give a reason: _____

_____

18. Which of the following (if any) do you attribute to your use of ICT in your classroom? **Please tick (√) all that apply**

	Agree	Disagree
I have enough time to prepare ICT lessons		
I have sufficient ICT resources in my classroom		
There are adequate ICT resources in the Centre		
I am adequately trained to use ICT		
There is sufficient ICT support if anything goes wrong		
I am confident using ICT		
I have the expertise to use ICT in my teaching		
I am scared of ICT		
I find it difficult to access a computer room		
I receive enough encouragement from the co-ordinator		
Adult Learners wish to use ICT to learn		
Adult Learners prefer a teacher-centred approach to learning		
ICT could add to an adult learner's fear of returning to education		

19. Do you think ICT enhances the overall learning experience?

Yes ☐ No ☐

If yes, please give a reason: _____

_____

20. Do you feel that using ICT in a classroom would decrease the opportunity for learners to interact with each other and for you to interact with your learners?

Yes ☐ No ☐

If yes, please give a reason: _____

_____

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS QUESTIONNAIRE.

Appendix E
Learner Questionnaire

Dear Sir/Madam,

I am currently undertaking a Masters Degree in Digital Media Development for Education at the University of Limerick which involves conducting research in a chosen field. My research is on the factors that promote and inhibit the use of ICT in an Adult Education and Training Centre from a managerial, teacher and learner perspective.

I would appreciate if you would complete the attached questionnaire on your perception, use and experience of ICT. The questionnaire should take approximately 5 minutes to complete and all your views/answers will be treated with the utmost confidentiality. You will not be asked to identify yourself at any stage.

For clarification purposes, ICT is an abbreviation for "Information and Communications Technology" and incorporates elements such as Computers, Digital Cameras, Digital Projectors, Scanners, Televisions and other technologies.

If you require any assistance with any of the questions, please do not hesitate to ask.

Yours sincerely

_____

Joanne Irwin

Please tick ✓the appropriate box.

1. Gender: Male ☐ Female ☐

2. Age: 18 – 25 ☐ 26 - 30 ☐ 31 - 40 ☐ 41 + ☐

3. Which Programme are you currently studying within?

   BTEI ☐ VTOS ☐

4. Which course are you currently studying at the Adult Education & Training Centre?

   Computer Applications . . . . . ☐ Leaving Certificate . . . . . ☐

   Childcare . . . . . ☐ Bookkeeping and Payroll ☐

   Marketing . . . . . ☐

5. Have you ever undertaken a course in ICT prior to your current course?

   Yes ☐ No ☐

   If yes, please list courses and/or qualifications obtained: _____

   _____

6. Do you have an Internet connection at home? Yes ☐ No ☐

7. Do you have a personal e-mail address? Yes ☐ No ☐

8. How often do you use computers at home?

   Daily ☐ Weekly ☐ Other (please specify) _____

9. Is there a computer in your classroom? Yes ☐ No ☐

If yes, how often do you use it?

Often ☐ Occasionally ☐ Never ☐

What do you use classroom computers for? _____

_____

_____

10. Do you think it is important to have ICT skills in today's society?

Yes ☐ No ☐

11. Was ICT used in your previous educational experience?

Yes ☐ No ☐

12. Does your classroom have any of the following ICT equipment? **Please tick (√) all that apply**

Digital Projector . . . . . ☐ Interactive Whiteboard . . . ☐
Scanner . . . . . ☐ TV . . . . . ☐
DVD Player . . . . . ☐ Digital Camera . . . . . ☐

Other ICT equipment ☐

Please specify: _____

_____

_____

13. Using the scale below, please indicate your response for each statement. For example, if you strongly agree with the statement, then write 1 in the box. However, if you strongly disagree about the statement then write 5 in the box and so on. There is no right or wrong answer, please give the response that matches your feelings.

1	2	3	4	5
Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

I would prefer to learn from a teacher than from a computer. ☐
Using ICT would not scare me at all . . . . . ☐
I would like to use ICT in my learning . . . . . ☐
I would prefer to use ICT as little as possible . . . . . ☐
I find ICT difficult to use . . . . . ☐
I would use ICT more if I knew more about it . . . . . ☐
I believe using ICT to learn helps me to learn at my own pace . ☐

14. Do you feel you would be more motivated to learn if ICT was regularly integrated into your lessons? Yes ☐ No ☐

If yes, please give a reason: _____

_____

15. Do you think ICT enhances the overall learning experience?

Yes ☐ No ☐

If yes, please give a reason: _____

_____

16. Do you feel that using ICT in a classroom would decrease the opportunity to interact with your fellow classmates?

Yes ☐ No ☐

17. Please indicate your level of expertise or competence in each of the following by ticking (√) the most appropriate boxes:

	Very Good	Good	Fair	Poor	None
Word Processing					
Spreadsheets					
Databases					
PowerPoint					
Internet					
E-mail					
Web Authoring					
Digital Photography					
Video Editing					
Scanning images					
Software Development					

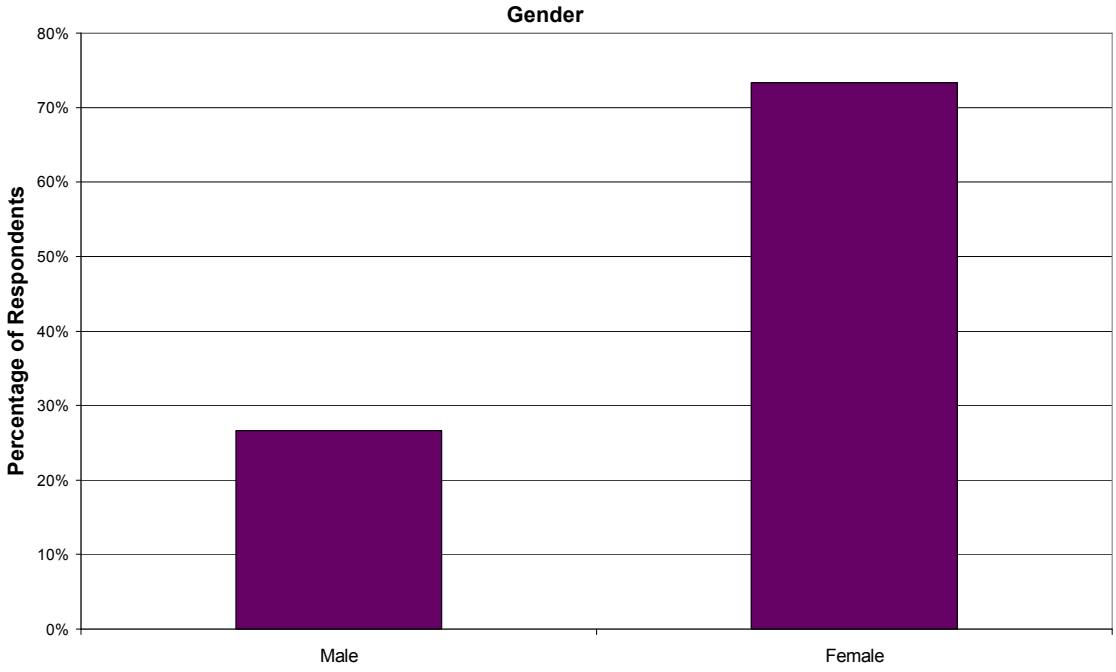
THANK YOU FOR TAKING THE TIME TO COMPLETE THIS QUESTIONNAIRE.

Appendix F
Learner Questionnaire Results

The results of the learner questionnaires are outlined below. The results of all learners surveyed will be presented, then separate graphical representations of those learners who study exclusively in the VTOS programme and those who study exclusively in the BTEI programme.

Question 1

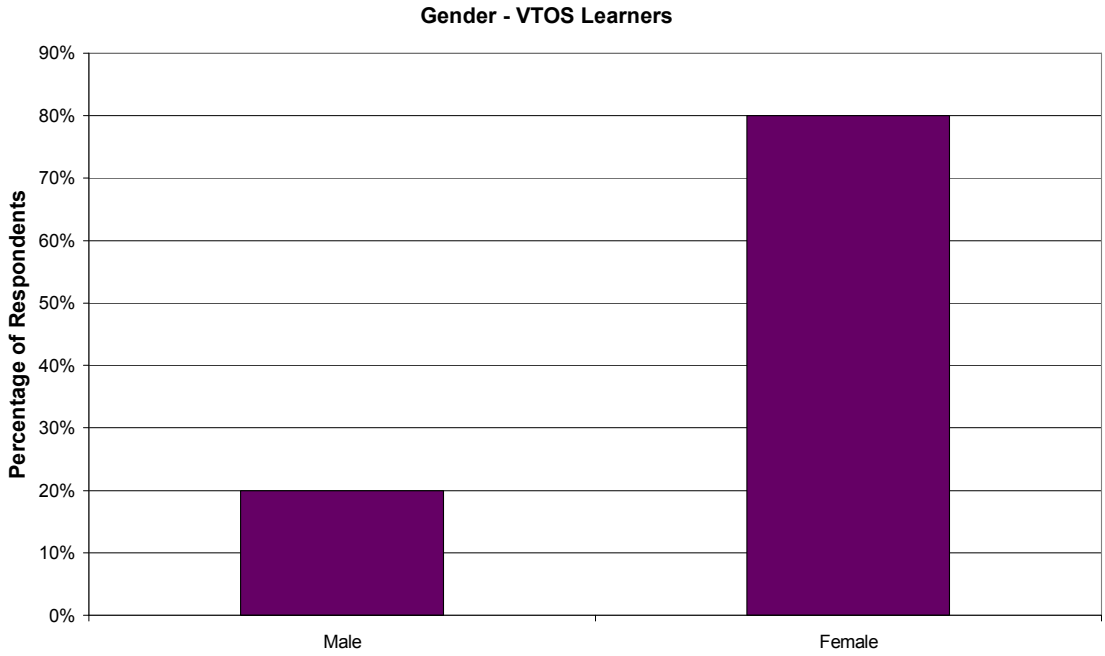
Gender of all learners surveyed:



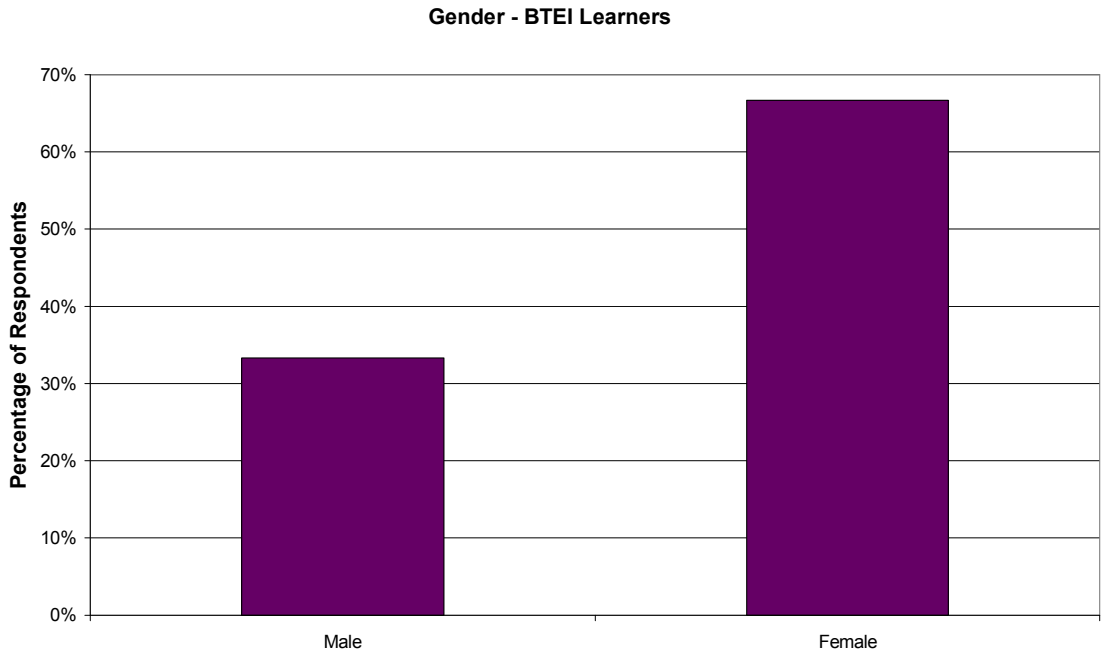
Out of the 30 learners sampled, 8 were male and 22 were female. The gender breakdown by programme was as follows:

VTOS Learners

Of the 15 VTOS learners surveyed, 3 were male and 12 were female.



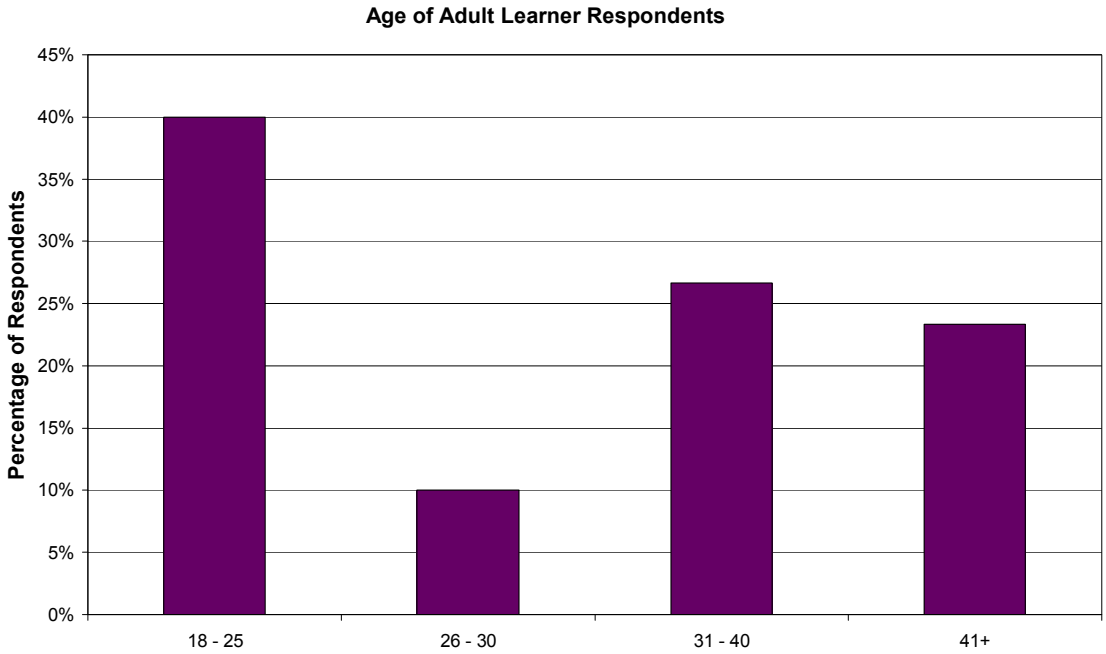
BTEI Learners



Of the 15 BTEI learners surveyed, 5 were male and 10 were female.

Question 2

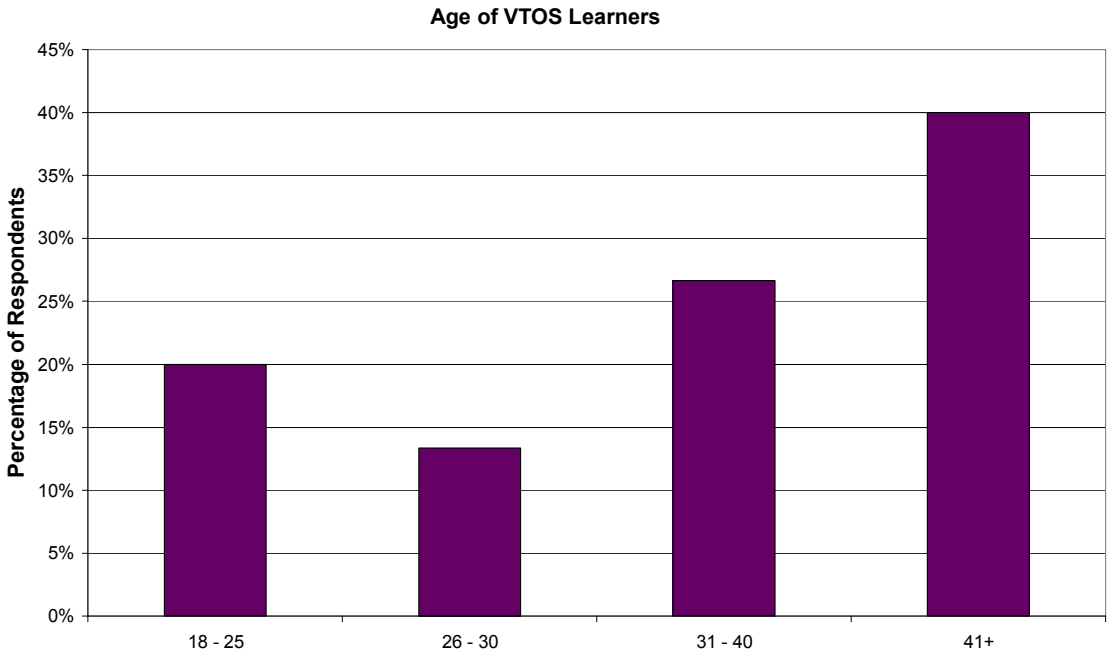
Age range of all learners surveyed:



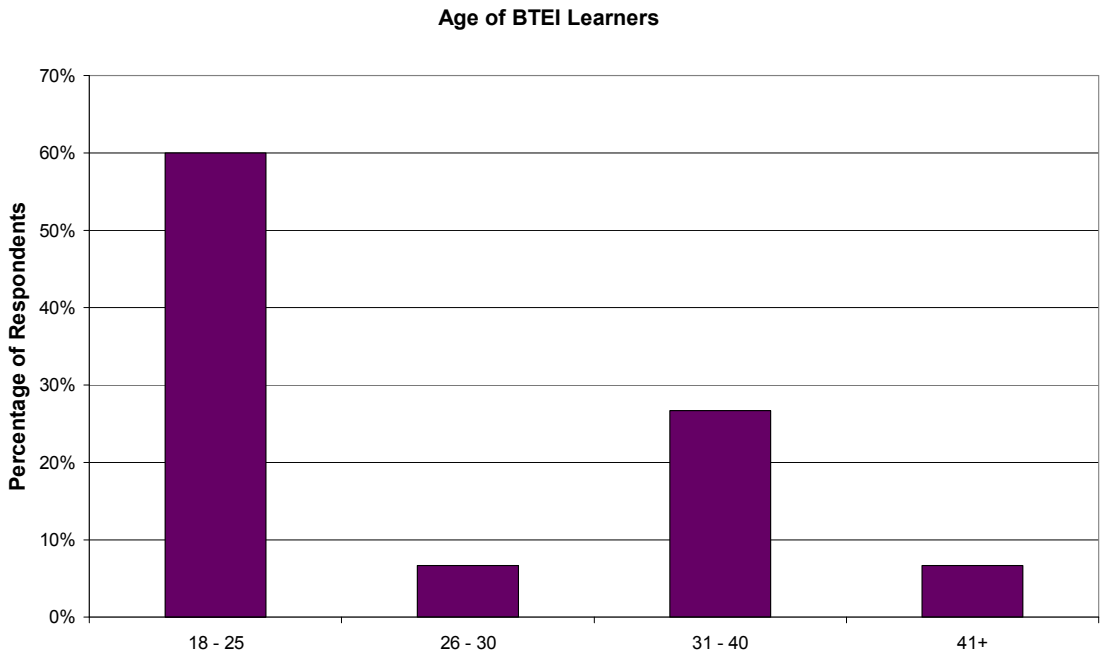
Out of the 30 learners surveyed, 12 learners were aged 18 – 25, 3 learners were aged 26 – 30, 8 learners were aged 31 – 40 and 7 learners were aged 41 and over. The age breakdown by programme was as follows;

VTOS Learners

Of the 15 VTOS learners surveyed, 3 were aged between 18 and 25, two were aged 26 – 30, four were aged 31 – 40 and 6 were aged 41 or over.



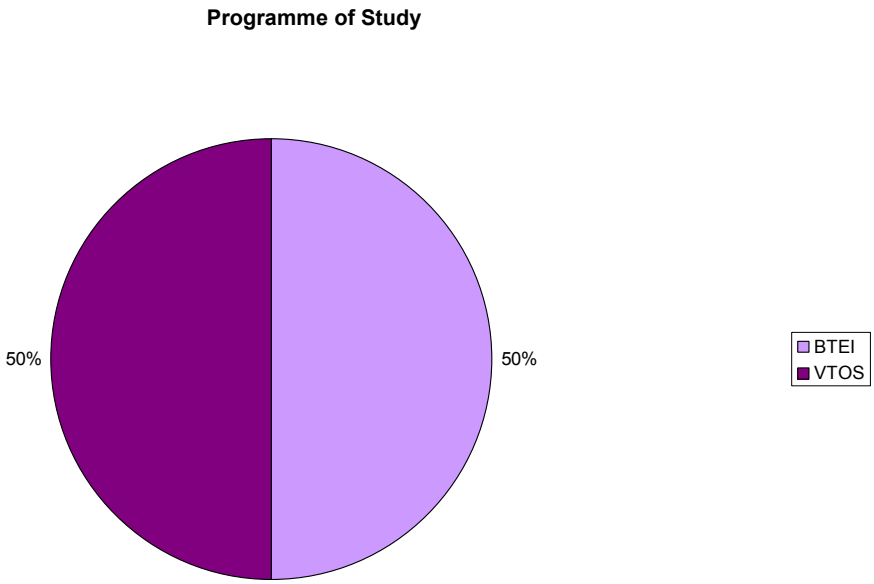
BTEI Learners



Of the 15 BTEI learners surveyed, 9 were aged between 18 and 25, one was aged 26 – 30, 4 learners were aged 31 – 40 and one learner was 41 or over.

Question 3

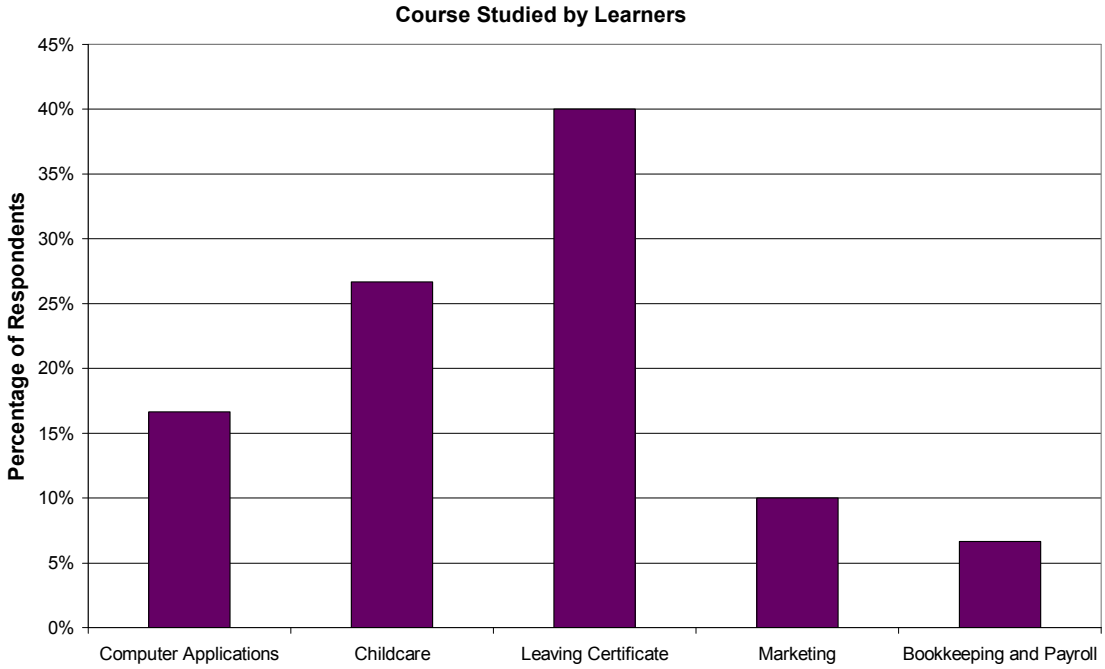
Programme of study:



Of the 30 learners surveyed, 15 were from the VTOS programme and 15 were from the BTEI programme.

Question 4

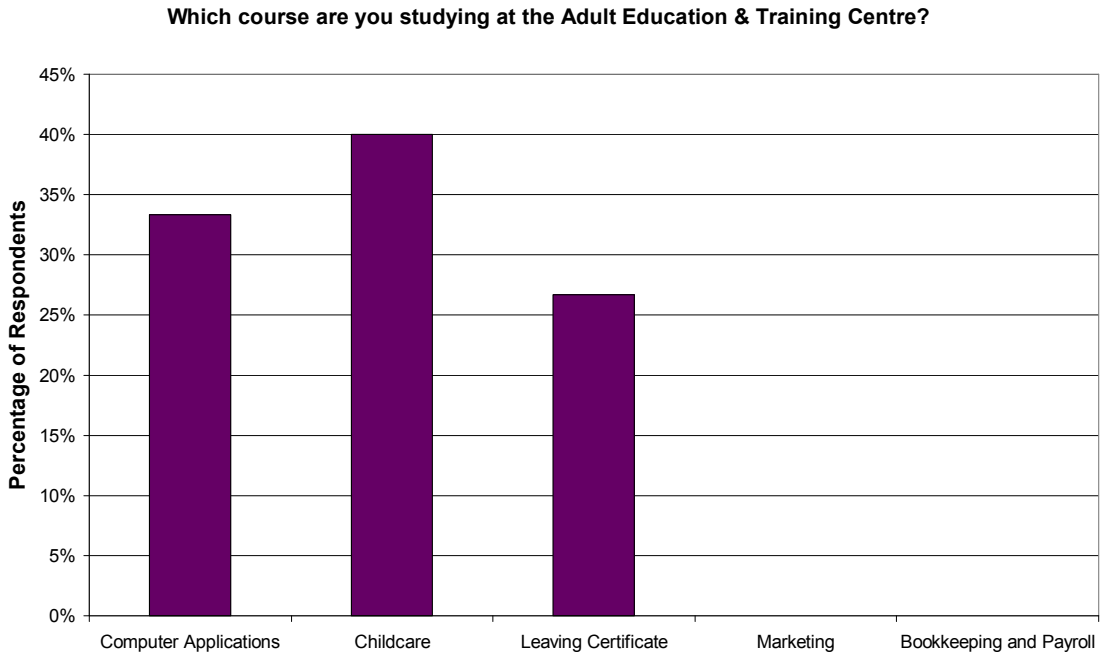
Course that the learners surveyed were enrolled in:



Of the 30 learners surveyed, 5 were studying Computer Applications, 8 were studying Childcare, 12 were studying Leaving Certificate, 3 were studying Marketing and 2 were studying Bookkeeping and Payroll. The course breakdown by programme was as follows:

VTOS Learners

Of the 15 VTOS learners surveyed, 5 were studying Computer Applications, 6 were studying Childcare and 4 were studying Leaving Certificate.

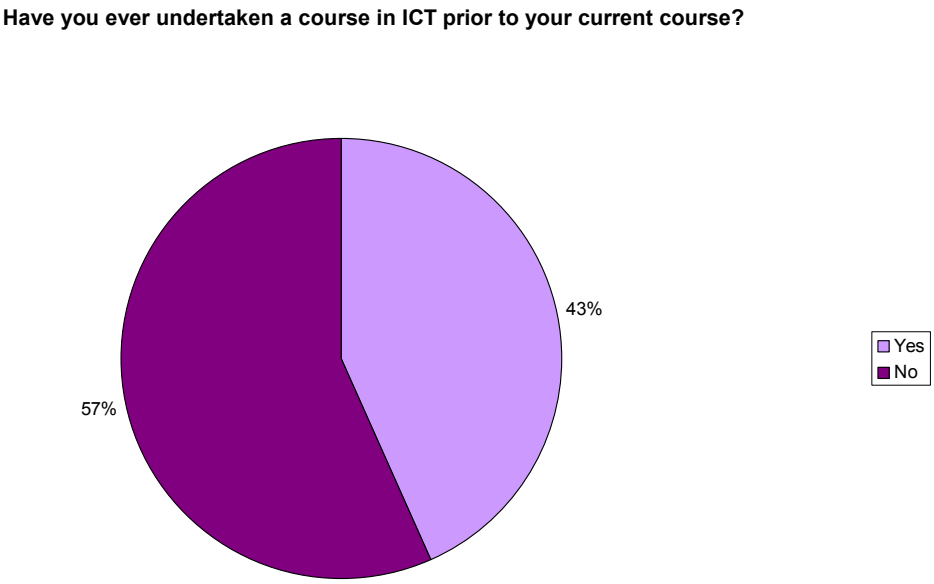


BTEI Learners

Of the BTEI learners surveyed, 2 were studying Childcare, 8 were studying Leaving Certificate, 3 were studying Marketing and 2 were studying Bookkeeping and Payroll.

Question 5

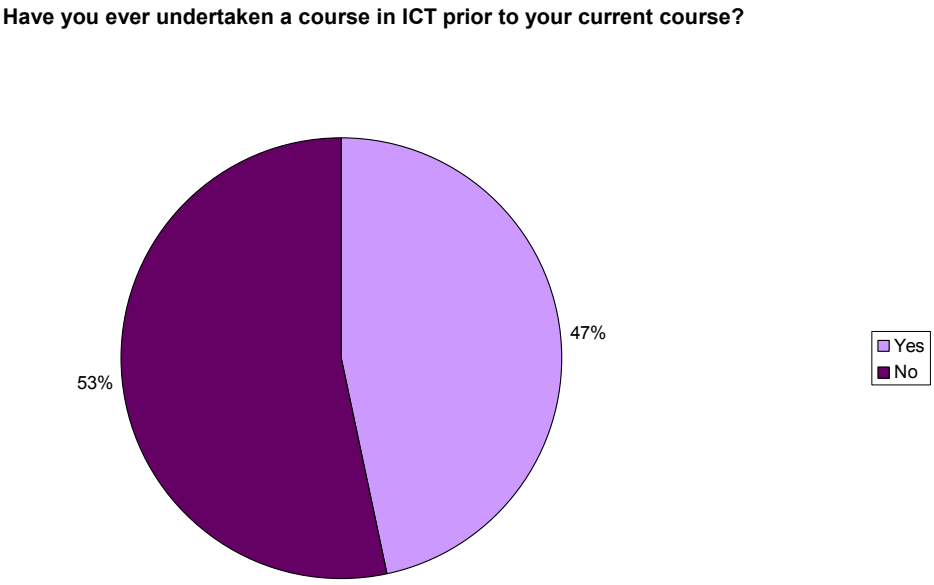
All learners were asked had they ever undertaken a course in ICT prior to their current course.



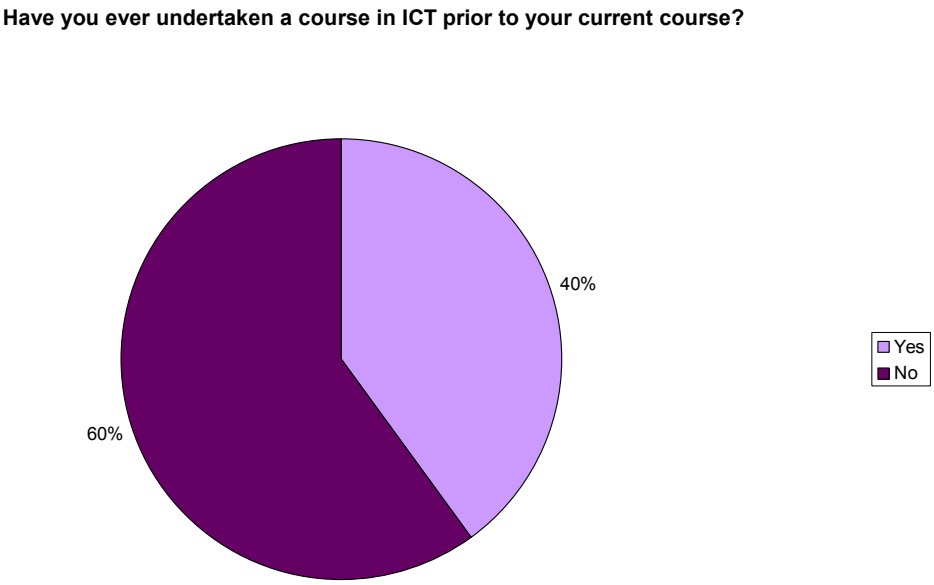
Of the 30 learners surveyed, 13 had undertaken a prior course in ICT while 17 had not. The breakdown by programme was as follows:

VTOS Learners

Of the 15 VTOS learners surveyed, 7 had undertaken ICT courses whereas 8 had not. These courses included ECDL, Computer Applications and Office Skills, basic Computers and OCR.



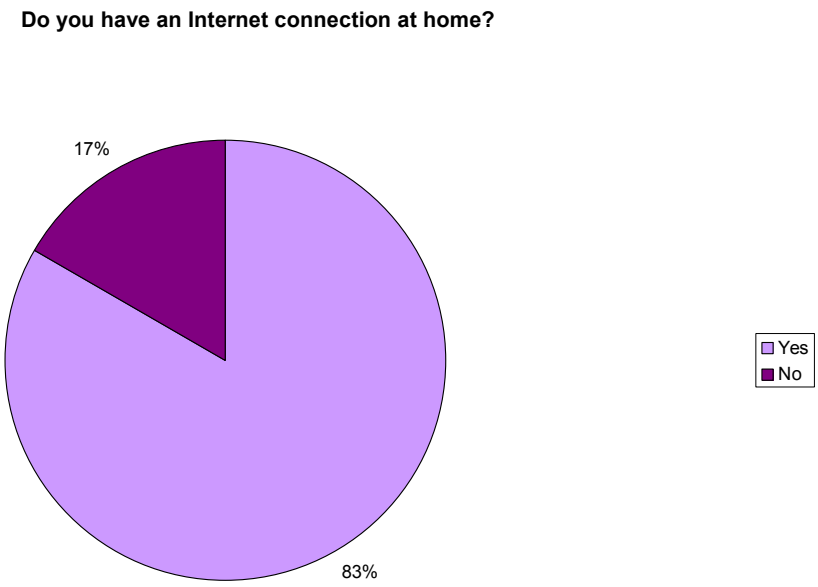
BTEI Learners



Of the 15 BTEI learners surveyed, 6 had undertaken prior ICT courses whereas 9 had not. These courses were ECDL, Computerised Payroll and Accounts, Desktop Publishing and Digital Photography.

Question 6

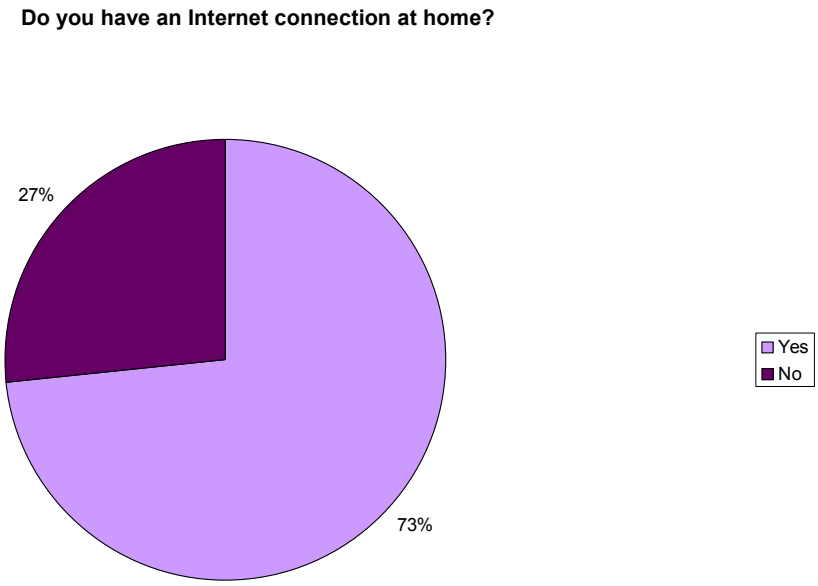
All learners were asked had they an Internet connection at home.



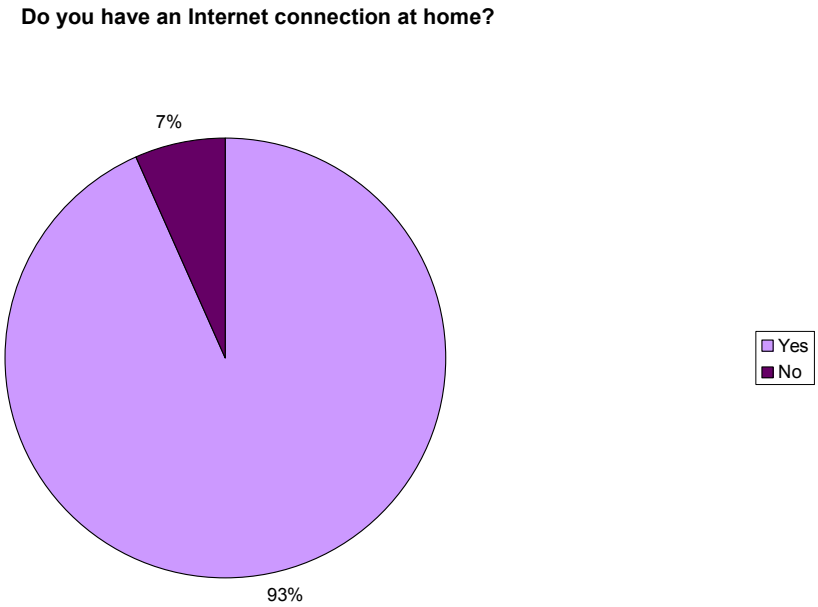
Of the 30 learners surveyed, 25 had a home Internet connection and 5 had not. The breakdown by programme was as follows:

VTOS Learners

Of the 15 VTOS learners surveyed, 11 had an Internet connection while 4 had not.



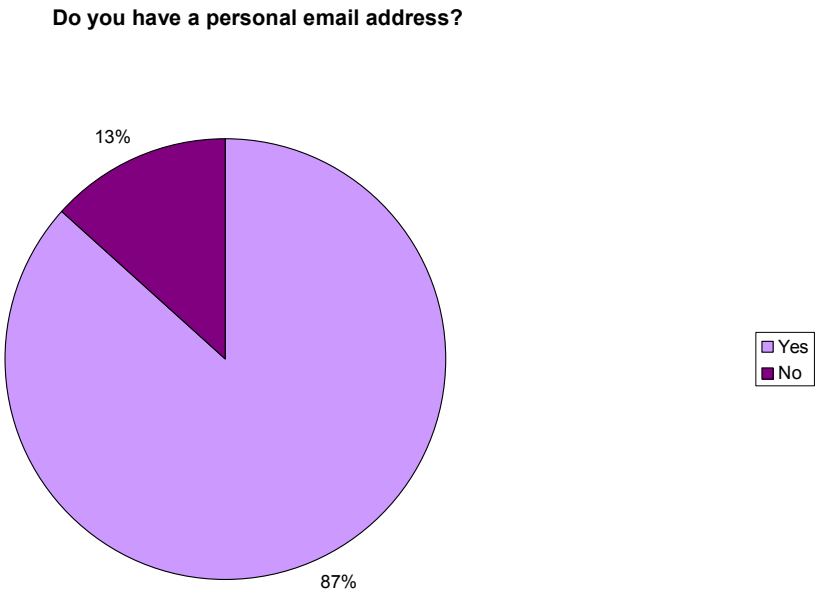
BTEI Learners



Of the 15 BTEI learners surveyed, 14 had an Internet connection and 1 had not.

Question 7

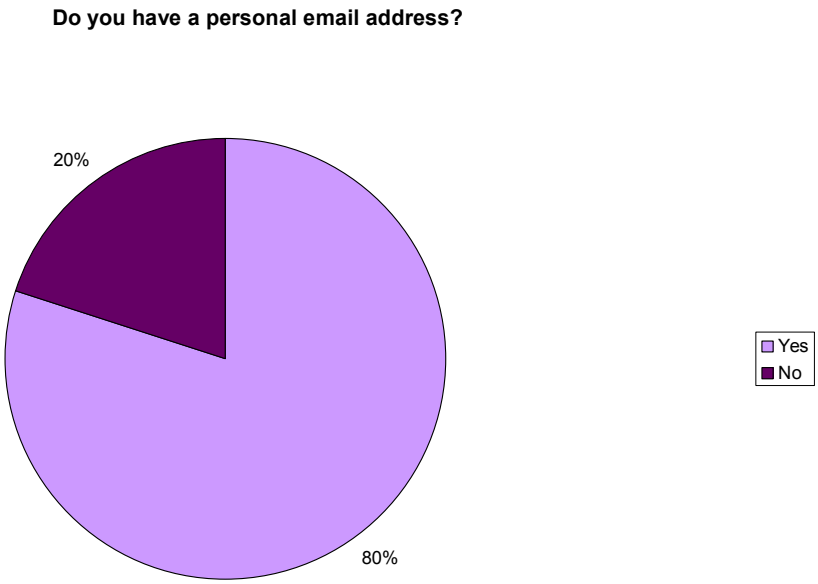
All learners were asked if they had a personal e-mail address.



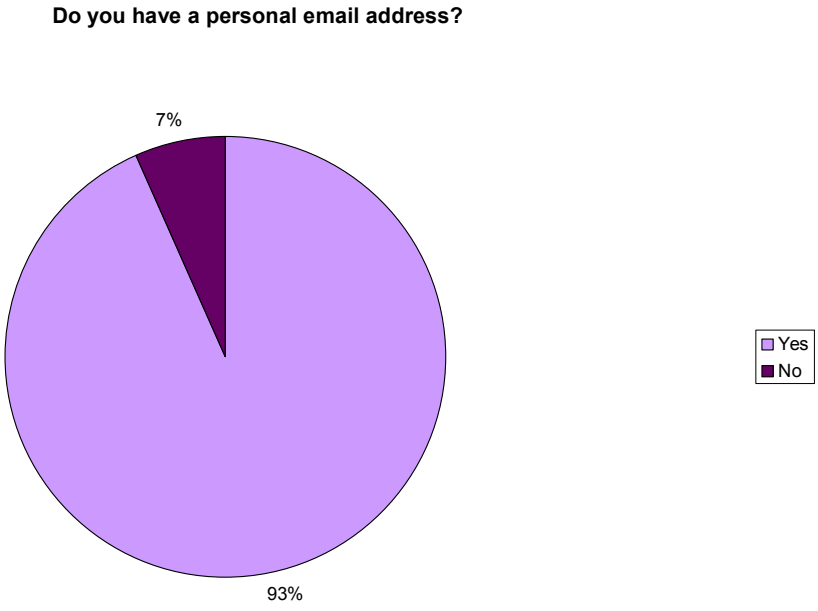
Of the 30 learners surveyed, 26 had a personal e-mail address whereas 4 had not. The breakdown by programme was as follows:

VTOS Learners

Of the 15 VTOS learners surveyed, 12 had a personal e-mail address and 3 had not.



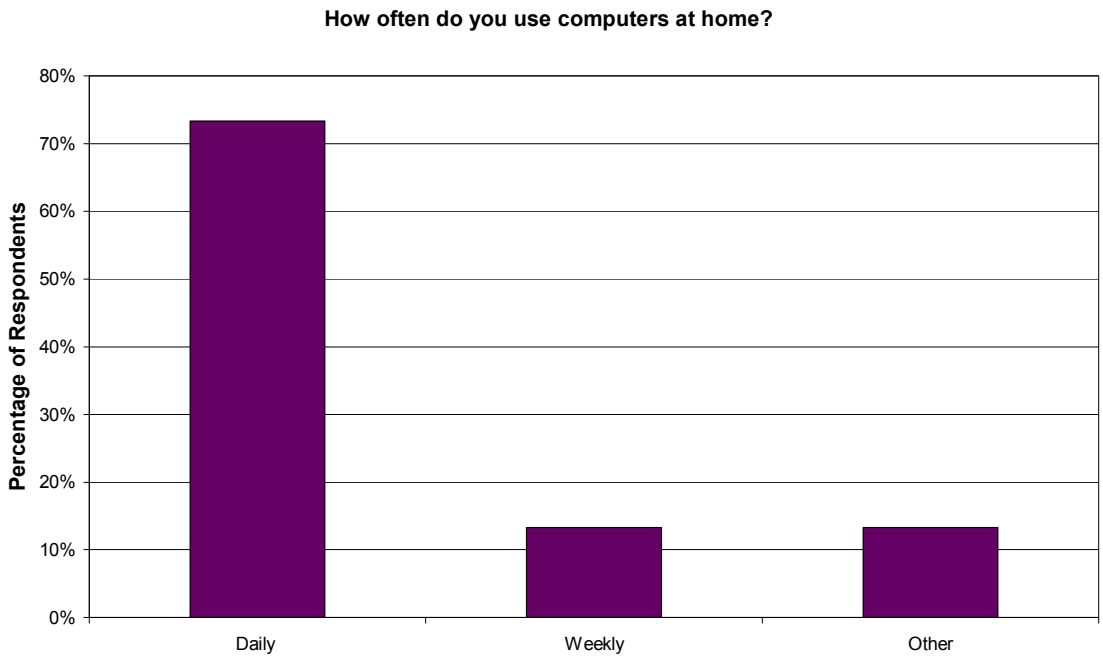
BTEI Learners



Of the 15 BTEI learners surveyed, 14 had a personal e-mail address whereas 1 learner had not.

Question 8

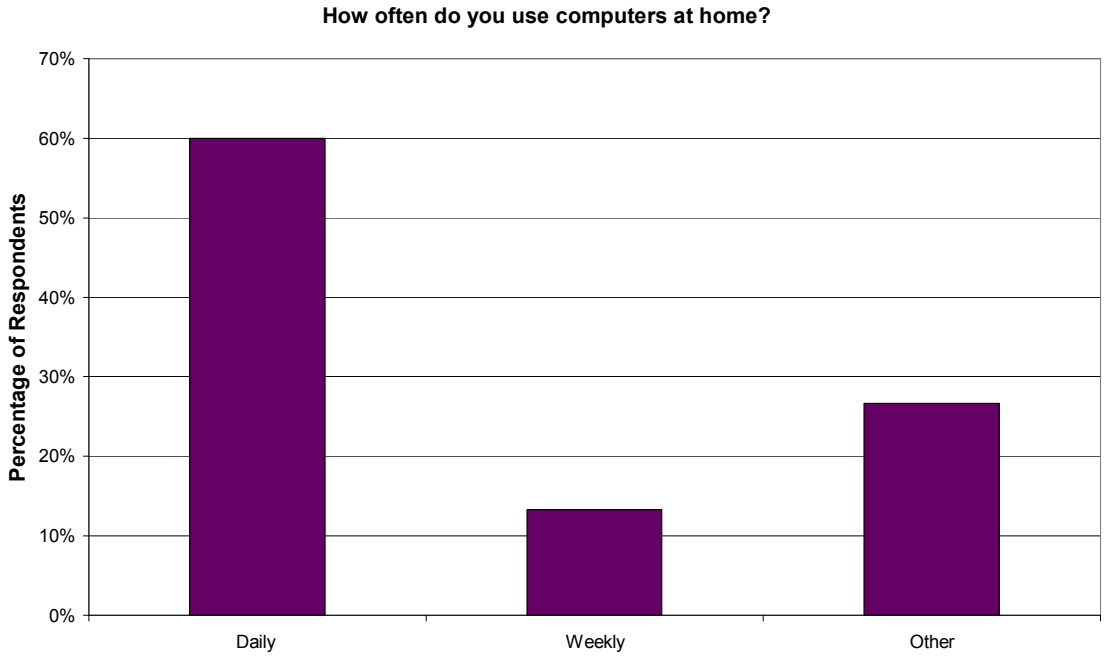
All learners were asked how often they used computers at home. Their responses were as follows;



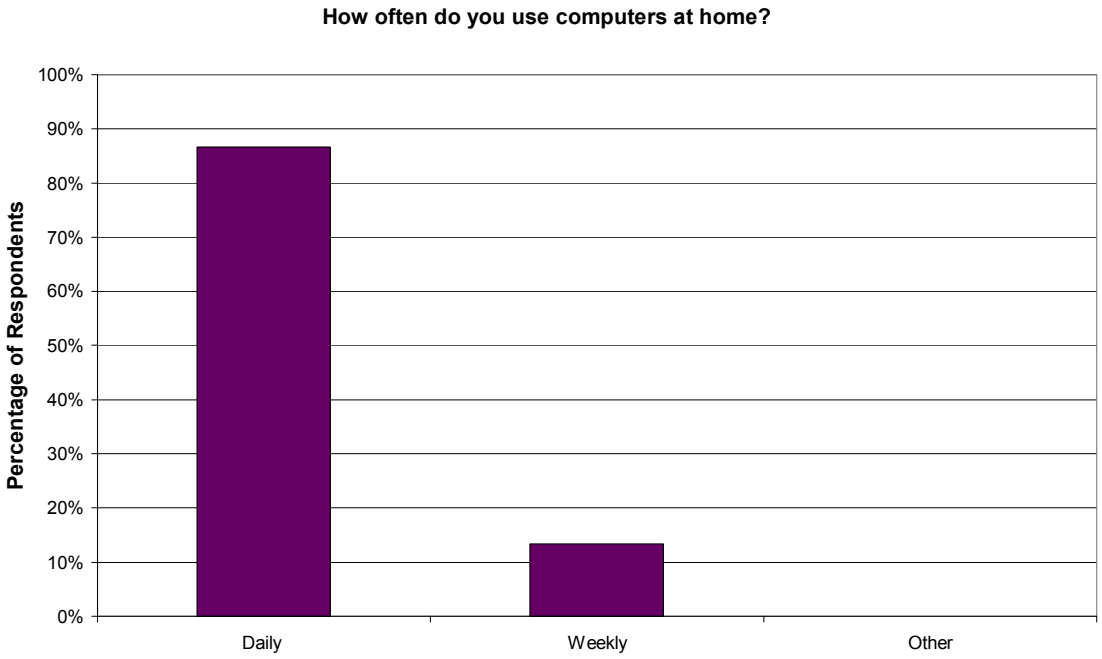
Twenty two learners used computers daily at home and 4 used home computers weekly. The breakdown by programme was as follows:

VTOS Learners

Nine VTOS learners used computers daily and 2 used computers weekly.



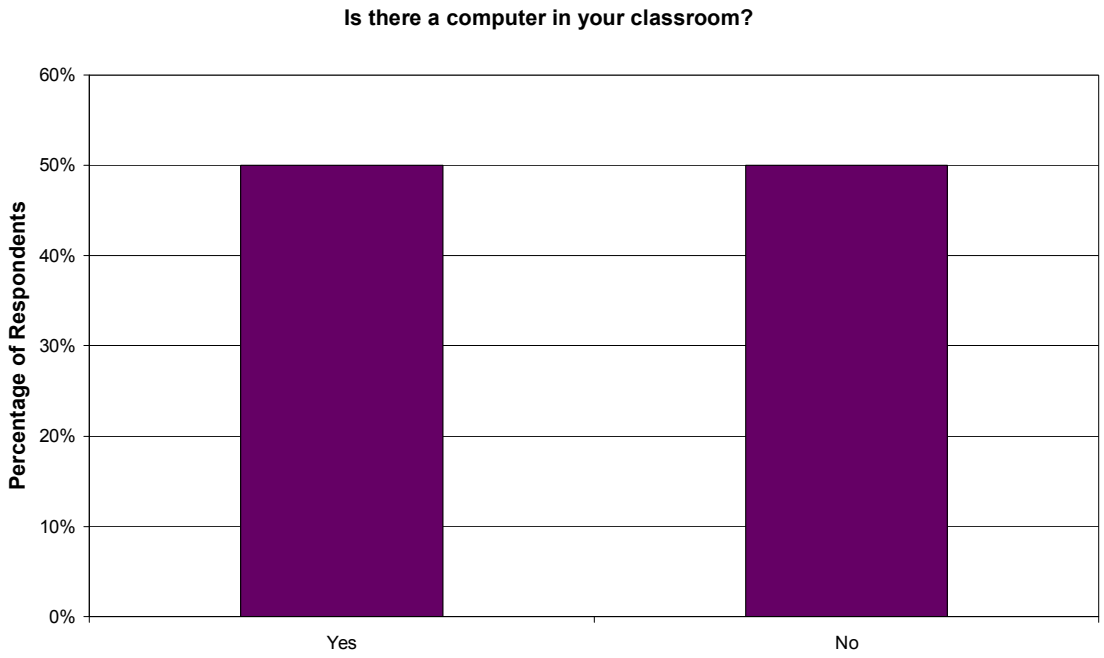
BTEI Learners



Thirteen BTEI learners surveyed used computers daily at home whereas the remaining 2 used computers at home on a weekly basis.

Question 9

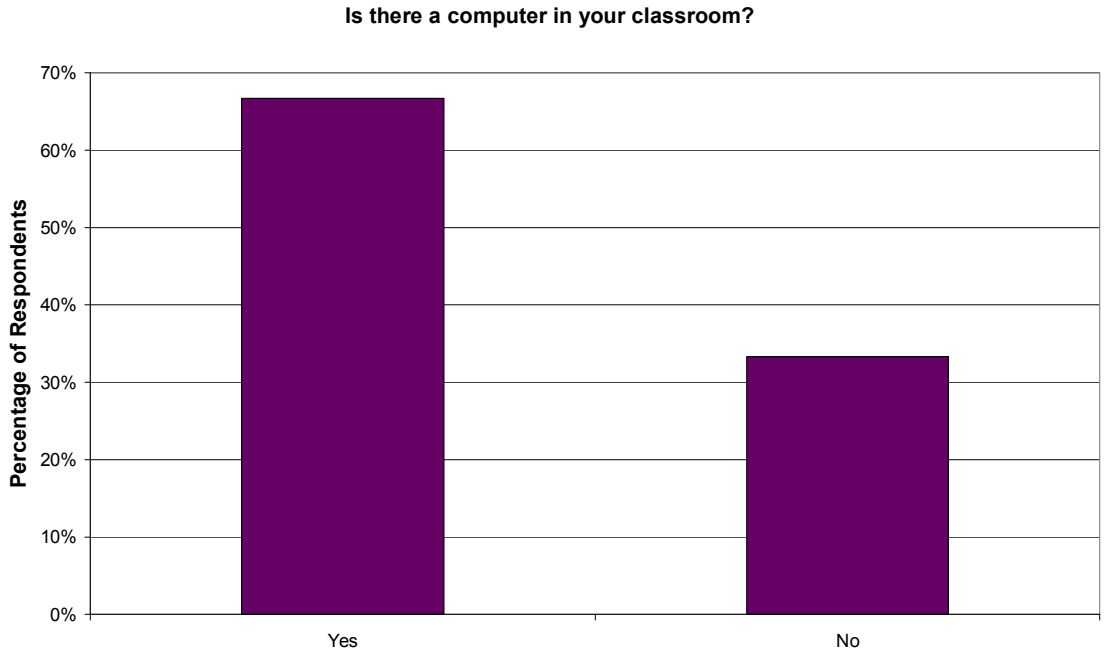
All learners were asked did they have a computer in their classrooms.



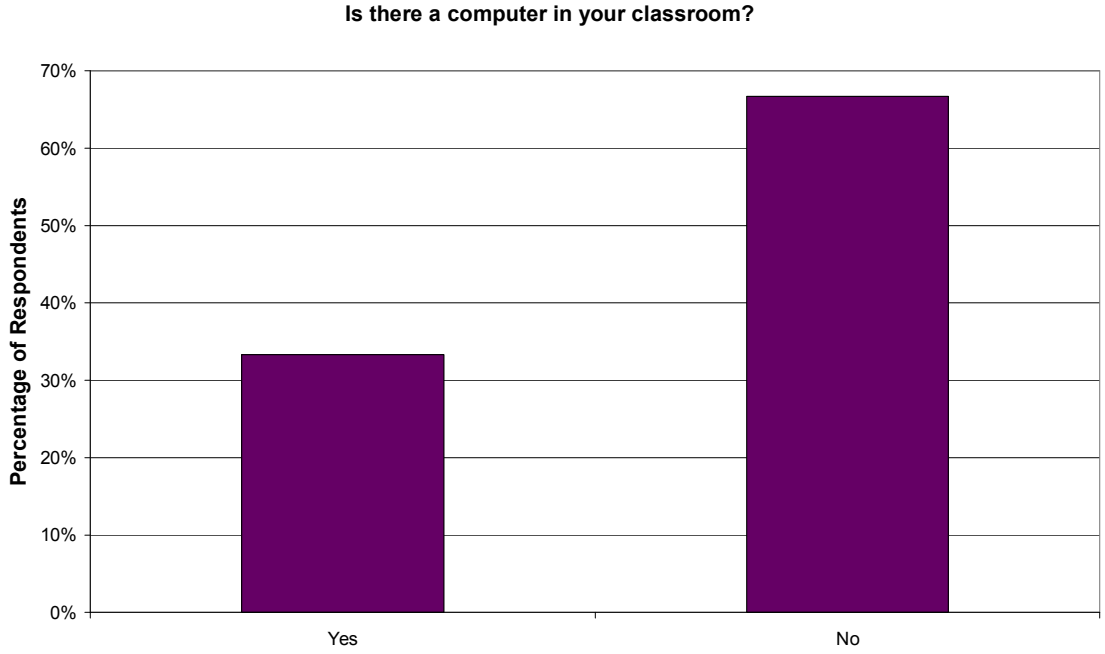
Half of all adult learners had a computer in their classrooms. The specific breakdown by programme was as follows:

VTOS Learners

Of the 15 VTOS learners surveyed, 10 had a computer in their classrooms whereas 5 had not.

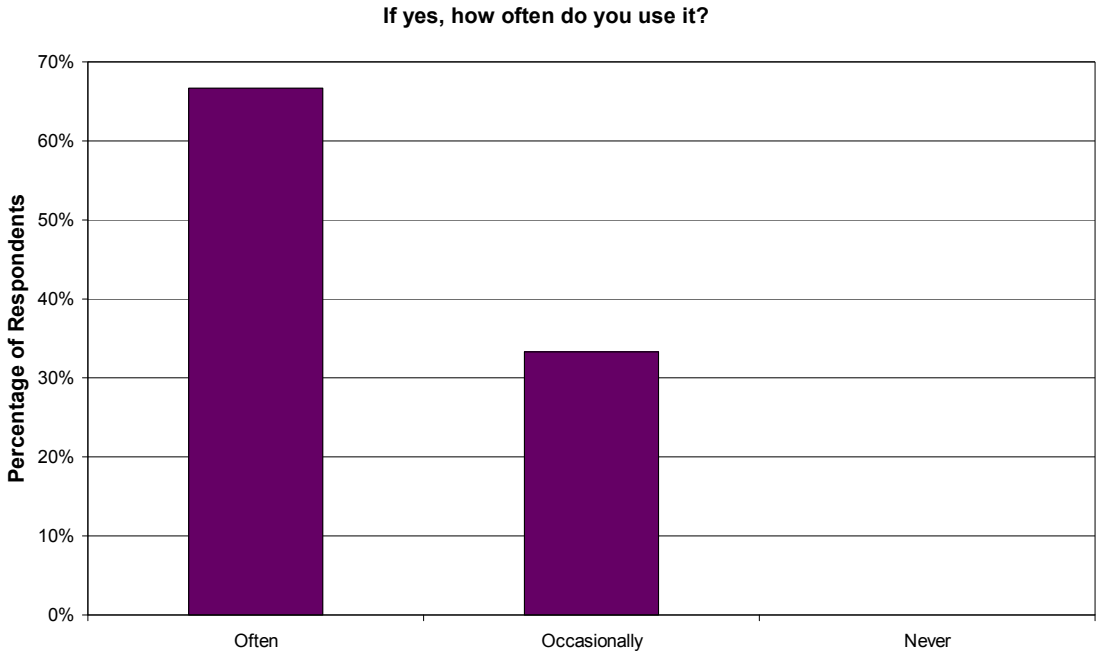


BTEI Learners



Of the 15 BTEI learners surveyed, 5 had a computer in their classrooms whereas 10 had not.

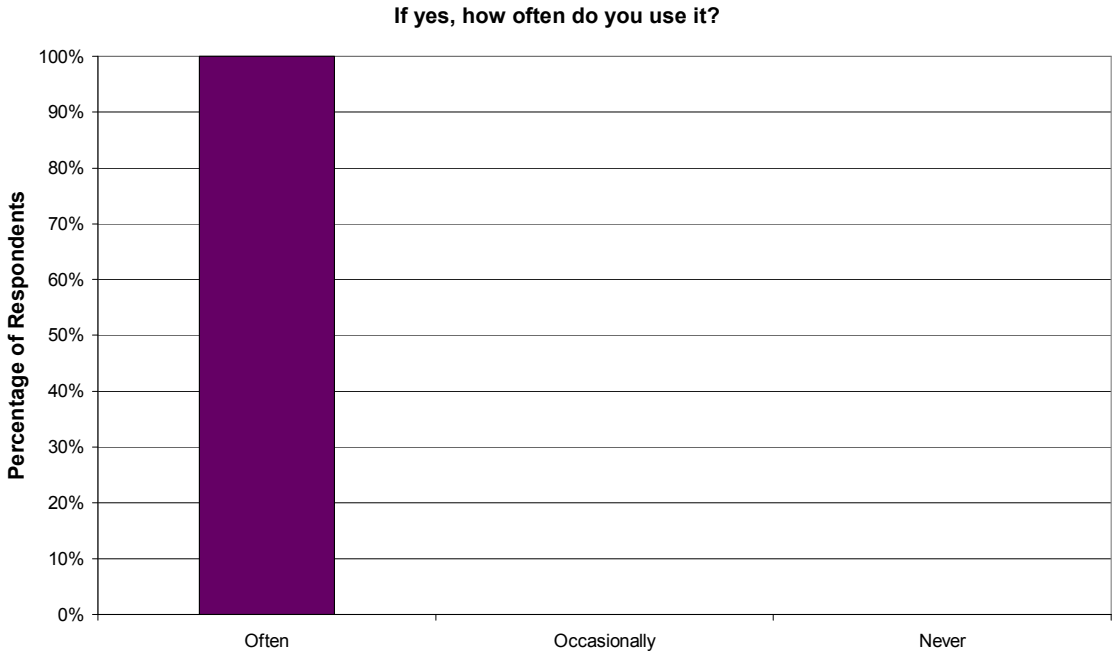
All learners were asked if there was a computer in their classroom, how often did they use it? Their answers were as follows:



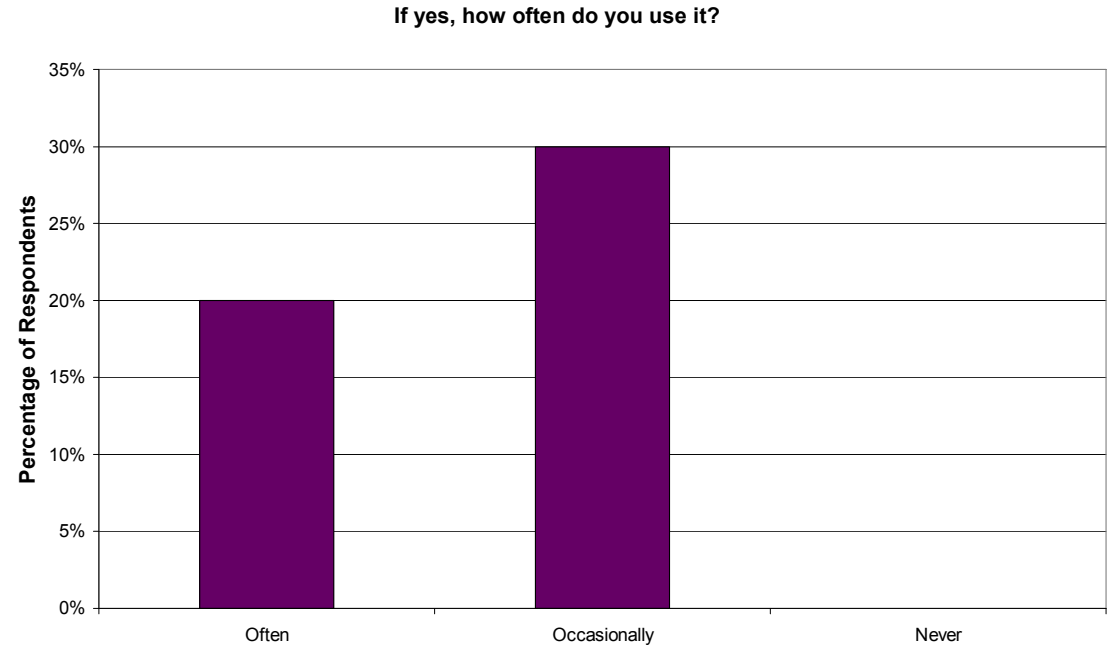
Of all of the 15 learners who had a computer in their classrooms, 10 used these computers often whereas 5 did not. The specific breakdown by programme was as follows:

VTOS Learners

All VTOS learners surveyed who had a computer in their classrooms used these computers often for "*surfing the Internet*", "*doing assignments*", "*classroom studies*", "*coursework*", "*research, Microsoft Word, Excel, PowerPoint, OCR, Adobe Photoshop, Mapedit and Web Design*".



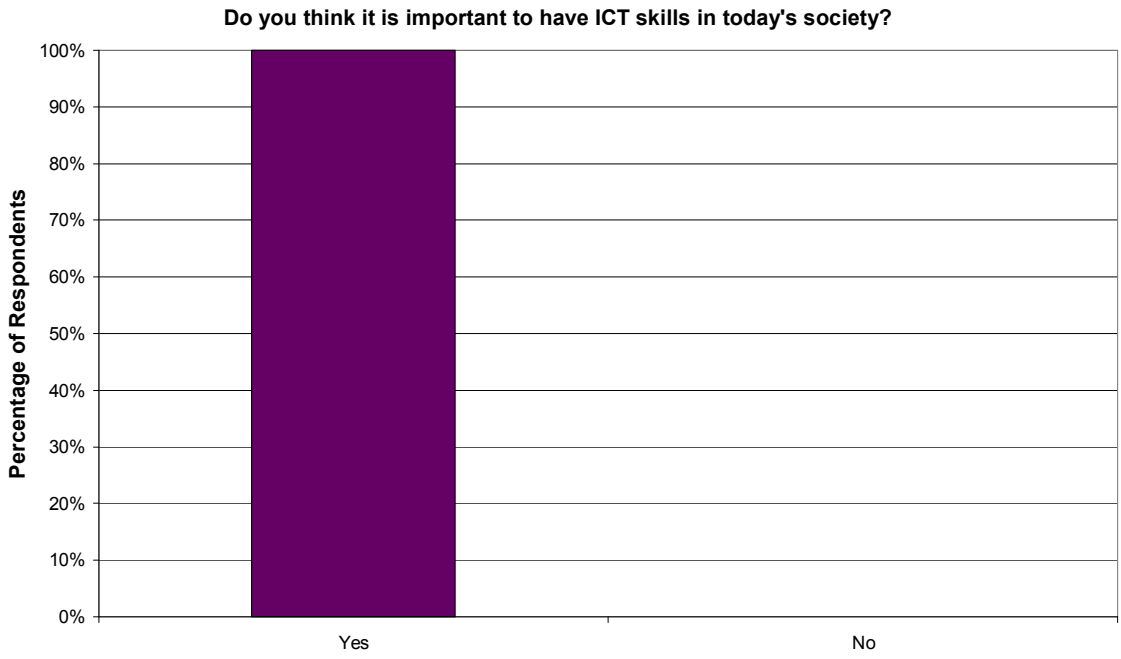
BTEI Learners



Of the 33% of BTEI learners who had a computer in their classrooms, only 20% of these learners used them often and used them for "*typing, printing*" and "*assignments and Internet*".

Question 10

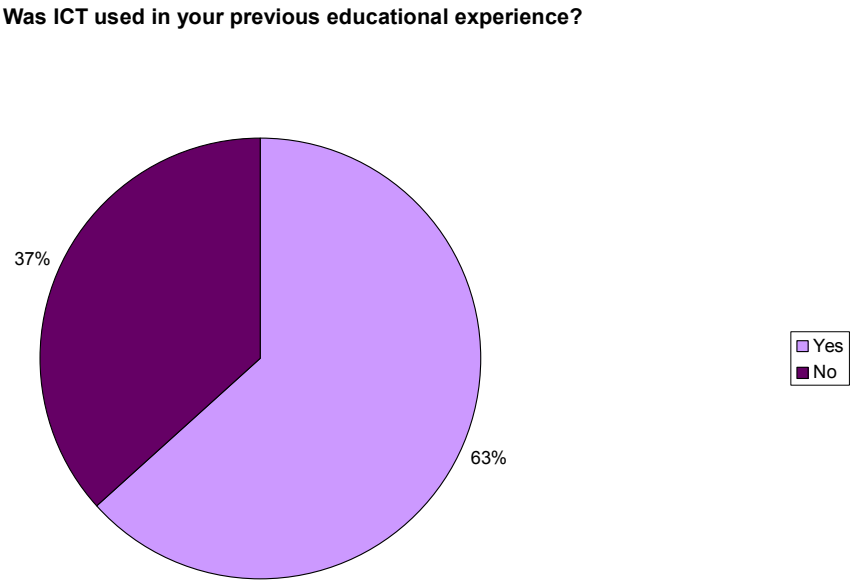
All learners were asked did they feel it is important to have ICT skills in today's society.



All respondents both VTOS and BTEI agreed that it is important to have ICT skills in today's society.

Question 11

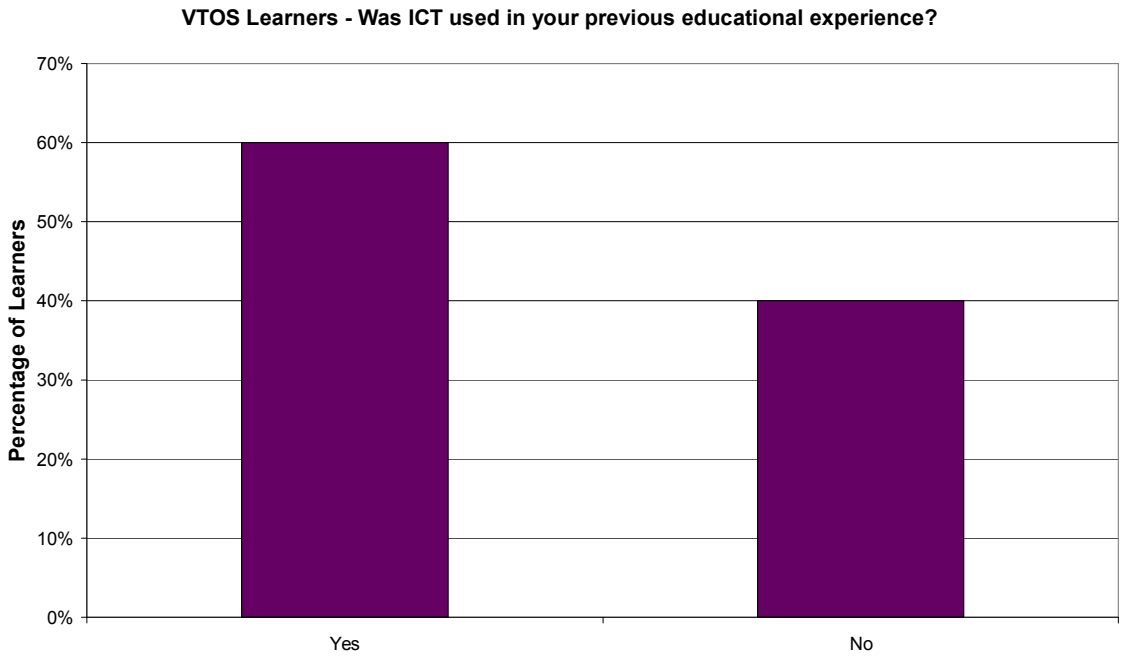
Learners were asked whether or not ICT was used in their previous educational experience.



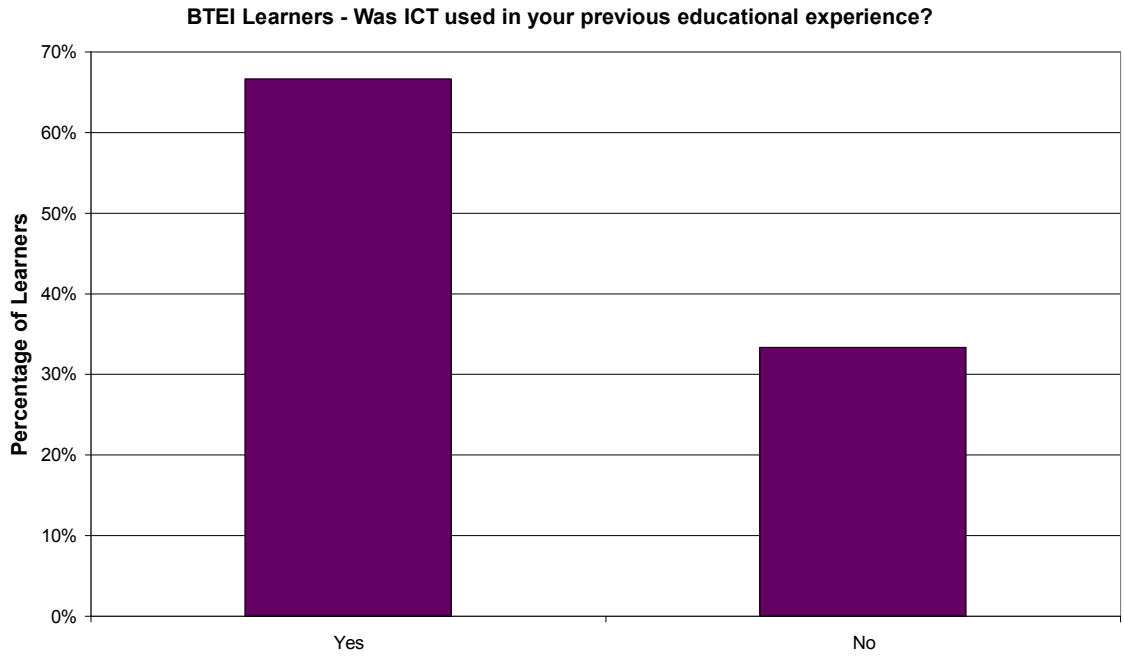
Of the 30 learners surveyed, 19 learners' pervious educational experiences incorporated ICT whereas 11 had no previous experience of using ICT in learning. The specific breakdown by programme was as follows:

VTOS Learners

Nine VTOS learners surveyed had previous educational experience of ICT.



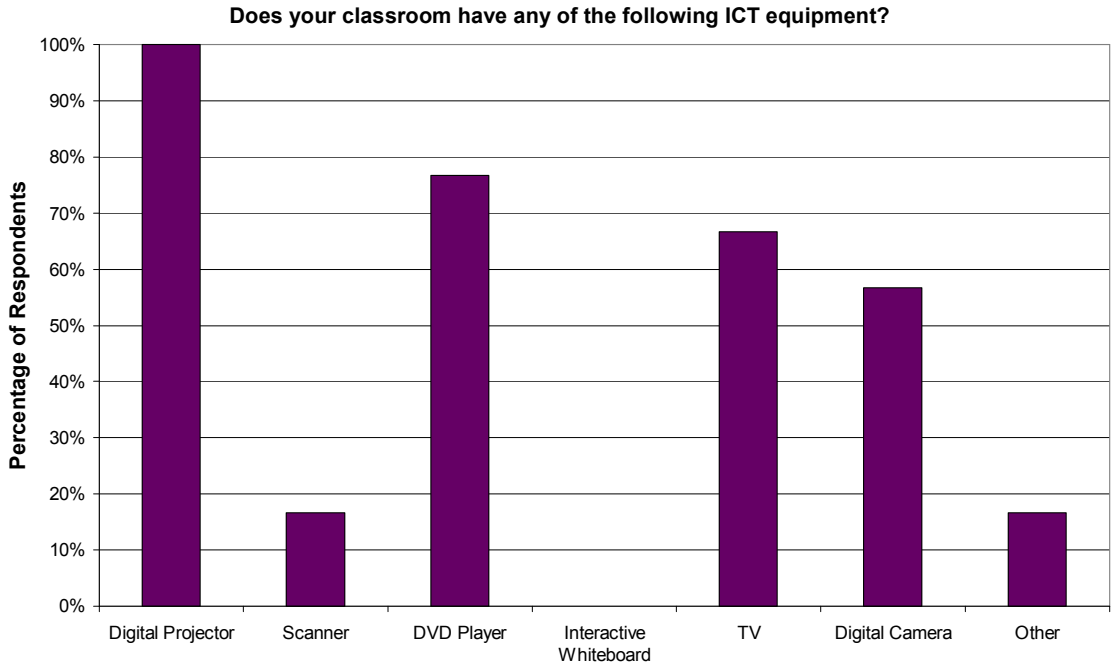
BTEI Learners



Ten BTEI learners surveyed had previous educational experience of ICT.

Question 12

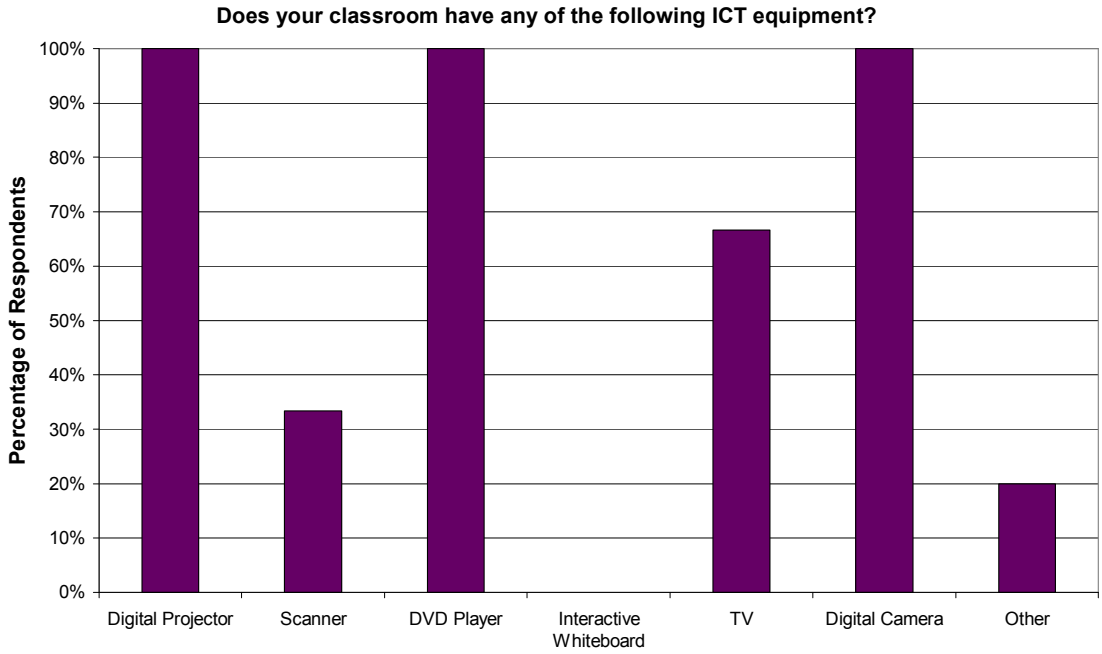
All learners were asked what ICT equipment they had access to. Their responses were:



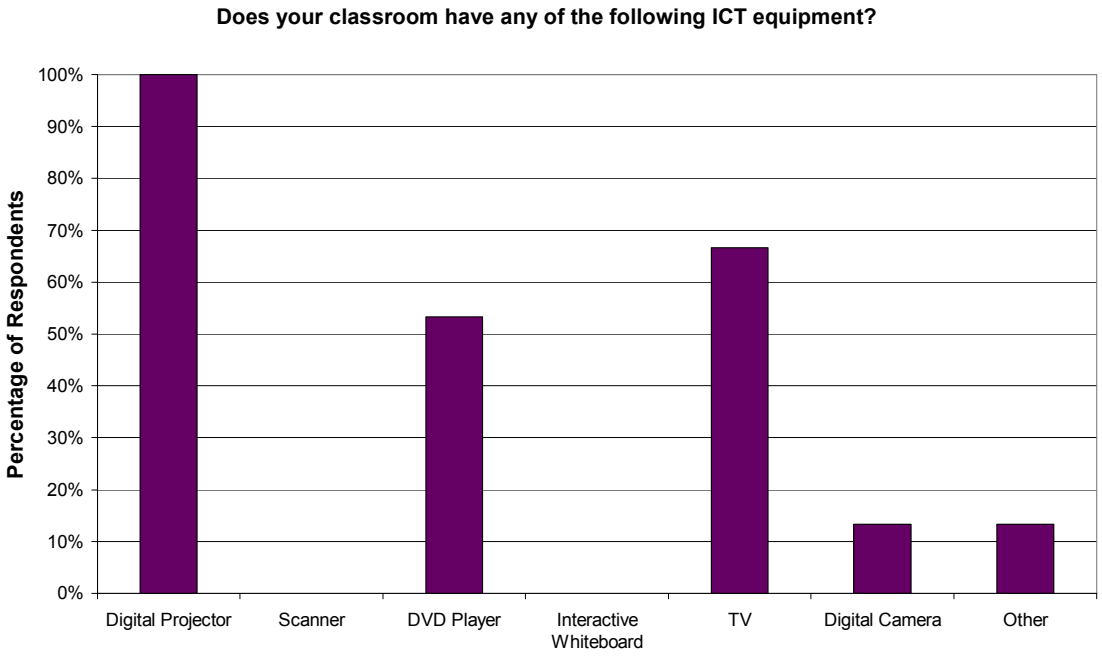
All learners had access to a digital projector, 5 had a scanner, 23 had a DVD player, 20 had a TV, 17 had a digital camera and 5 had other ICT equipment. The specific breakdown by programme was as follows:

VTOS Learners

All VTOS learners surveyed had a digital projector, a DVD player and a digital camera. Ten VTOS learners had a TV, 5 had a scanner and 3 had access to other ICT equipment such as VCR recorders, printers and web cameras.



BTEI Learners

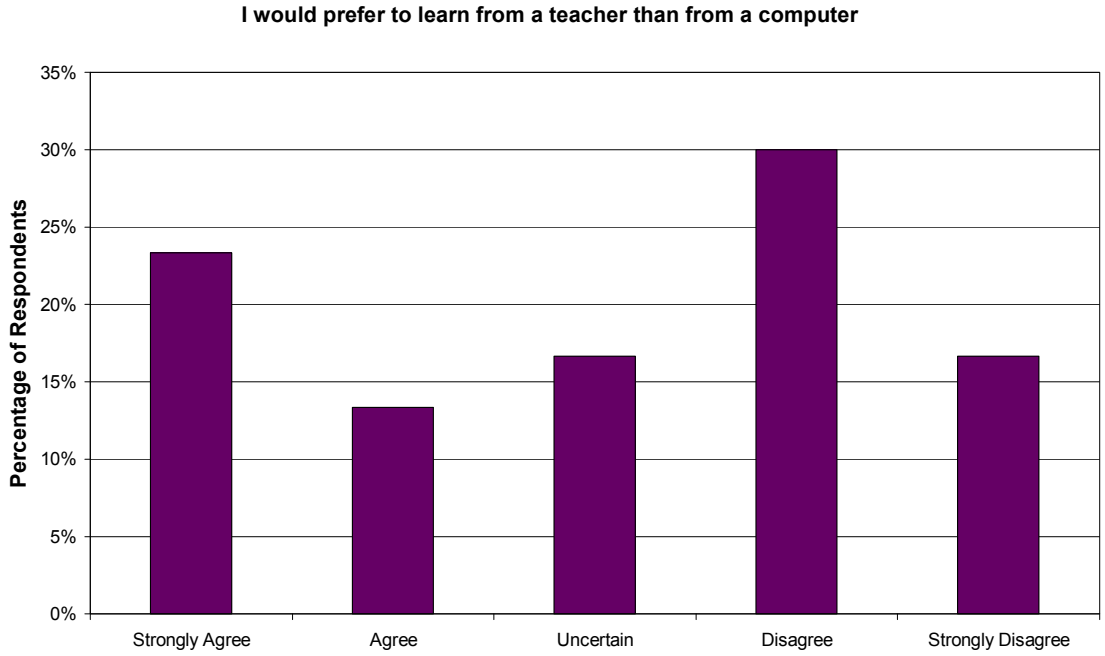


All BTEI learners surveyed had a digital projector, 8 had a DVD player, 10 had a TV, 2 had a digital camera and 2 had access to other ICT equipment such as VCR recorders.

Question 13

In question 13, learners were asked to rate their response to a number of statements. The statements and associated responses were:

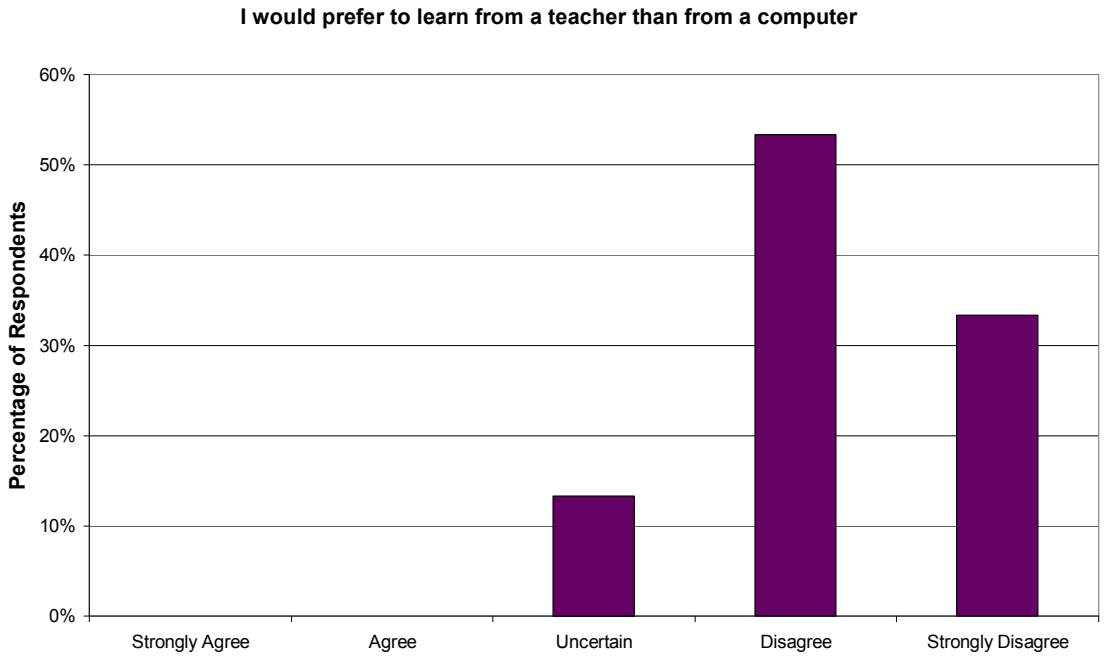
Statement 1 - I would prefer to learn from a teacher than from a computer.



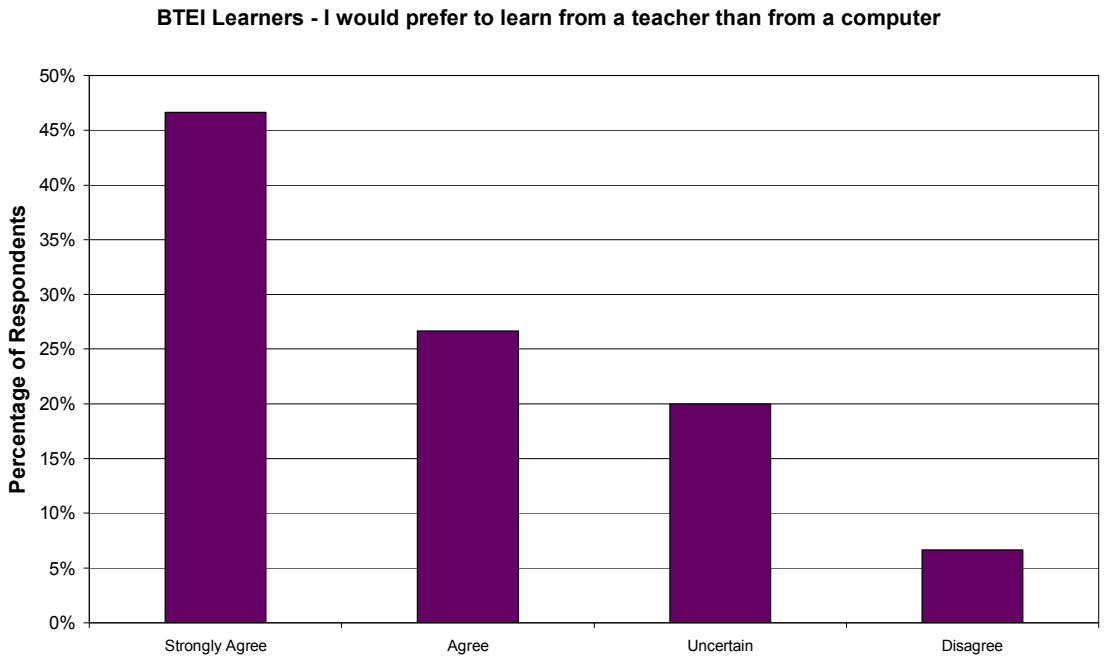
Out of the 30 learners surveyed, 7 strongly agreed with the statement, 4 agreed, 5 were uncertain, 9 disagreed and the remaining 5 strongly disagreed. The specific breakdown by programme was as follows:

VTOS Learners

Of the 15 VTOS learners surveyed, 2 were uncertain if they would prefer to learn from a teacher than from a computer, 8 disagreed and 5 strongly disagreed.

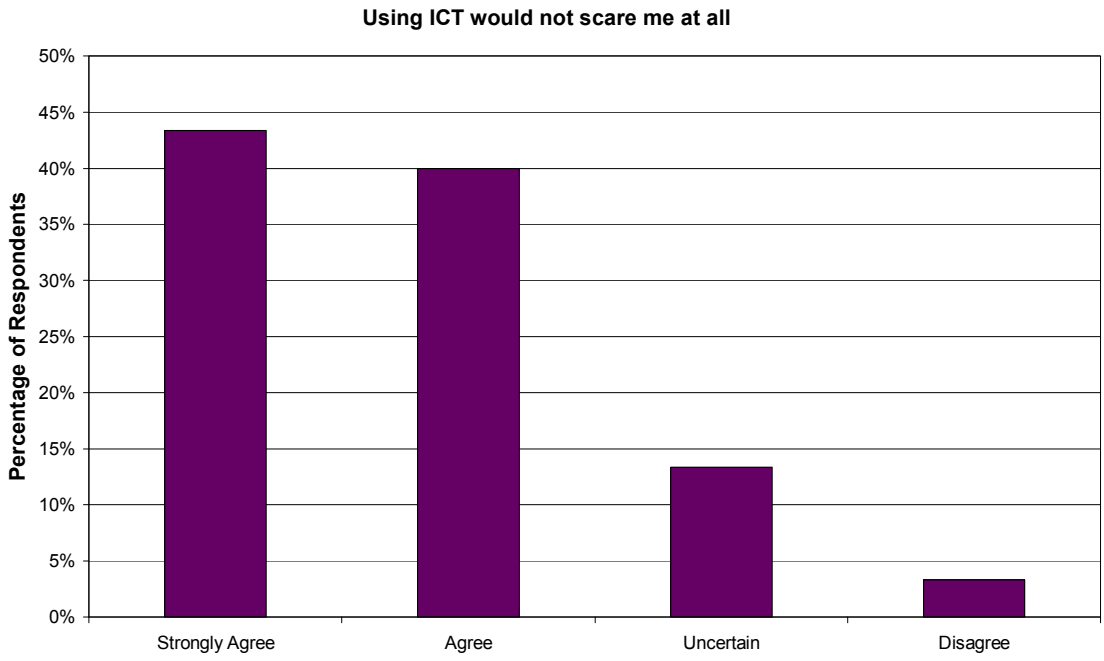


BTEI Learners



Of the 15 BTEI learners surveyed, 7 strongly agreed that they would prefer to learn from a teacher than a computer, 4 agreed, 3 were uncertain and one BTEI learner disagreed.

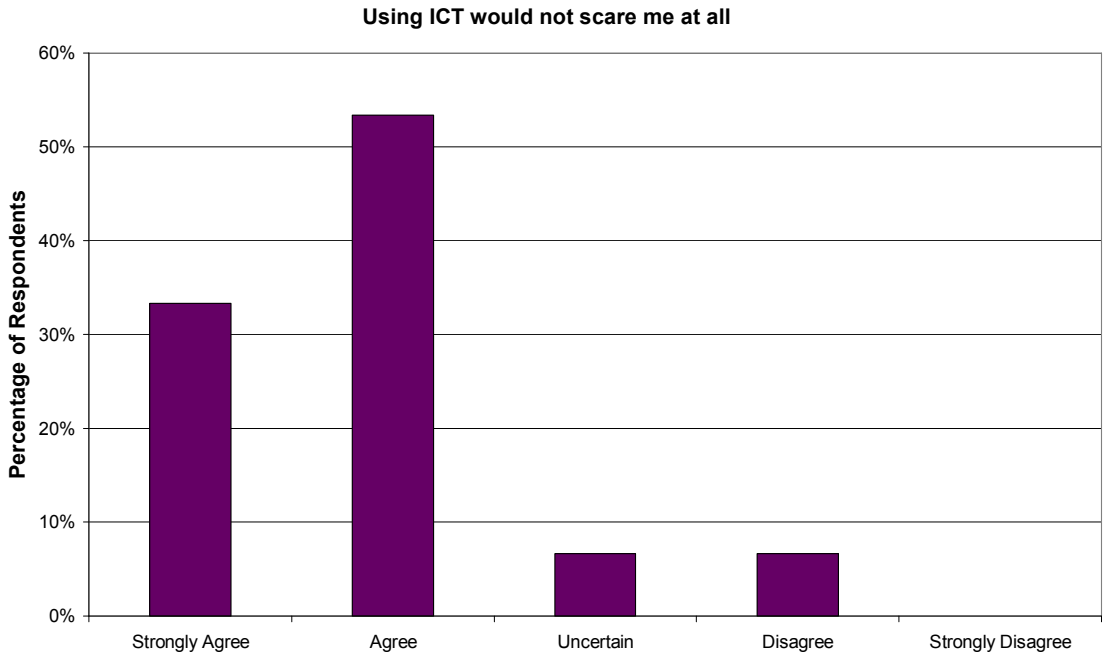
Statement 2 - Using ICT would not scare me at all



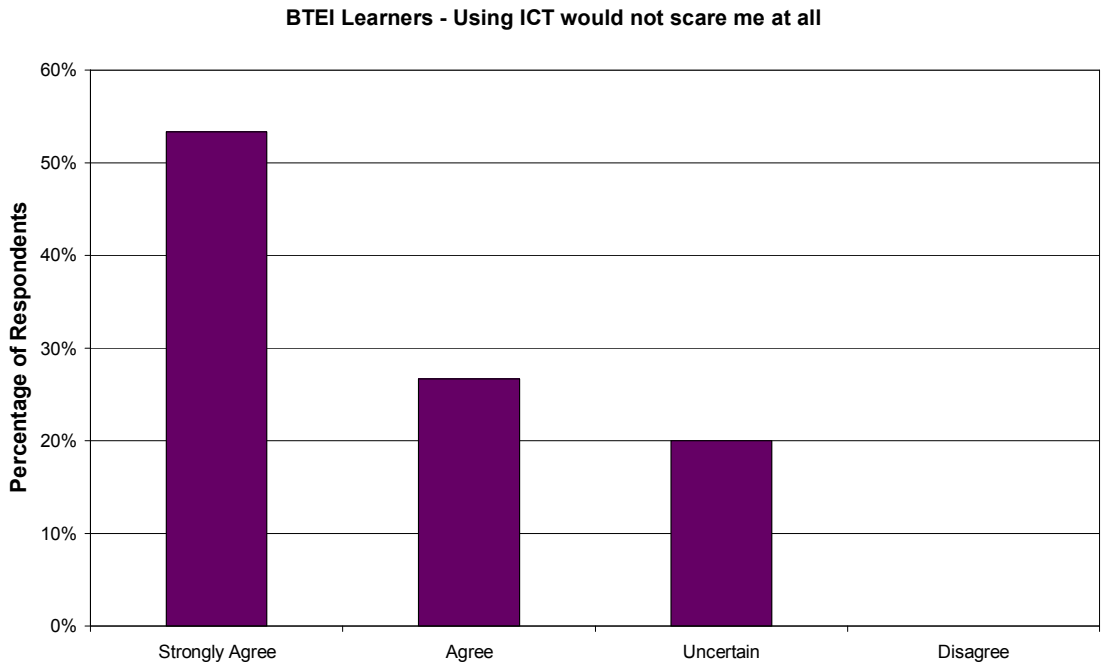
Of the 30 learners surveyed, 13 strongly agreed that using ICT would not scare them, 12 agreed, 4 were uncertain and one learner disagreed. The specific breakdown by programme was as follows:

VTOS Learners

Of the 15 VTOS learners surveyed, 5 strongly agreed and 8 agreed that using ICT would not scare them at all. One learner was uncertain and one learner disagreed.

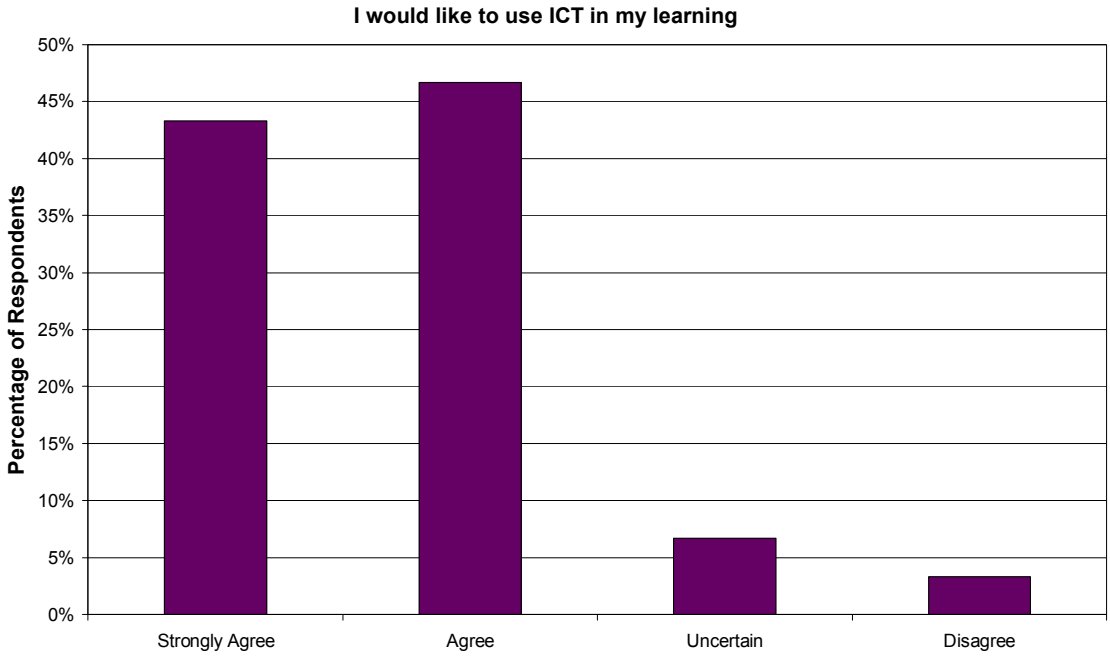


BTEI Learners



Eight of the BTEI learners surveyed strongly agreed and 4 agreed with the statement whereas 3 were uncertain.

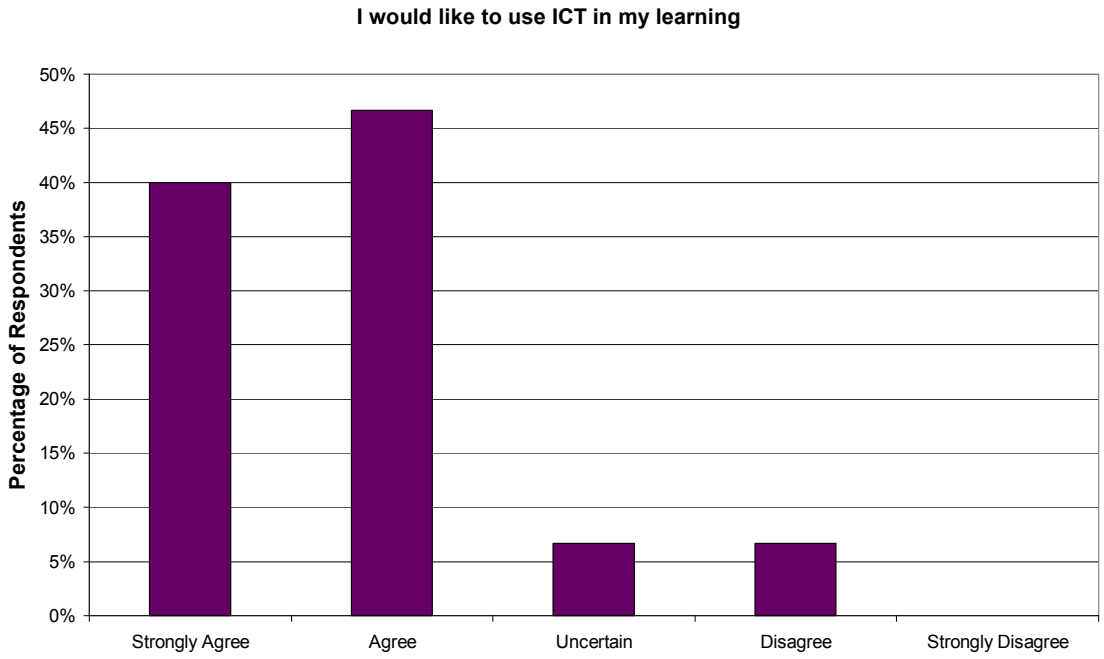
Statement 3 - I would like to use ICT in my learning



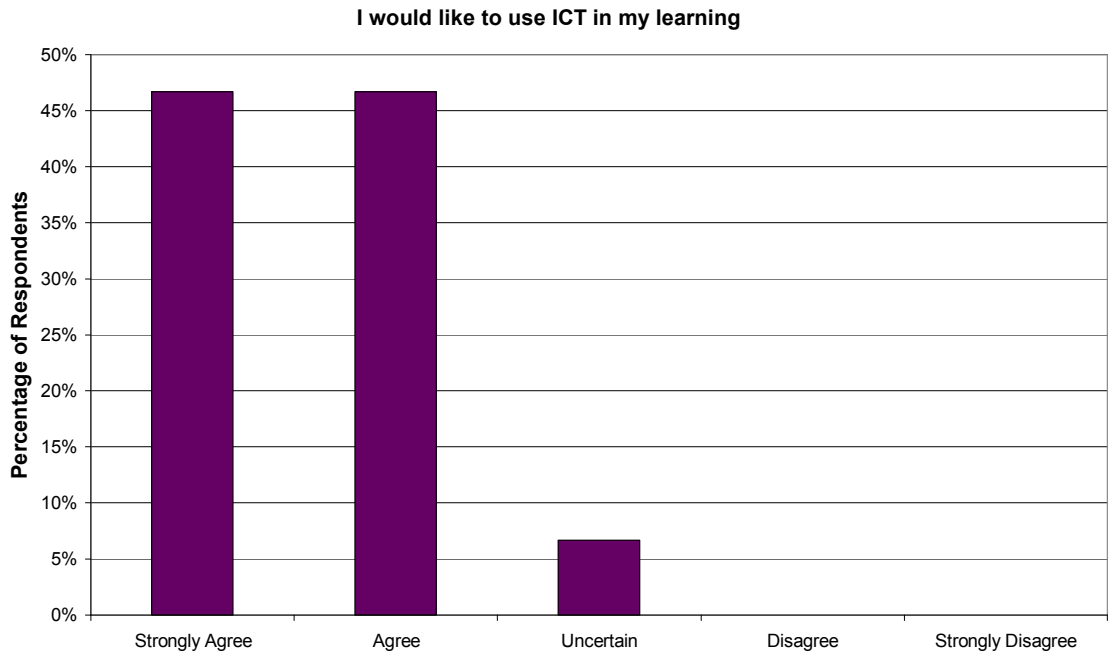
Of the 30 learners surveyed, 13 strongly agreed and 14 agreed with the statement that they would like to use ICT in their learning. The specific breakdown by programme was as follows:

VTOS Learners

Of the 15 VTOS learners surveyed, 6 strongly agreed and 7 agreed that they would like to use ICT in their learning. One learner was uncertain and 1 learner disagreed.

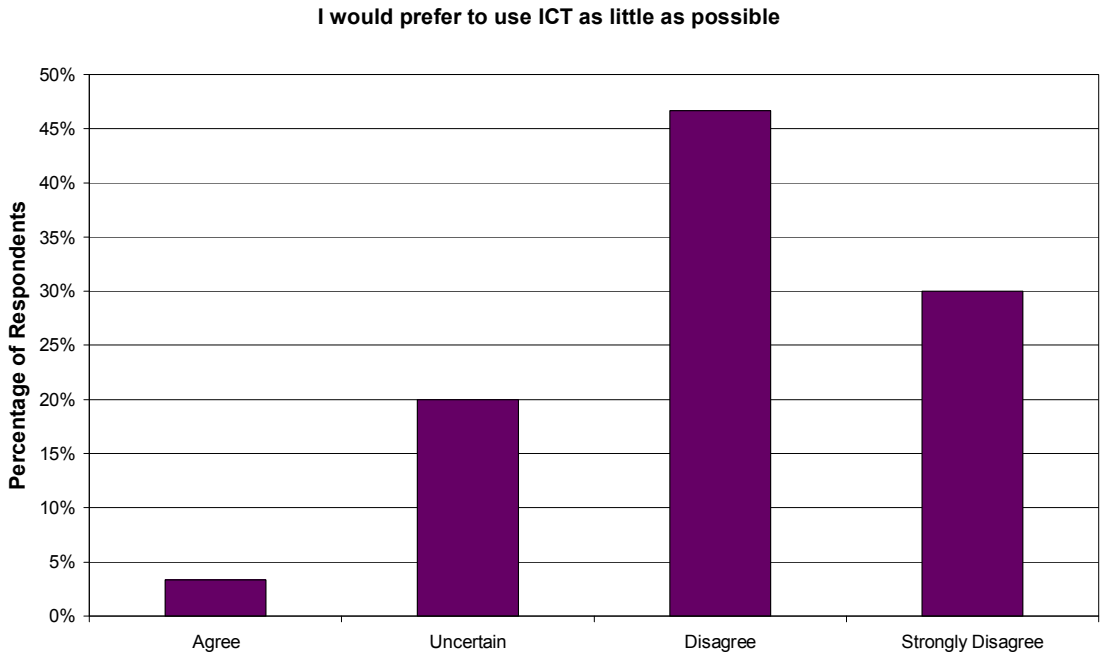


BTEI Learners



Out of the 15 BTEI learners surveyed, 7 learners strongly agreed and 7 agreed that they would like to use ICT in their learning. One learner was uncertain.

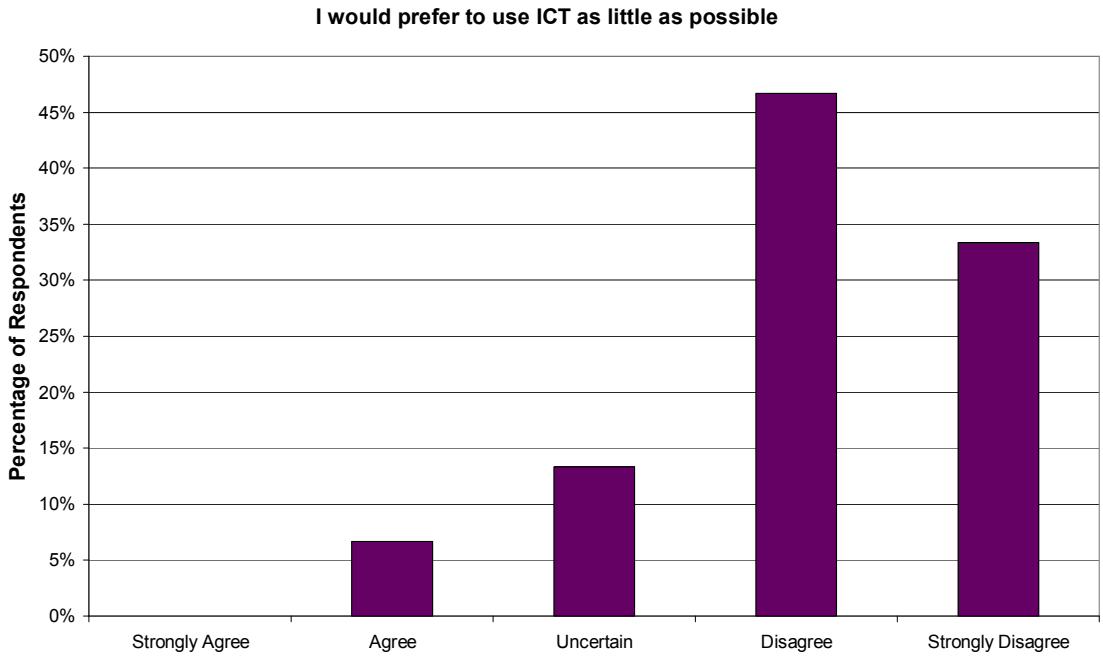
Statement 4 - I would prefer to use ICT as little as possible



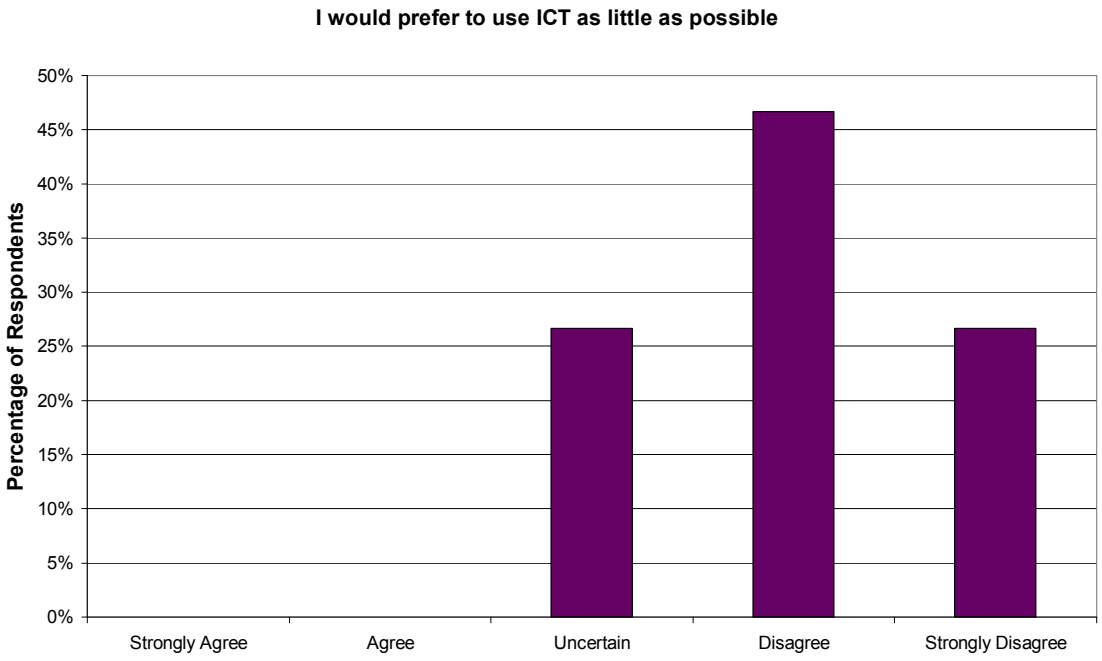
Only one learner agreed that they would prefer to use ICT as little as possible, 6 learners were uncertain whereas 14 learners disagreed and 9 learners strongly disagreed. The specific breakdown by programme was as follows:

VTOS Learners

Of the 15 VTOS learners surveyed, one agreed that they would prefer to use ICT as little as possible, 2 were uncertain, 7 disagreed and 5 strongly disagreed.

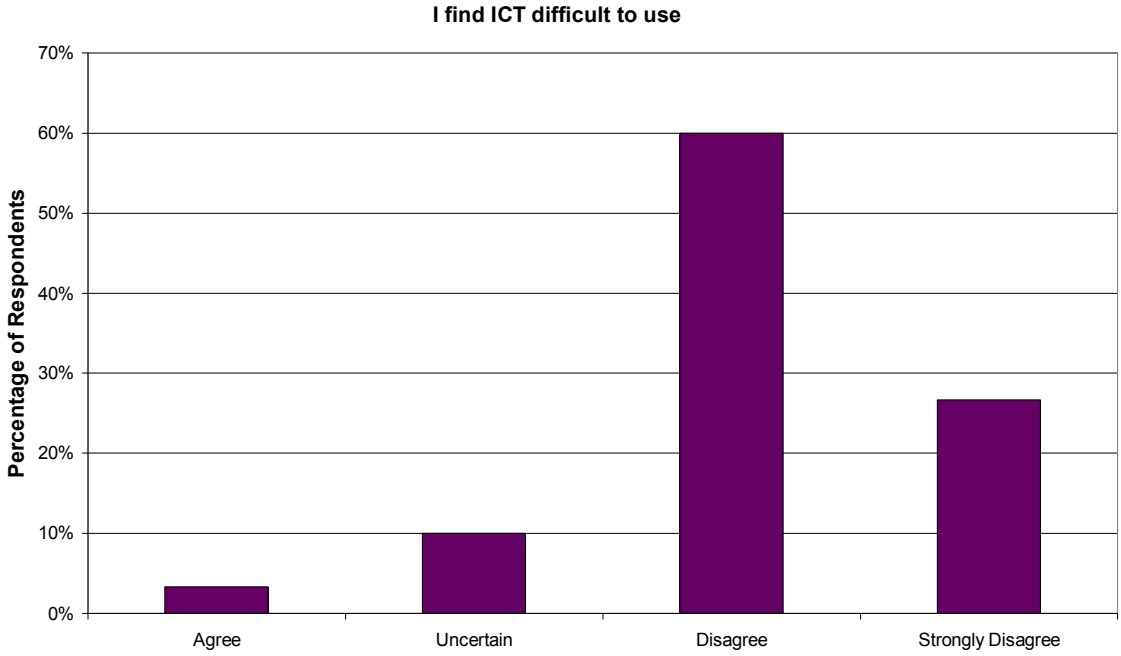


BTEI Learners



Of the 15 BTEI learners surveyed, 4 were uncertain as to whether or not they would prefer to use ICT as little as possible, 7 disagreed and 4 strongly disagreed.

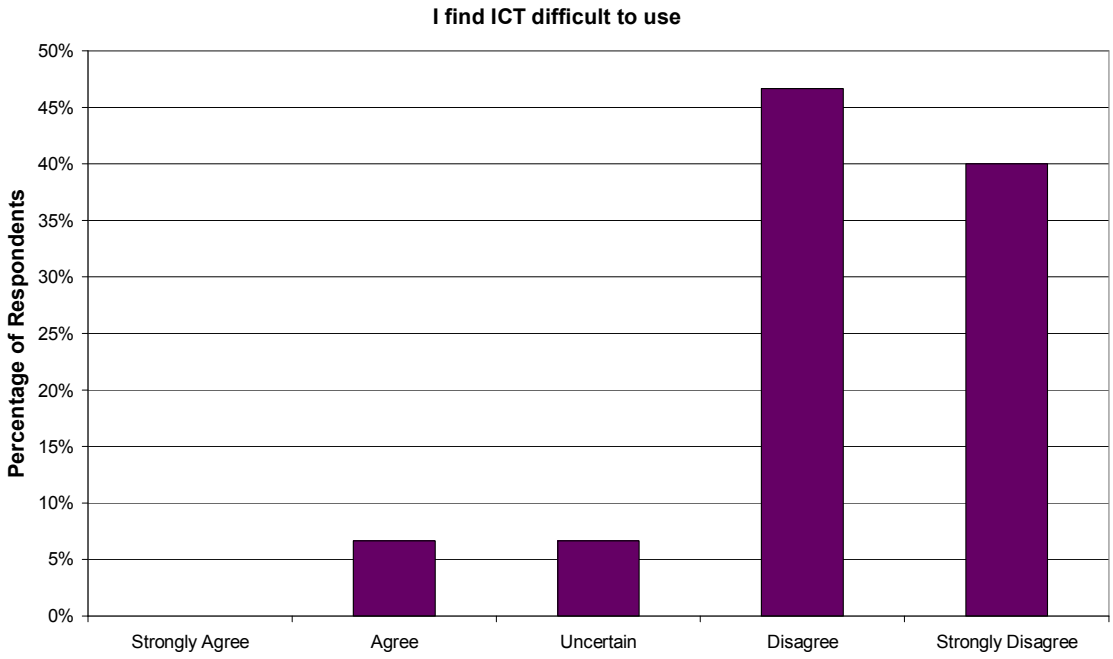
Statement 5 - I find ICT difficult to use



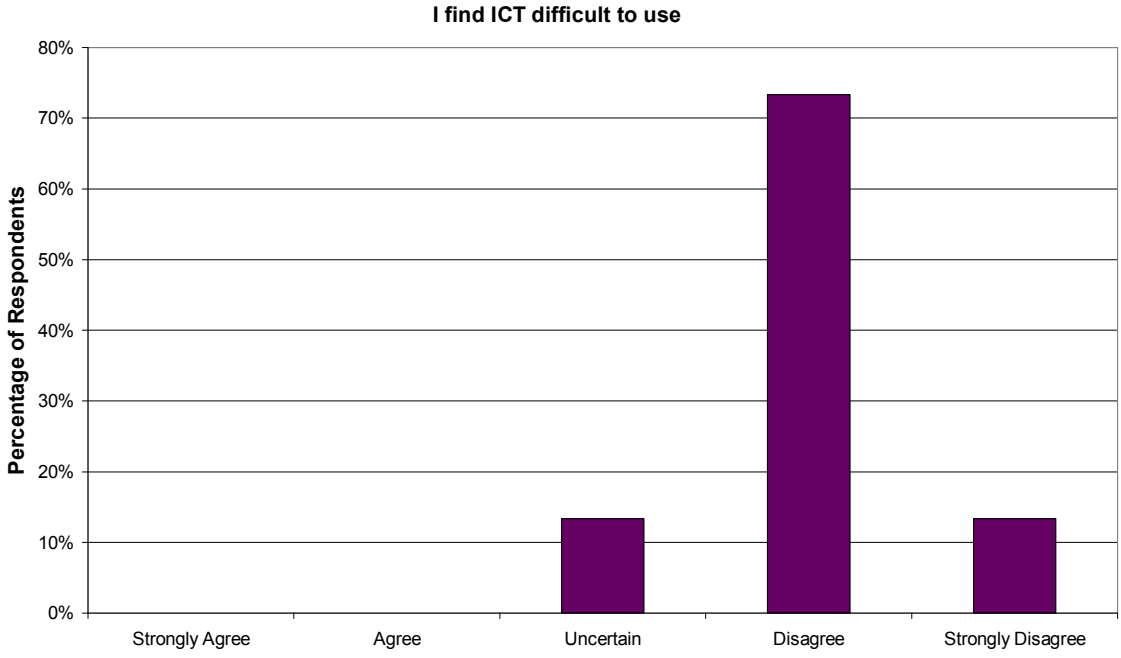
Of the 30 learners surveyed, one learner agreed with the statement "I find ICT difficult to use", 3 learners were uncertain, 18 disagreed and 8 strongly disagreed. The specific breakdown by programme was as follows:

VTOS Learners

Of the 15 VTOS learners surveyed, one learner agreed that they find ICT difficult to use, one learner was uncertain, 7 disagreed and 6 strongly disagreed.

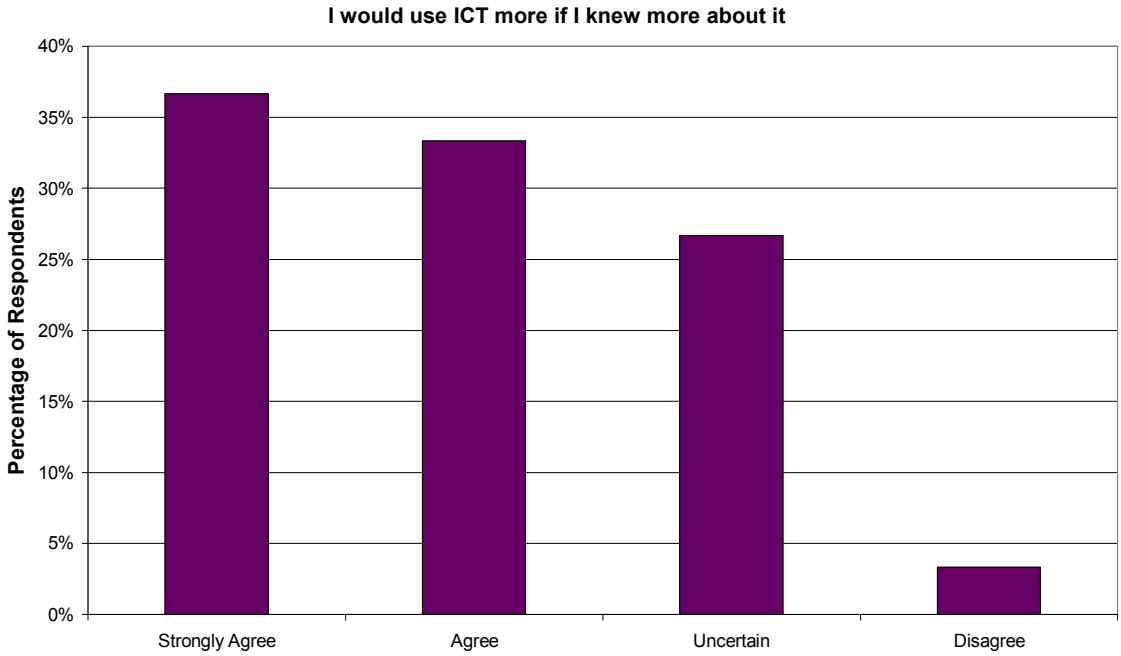


BTEI Learners



Eleven of the BTEI learners surveyed disagreed and 2 strongly disagreed that they find ICT difficult to use whereas 2 learners were uncertain

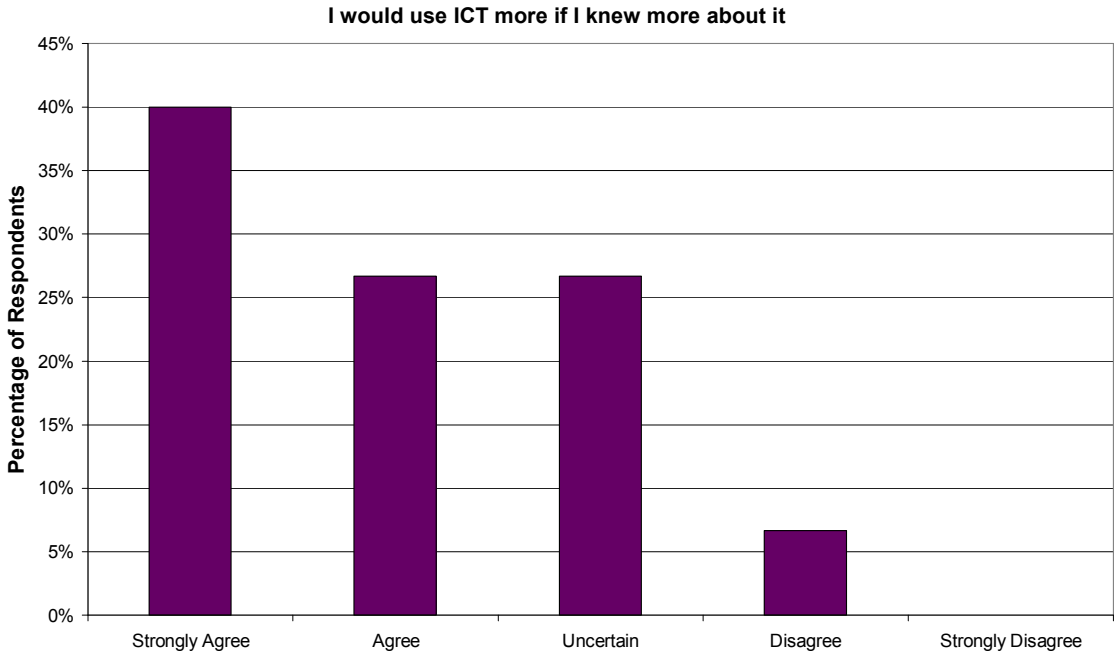
Statement 6 - I would use ICT more if I knew more about it



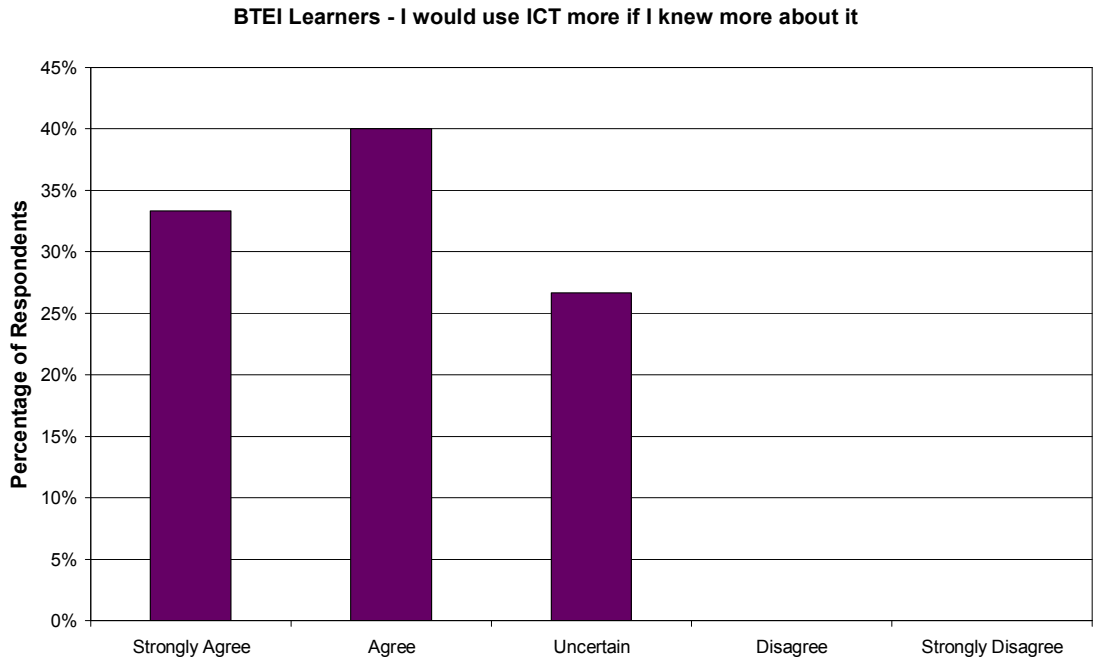
Of the 30 learners surveyed, 11 strongly agreed and 10 agreed that they would use ICT more if they knew more about it. Eight learners were uncertain and one learner disagreed. The specific breakdown by programme was as follows:

VTOS Learners

Of the 15 VTOS learners surveyed, 6 strongly agreed and 4 agreed that they would use ICT more if they knew more about it. Four learners were uncertain and one learner disagreed.

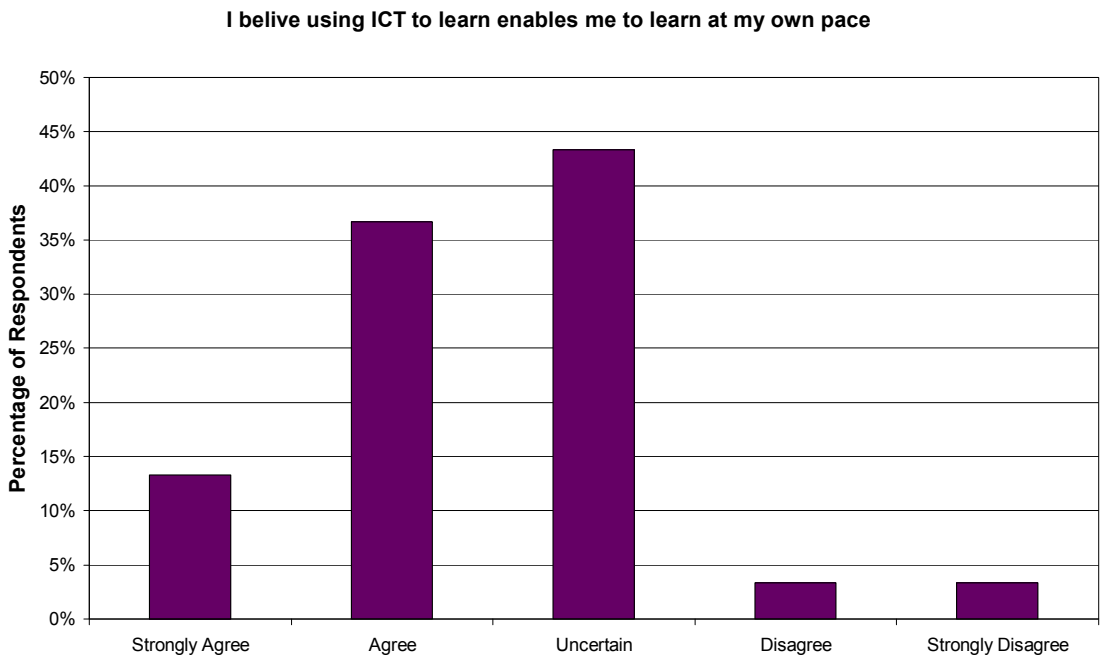


BTEI Learners



Of the 15 BTEI learners surveyed, 5 strongly agreed and 6 agreed that they would ICT more if they knew more about it. Four learners were uncertain.

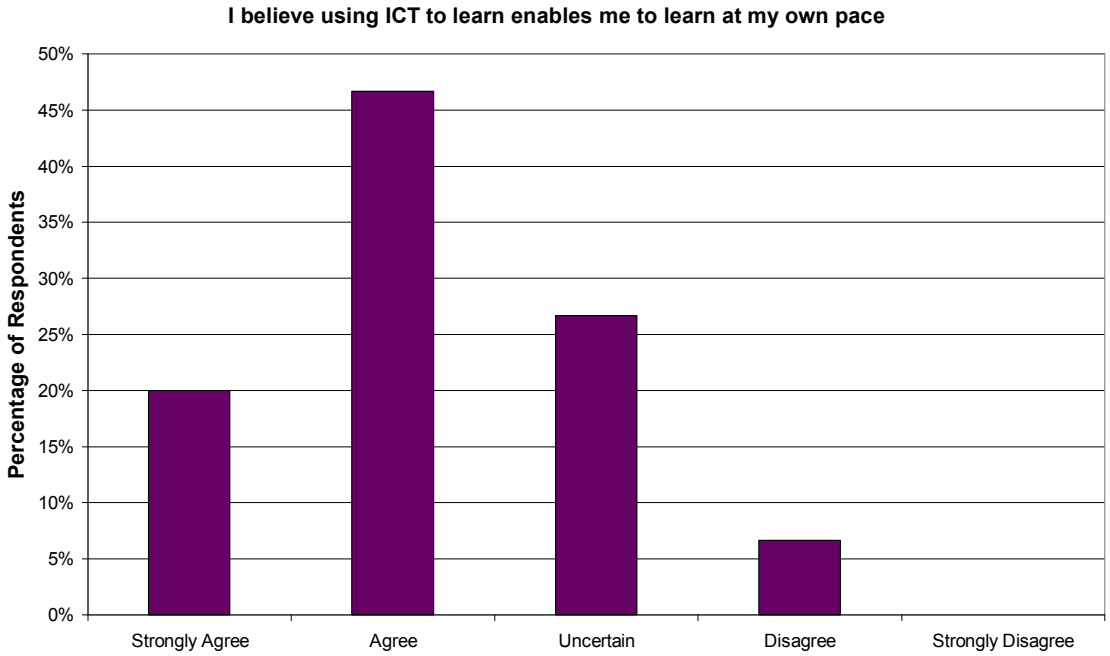
Statement 7 - I believe using ICT to learn enables me to learn at my own pace



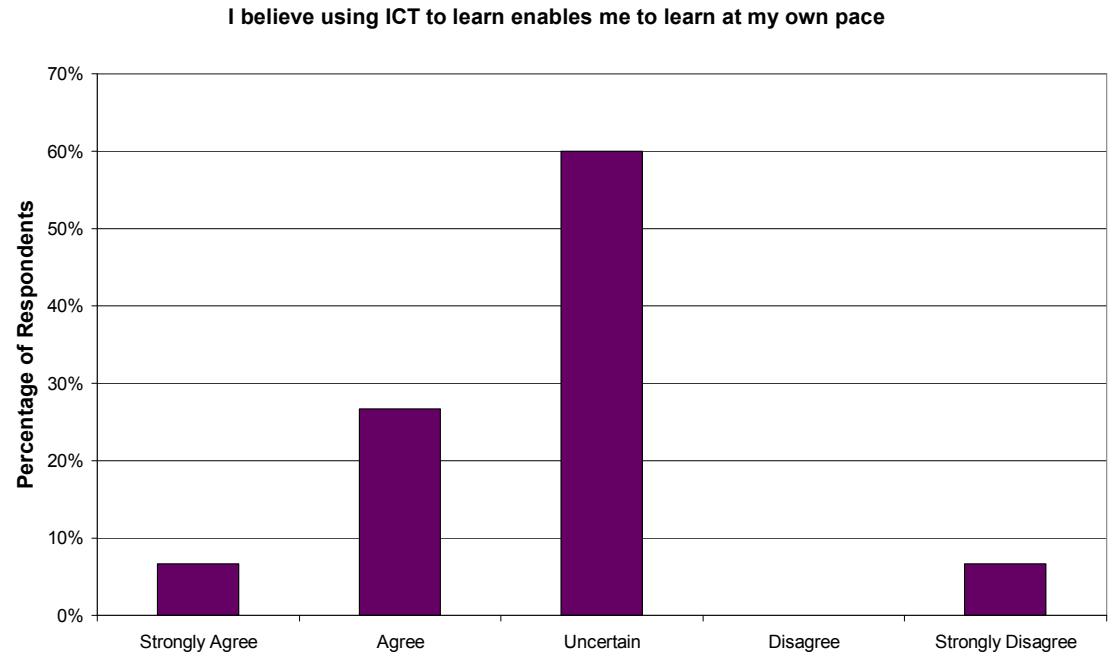
Out of all 30 learners surveyed, 4 learners strongly agreed and 11 agreed that using ICT to learn enables learners to learn at their own pace. Thirteen learners were uncertain, one learner disagreed and one learner strongly disagreed.

VTOS Learners

Of the 15 VTOS learners surveyed, 3 learners strongly agreed and 7 learners agreed that using ICT to learn enables them to learn at their own pace.



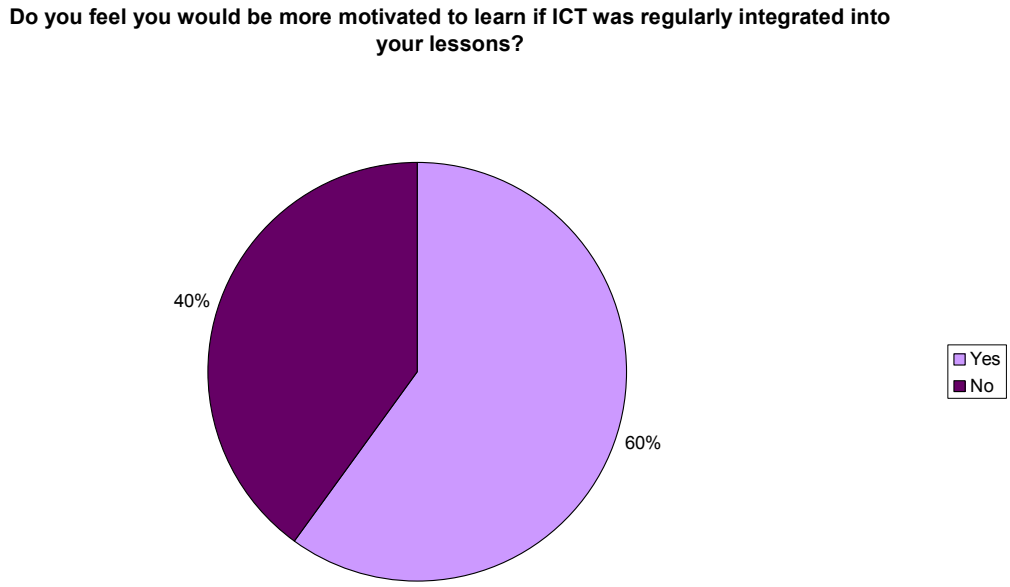
BTEI Learners



Out of the 15 BTEI learners surveyed, one learner strongly agreed and 4 agreed that ICT enables them to learn at their own pace. Nine learners were uncertain and one learner strongly disagreed.

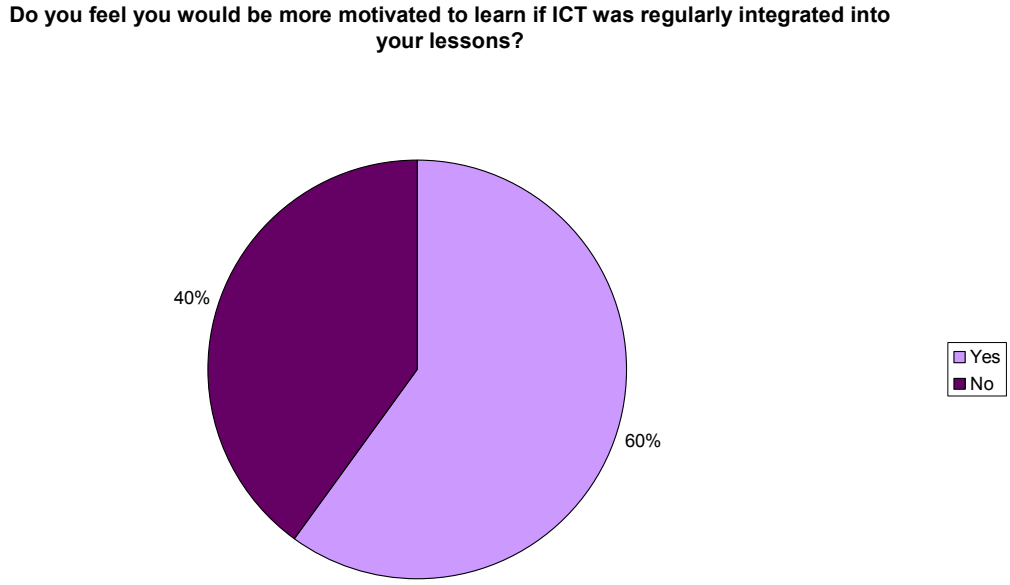
Question 14

All learners were asked if they would be more motivated to learn if ICT was regularly integrated into their lessons, their responses were:



Out of all 30 learners surveyed, 18 learners agreed whereas 12 learners disagreed. The specific breakdown by programme was as follows:

VTOS Learners



Of the 15 VTOS learners surveyed, 60% agreed and 40% disagreed that they would be more motivated to learn if ICT was regularly integrated into their lessons. The reasons given for those who agreed included;

"*All business evolves around ICT*"

"*You get to know how the equipment works and sometimes using it in a practical sense can be more clear than just taking it from the wording of it*"

"*I learn better from visual effects*"

"*I enjoy learning new things*"

"*It gives different views and broadens my learning capabilities*"

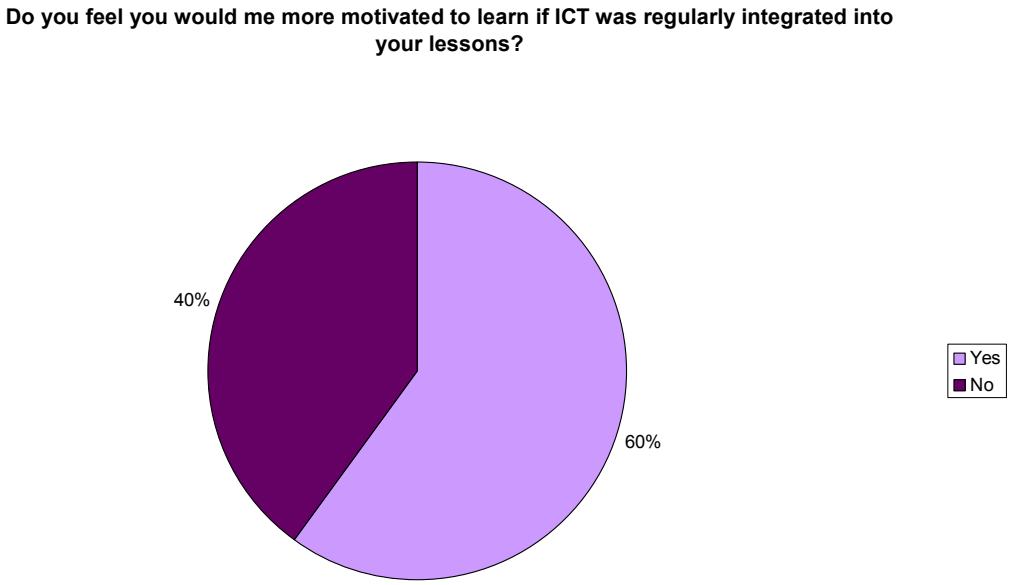
"*Because you can recall on screen easily what you have done so far*"

"*Because growing up I never got the chance to learn on them*"

"*Get more information on my own without being confused*"

"*Visual impact*"

BTEI Learners



Out of the 15 BTEI learners surveyed, 60% also agreed that they would be more motivated to learn in ICT was regularly integrated into their lessons whereas 40% disagreed. Of those who agreed, the reasons given were:

"*Handier, more easy to learn*"

"*It gives you a break from direct theory, it's a different way of learning*"

"*More concentration in class environments*"

"*I would gain confidence in using it the more often I did so*"

"*Because you will gain more experience i.e. improve your computer skills*"

"*So that in the workplace I won't find it difficult*"

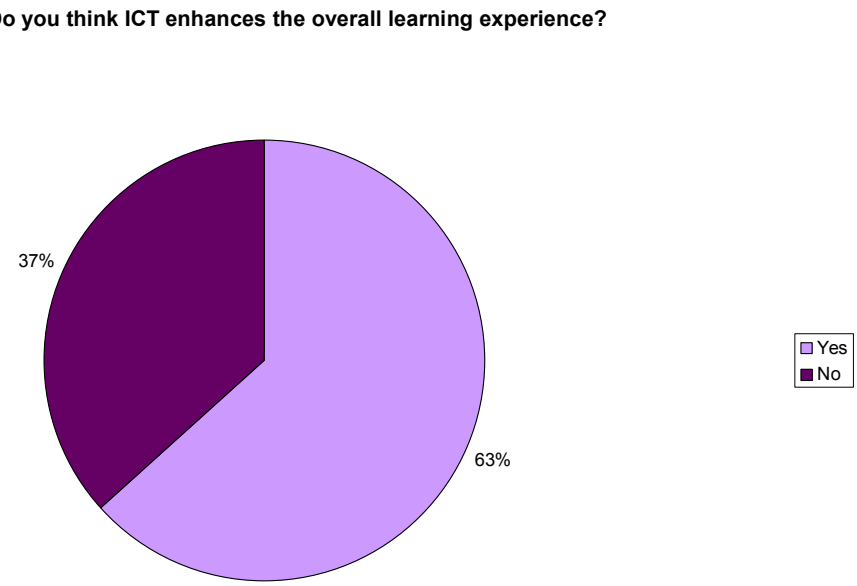
"*Today's modern technology*"

"*Would be a good change*"

"*It would be something different than writing all the time*"

Question 15

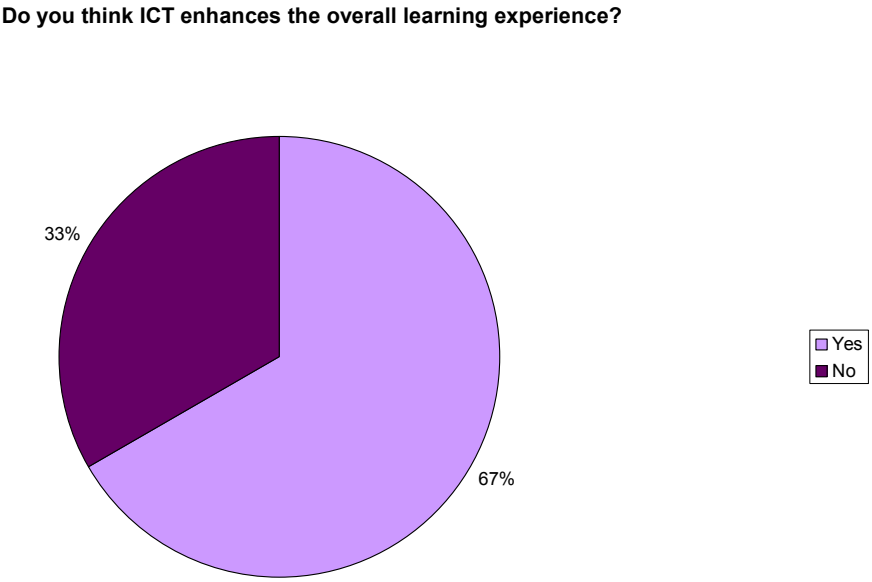
All learners were asked did they think ICT enhances the overall learning experience. Their responses were as follows:



Nineteen of the 30 learners stated that ICT enhances the overall learning experience whereas 11 did not. The specific breakdown by programme was as follows:

VTOS Learners

Of the 15 VTOS learners surveyed, 10 believed ICT enhances the overall learning experience whereas 5 did not.



The reasons given for those who agreed were as follows:

"*As a means of researching information it is beneficial*"

"*Visual and verbal impact*"

"*It gives you a wider variety of things to view and reduced written work*"

"*Makes class more enjoyable*"

"*Quick results, more accurate than manually doing things*"

"*It gives the experience a different edge*"

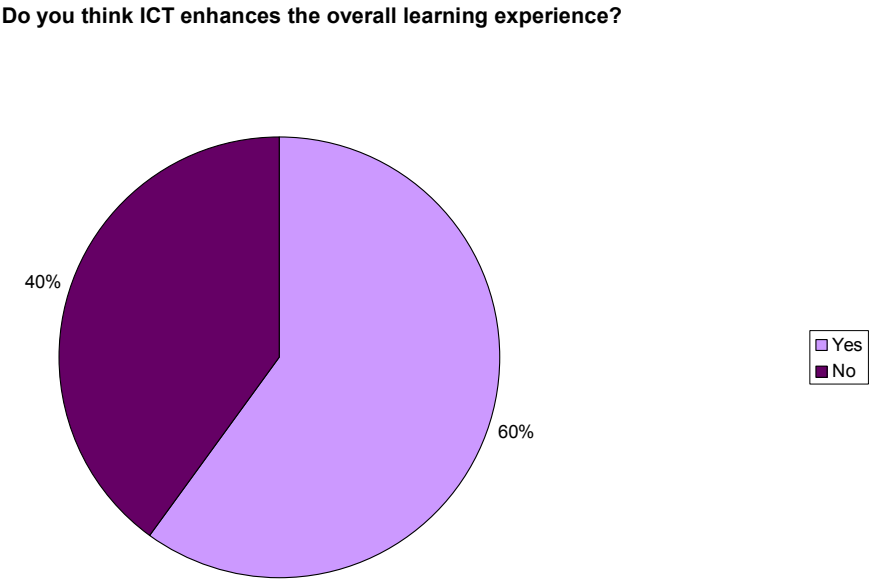
"*Keeps you more up to date with modern technology*"

"*Moves quicker from subject to subject i.e. a teacher has to use different books etc. for different subjects. Click on mouse changes subject quickly*"

"*It is something that is now being used in everyday life both in work and at the home*"

"*To prepare us better for work place situations*"

BTEI Learners



Of the 15 BTEI learners surveyed, 9 agreed that ICT enhances the overall learning experience whereas 6 disagreed. Of those who agreed, the reasons given were:

"*It widens your knowledge*"

"*It's easier to use than manual paperwork*"

"*It makes everything easy, especially e-mail*"

"*It's more exciting, also learning as well as learning how to use ICT*"

"*More interesting*"

"*Technology is required in nearly everything we do nowadays – so it helps us to learn better*"

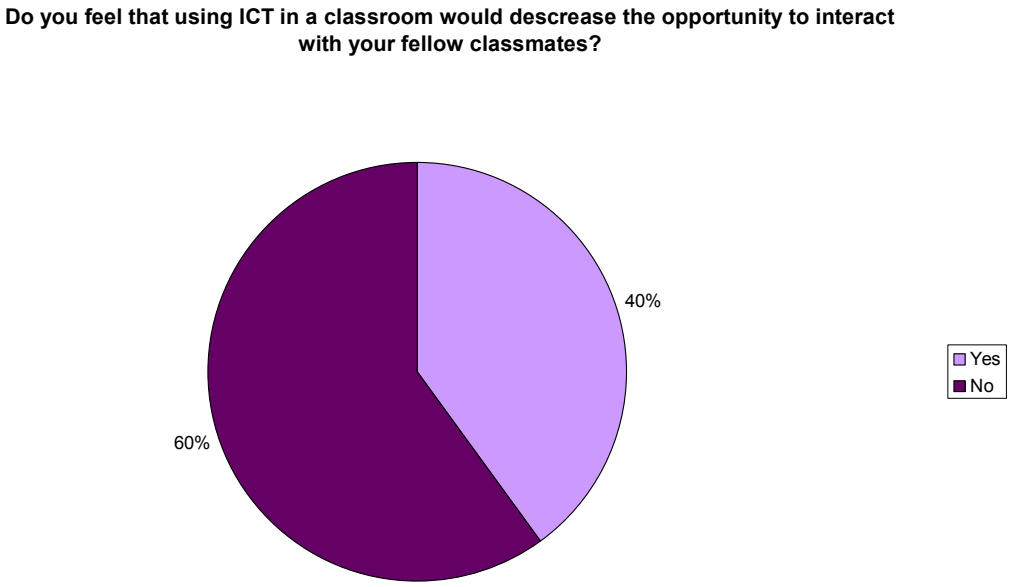
"*We can research more out of school hours*"

"*You can see information clearly*"

"*Something new*"

Question 16

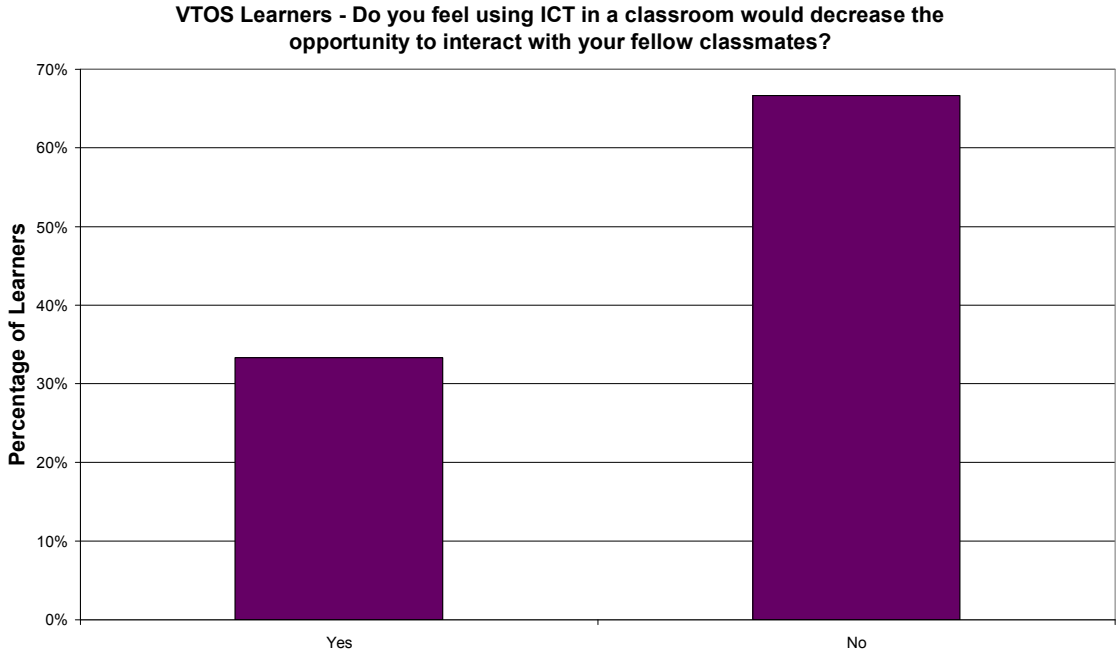
All learners were asked if they felt that using ICT in a classroom would decrease the opportunity for them to interact with classmates. Their responses were:



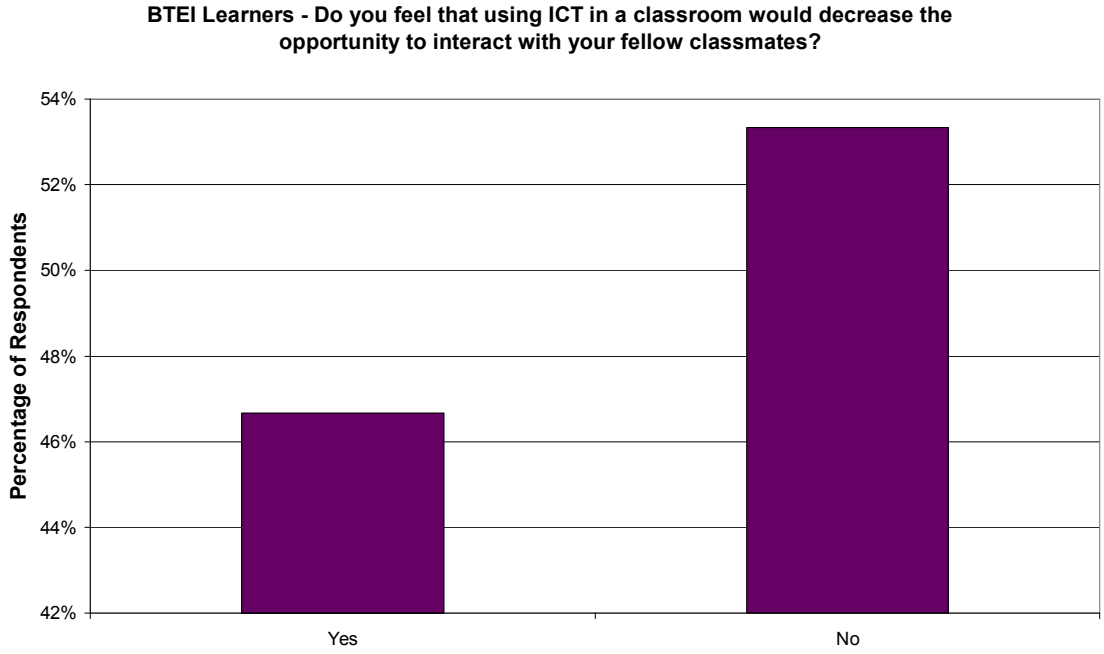
Out of the 30 learners surveyed, 12 learners felt using ICT would decrease interaction with classmates whereas 18 did not agree. The specific responses by programme were as follows:

VTOS Learners

Of the 15 VTOS learners surveyed, 5 felt that ICT decreases social interaction whereas 10 did not agree.



BTEI Learners



Of the 15 BTEI learners surveyed, 7 felt that ICT decreases social interaction whereas 8 did not agree.

Question 17

All learners were asked to rate their level of expertise or competence in a range of computer applications. Their responses were:

All Learners					
Computer Application	**Level of Competence (% of Respondents)**				
	Very Good	Good	Fair	Poor	None
Word Processing	37.5	33.5	23	3	3
Spreadsheets	13.5	33.5	23	23	7
Databases	13	30	23	17	17
PowerPoint	20	30	30	10	10
Internet	70	20	3	7	-
E-mail	50	30	13	3.5	3.5
Web Authoring	10	7	20	30	33
Digital Photography	16.5	30	27	10	16.5
Video Editing	3	20	17	17	43
Scanning images	10	33	20	7	30
Software Development	0	10	13	20	57

The specific breakdown by programme was as follows:

VTOS Learners

Computer Application	Level of Competence (% of Respondents)				
	Very Good	Good	Fair	Poor	None
Word Processing	40	40	7	6.5	6.5
Spreadsheets	20	40	13	20	7
Databases	20	27	27	13	13
PowerPoint	13	33	40	7	7
Internet	60	20	7	13	-
E-mail	33	33	20	7	7
Web Authoring	7	13	20	20	40
Digital Photography	13	40	20	13.5	13.5
Video Editing	6.5	6.5	27	20	40
Scanning images	7	33	20	13	27
Software Development	-	13	7	27	53

BTEI Learners

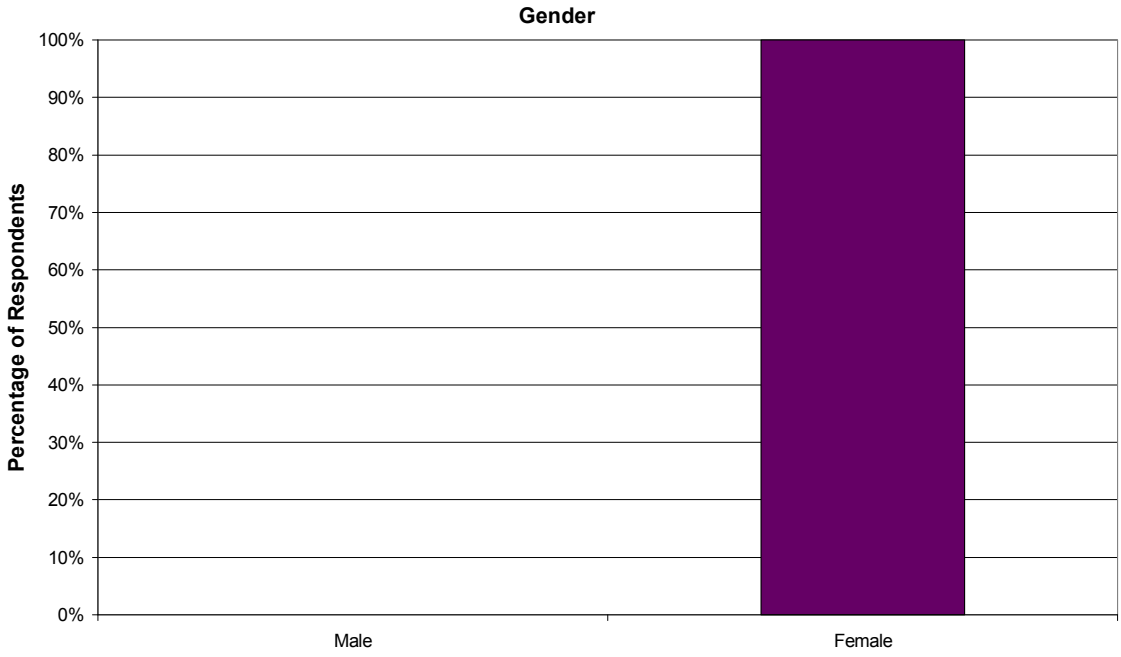
Computer Application	Level of Competence (% of Respondents)				
	Very Good	Good	Fair	Poor	None
Word Processing	33	27	40	-	-
Spreadsheets	6.5	27	33	27	6.5
Databases	7	33	20	20	20
PowerPoint	27	27	20	13	13
Internet	80	20	-	-	-
E-mail	67	26.5	6.5	-	-
Web Authoring	13	-	20	40	27
Digital Photography	20	20	33	7	20
Video Editing	-	33	7	13	47
Scanning images	13	33.5	20	-	33.5
Software Development	-	7	20	13	60

Appendix G
Teacher Questionnaire Results

The results of the teacher questionnaires are outlined below. The results of all teachers surveyed will be presented, then a graphical representation of teachers who work exclusively in the VTOS programme followed by those who work exclusively in the BTEI programme.

Question 1

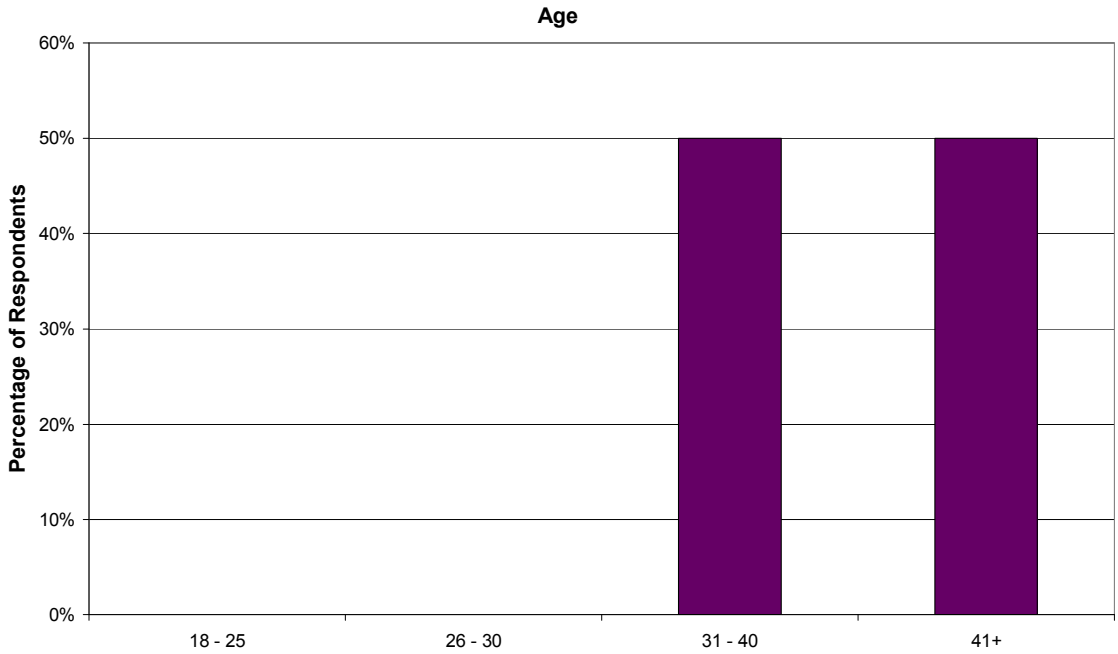
Gender of all teachers surveyed;



All teachers surveyed were female as there are no male teachers in the AETC.

Question 2

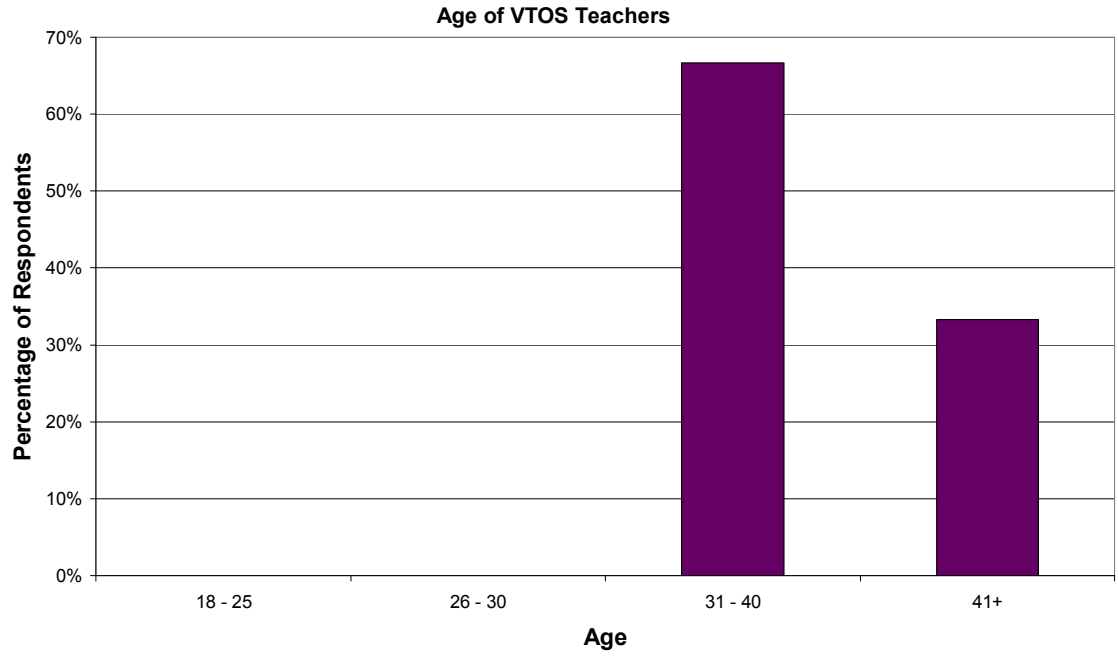
Age range of all teachers:



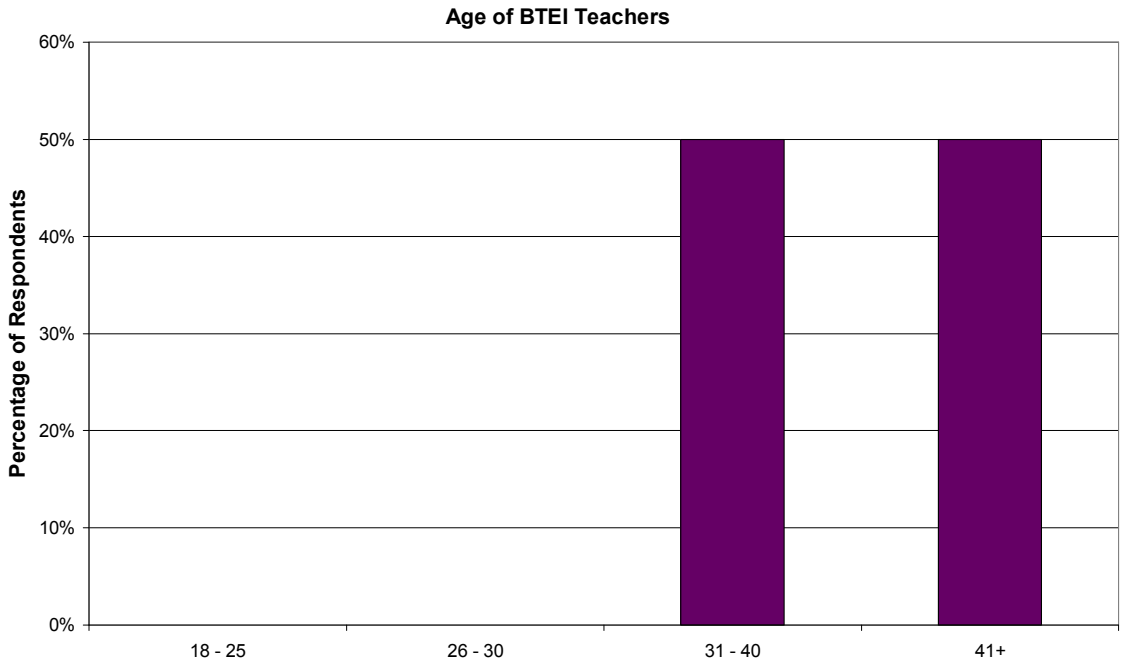
Of the 8 teachers employed in the Adult Education and Training Centre, 4 were aged 31 – 40 and 4 were aged 41 and over. The age breakdown by programme was as follows:

Teachers exclusive to VTOS

Of the 3 teachers who teach exclusively in the VTOS programme, 2 were aged 31 – 40 and one teacher was 41 or over.



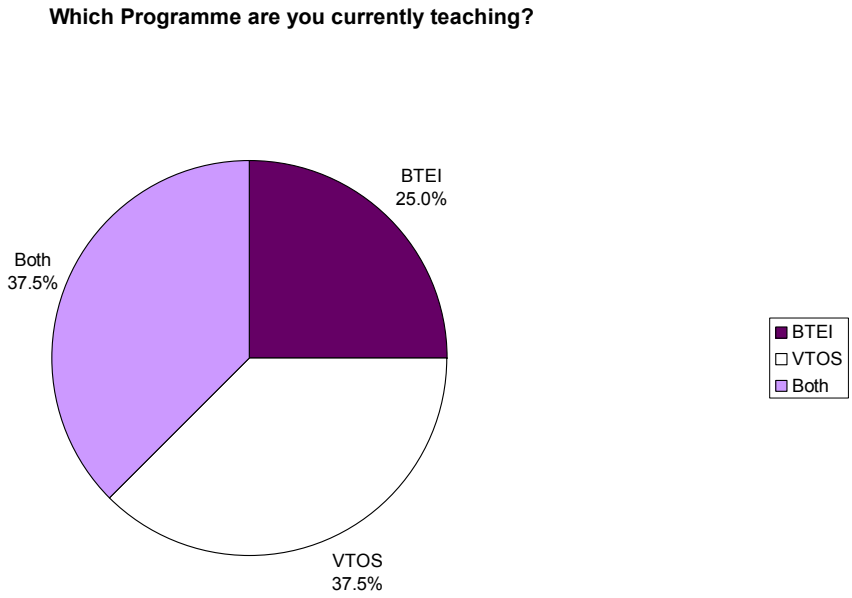
Teachers exclusive to BTEI



Of the 2 teachers who teach exclusively in the BTEI programme, one was aged 31 – 40 and the other was 41 or over.

Question 3

All teachers surveyed were asked what programme they teach within. Their responses were as follows:



Two teachers taught exclusively in the BTEI programme, 3 teachers taught exclusively in the VTOS programme and the remaining 3 teachers taught across both programmes.

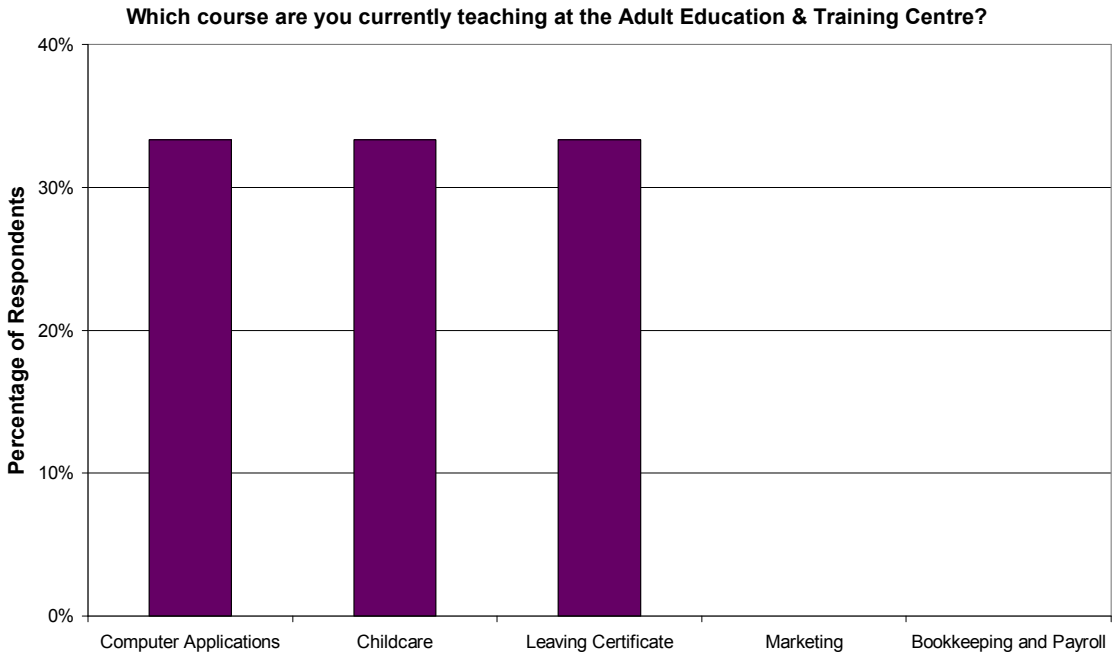
Question 4

All teachers were asked which course they teach in the AETC. The results were as follows:

Of the 8 teachers surveyed, 2 taught Computer Applications, one taught Childcare, 4 taught Leaving Certificate, one taught Marketing and one taught Bookkeeping and Payroll. The course breakdown by programme was as follows:

Teachers exclusive to VTOS

Of the 3 teachers who taught exclusively in VTOS, 1 taught Childcare, 1 taught Computer Applications and 1 taught the Leaving Certificate.

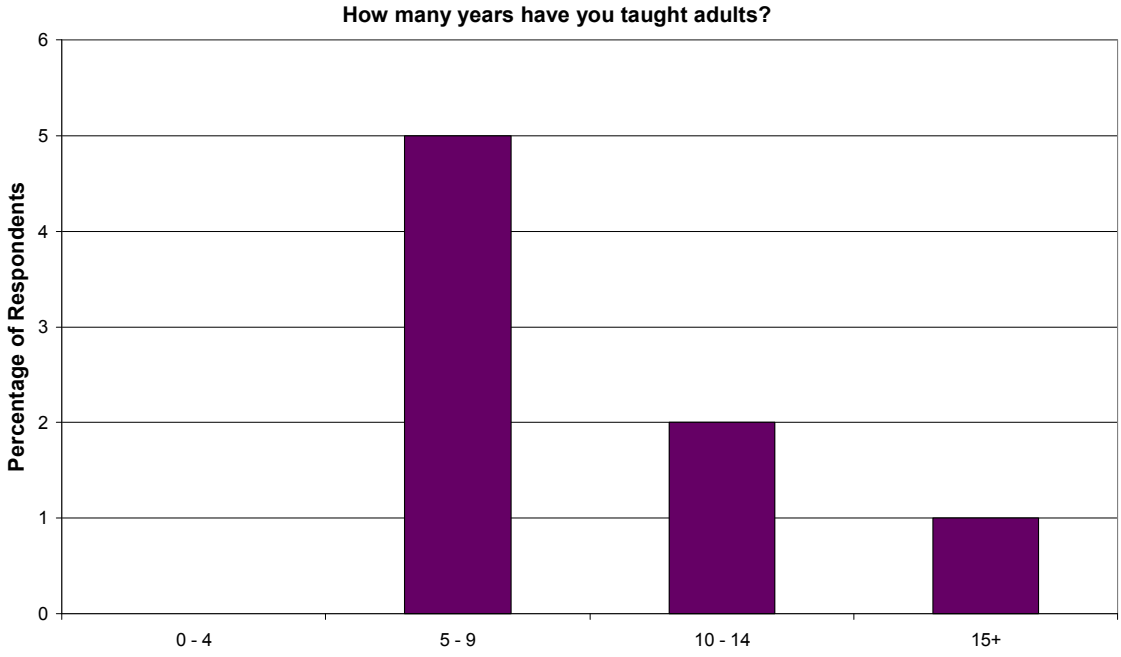


Teachers exclusive to BTEI

Of the 2 teachers who taught exclusively in BTEI, they both delivered the Leaving Certificate programme.

Question 5

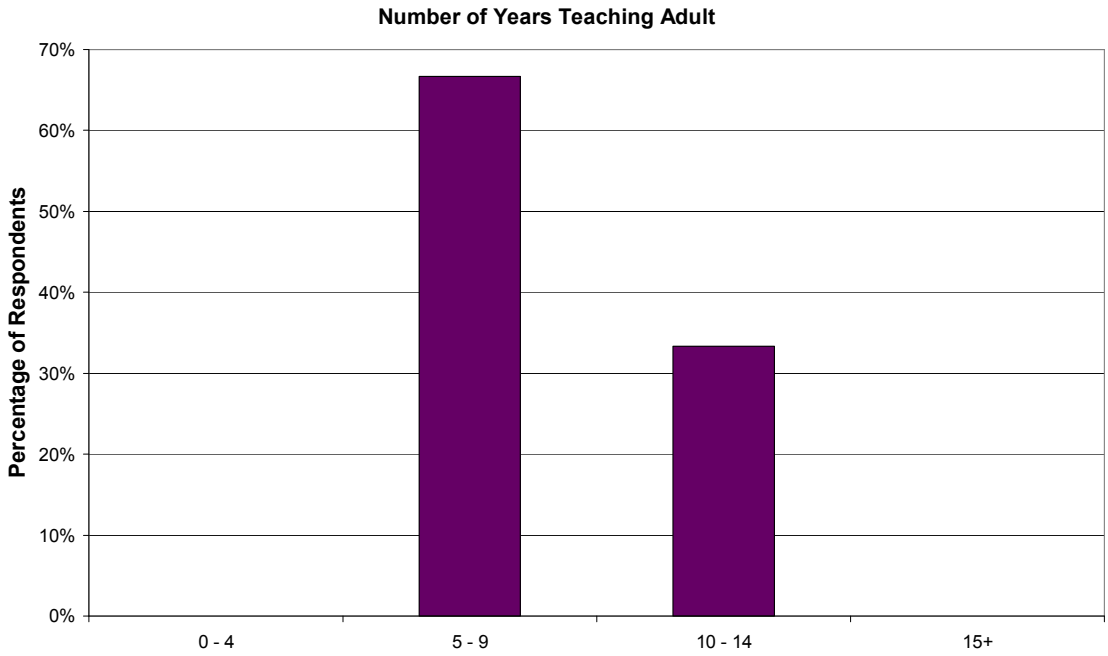
All teachers were asked how long they have been delivering courses to adults. Their responses were:



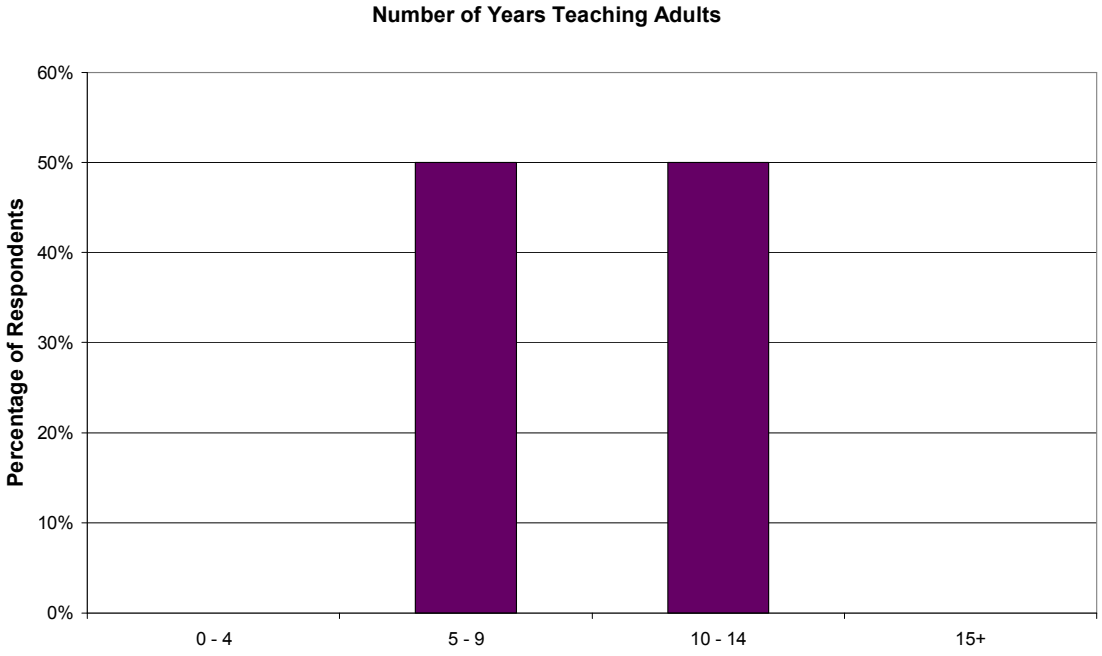
Five teachers have taught adults for 5 – 9 years, 2 have taught adults for 10 – 14 years and one teacher has delivered courses to adults in excess of 15 years. The specific breakdown by programme was as follows:

Teachers exclusive to VTOS

Of the 3 VTOS exclusive teachers, 2 have taught adults for 5 – 9 years and one teacher has taught adults for 10 – 14 years.



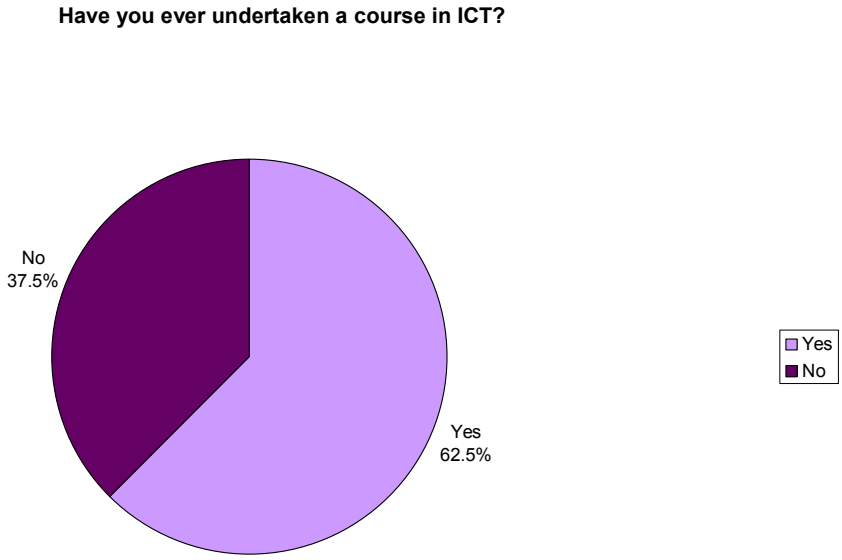
Teachers exclusive to BTEI



Of the 3 BTEI exclusive teachers, one had delivered courses to adults for 5 – 9 years and one has delivered courses for 10 – 14 years.

Question 6

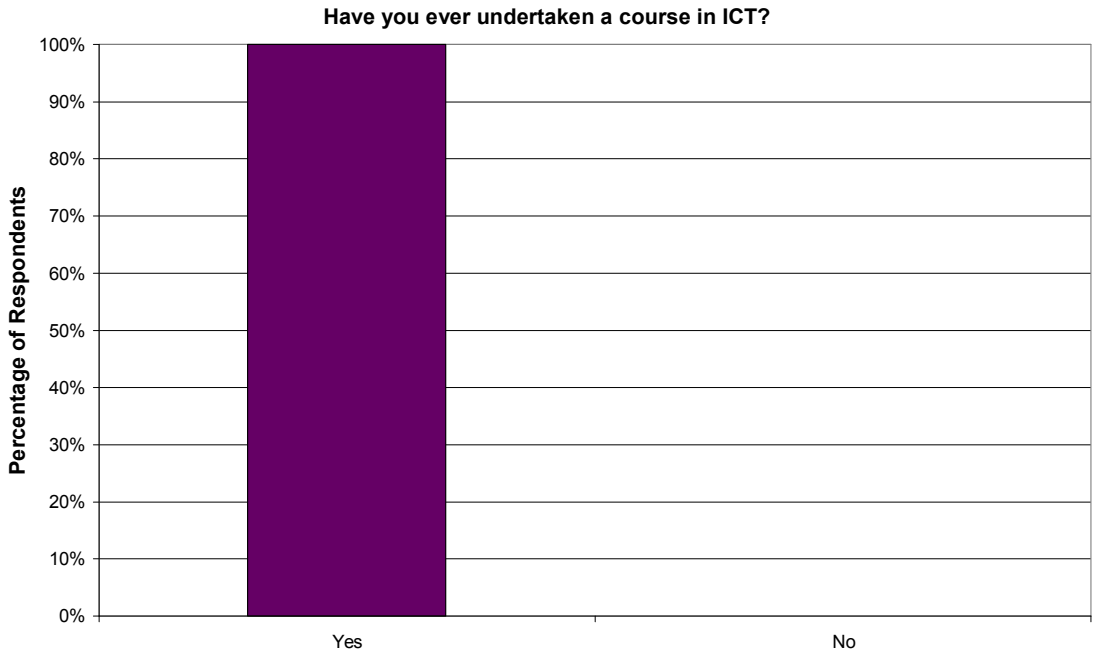
All teachers were asked had they ever undertaken a course in ICT.



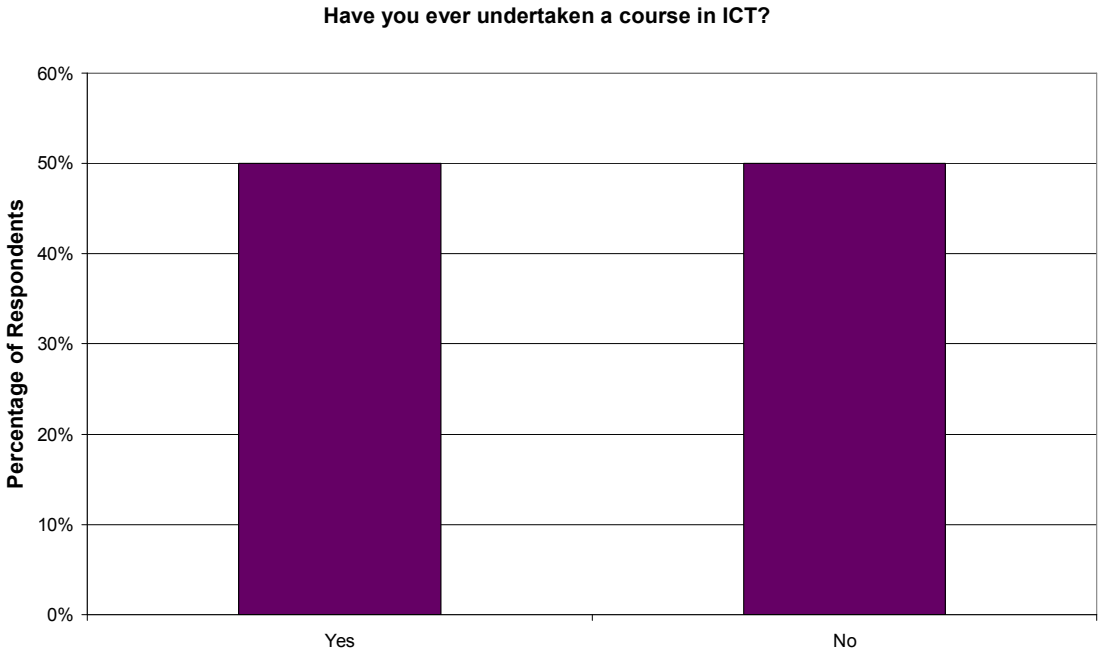
Five teachers in the AETC had undertaken courses in ICT. The specific breakdown by programme was as follows:

Teachers exclusive to VTOS

All VTOS teachers had undertaken ICT courses including a Postgraduate Diploma in Digital Media Development for Education and Masters in Computing.



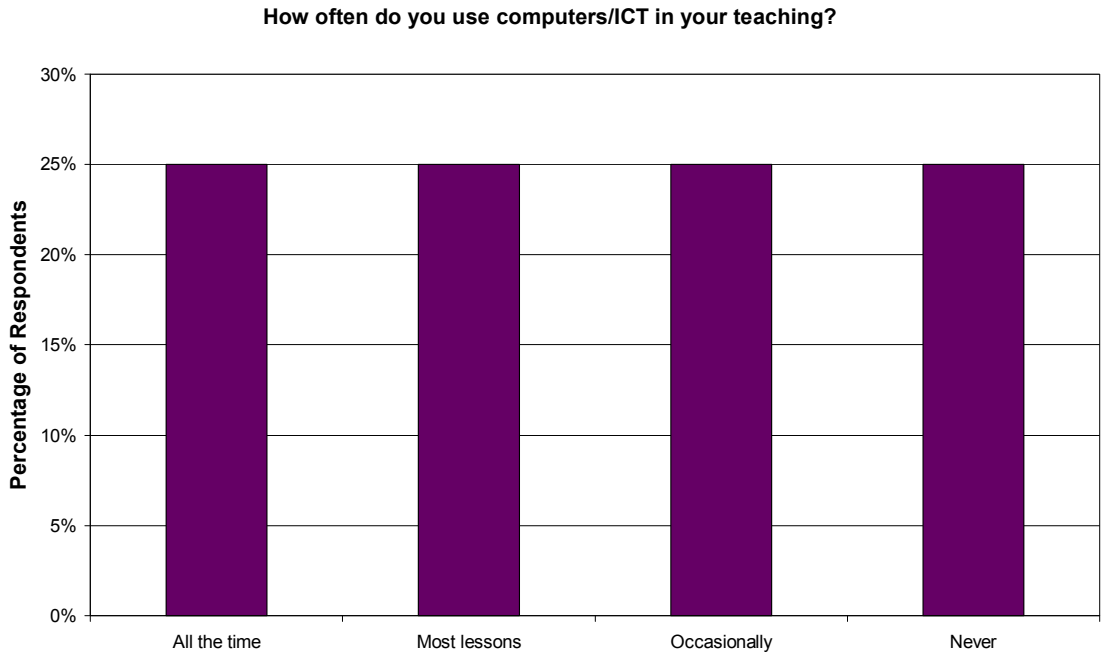
Teachers exclusive to BTEI



One BTEI exclusive teachers had undertaken a course in ICT; a Postgraduate Diploma in Computer Modelling and Simulation.

Question 7

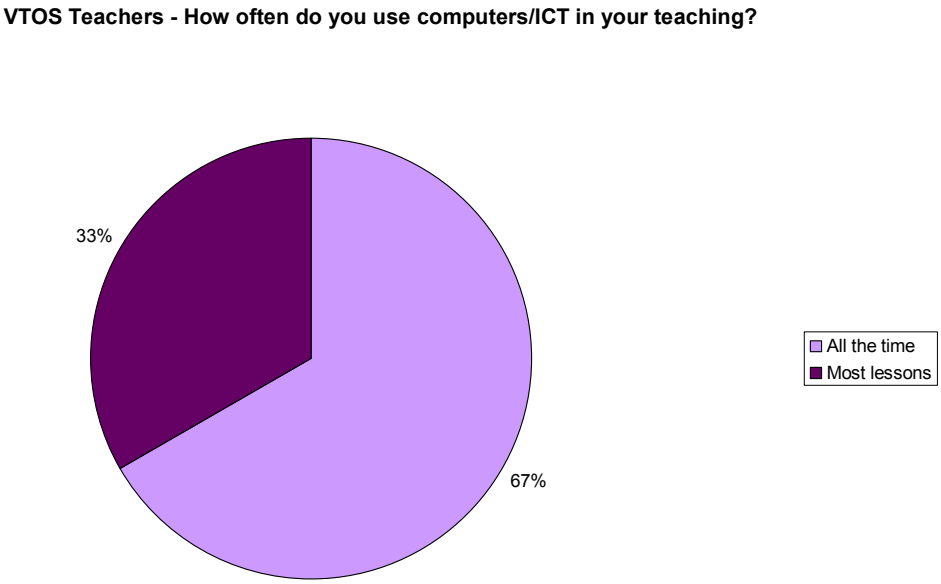
All teachers were asked how often they used ICT/computers in their teaching. Their responses were as follows:



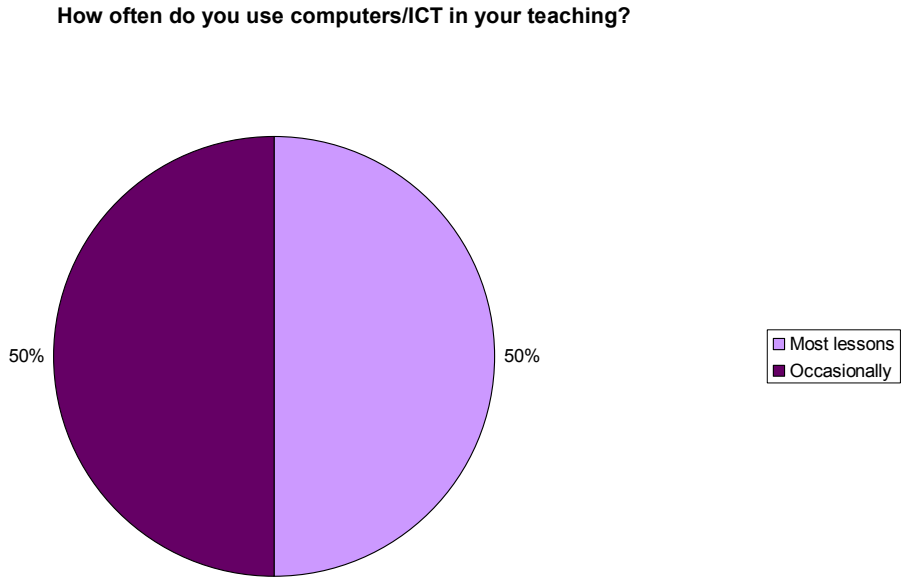
Two teachers surveyed used computers/ICT all the time in their teaching, 2 teachers used computers/ICT in most lessons, 2 teachers used computers/ICT occasionally and 2 never used computers/ICT while teaching. The specific breakdown by programme was as follows:

Teachers exclusive to VTOS

Of the 3 VTOS exclusive teachers surveyed, 2 used computers/ICT all the time in their teaching and the remaining teacher used computers/ICT in most lessons.



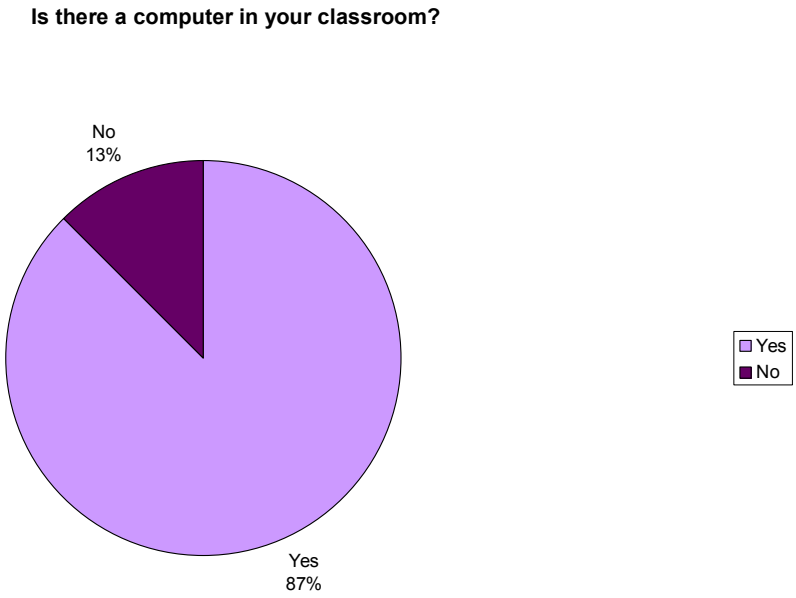
Teachers exclusive to BTEI



Of the 2 BTEI exclusive teachers, one used computers/ICT in most lessons and one used computers/ICT occasionally in their teaching.

Question 8

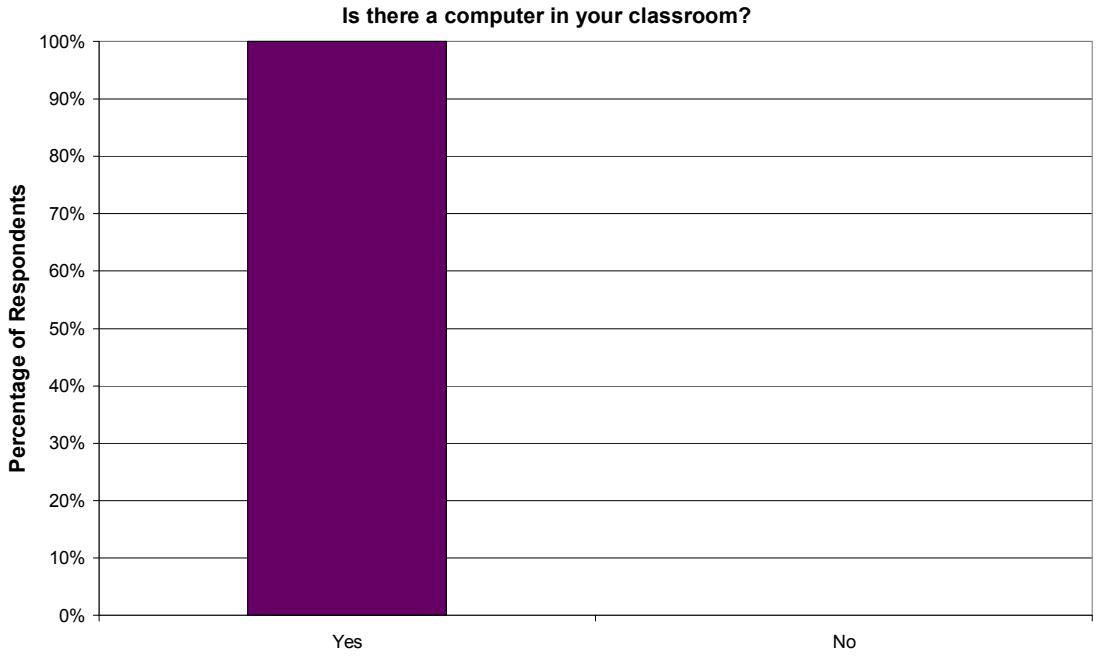
All teachers were asked if there was a computer in their classroom. There responses were as follows:



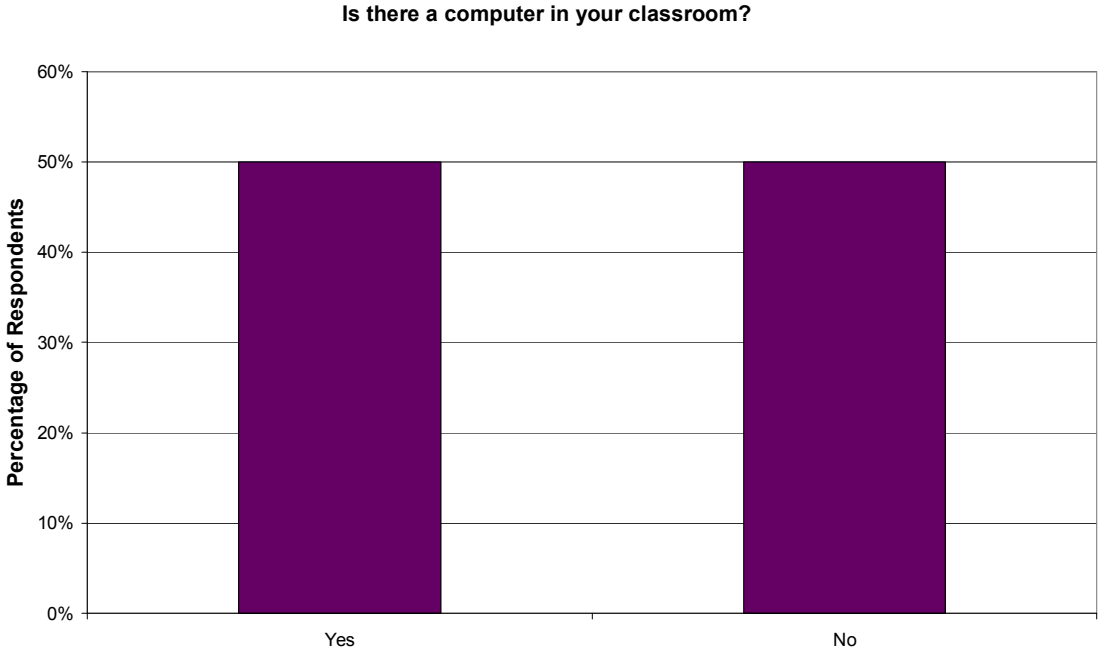
Seven of the 8 teachers surveyed had a computer in their classroom. The breakdown by programme was as follows:

Teachers exclusive to VTOS

All VTOS exclusive teachers had a computer in their classrooms.

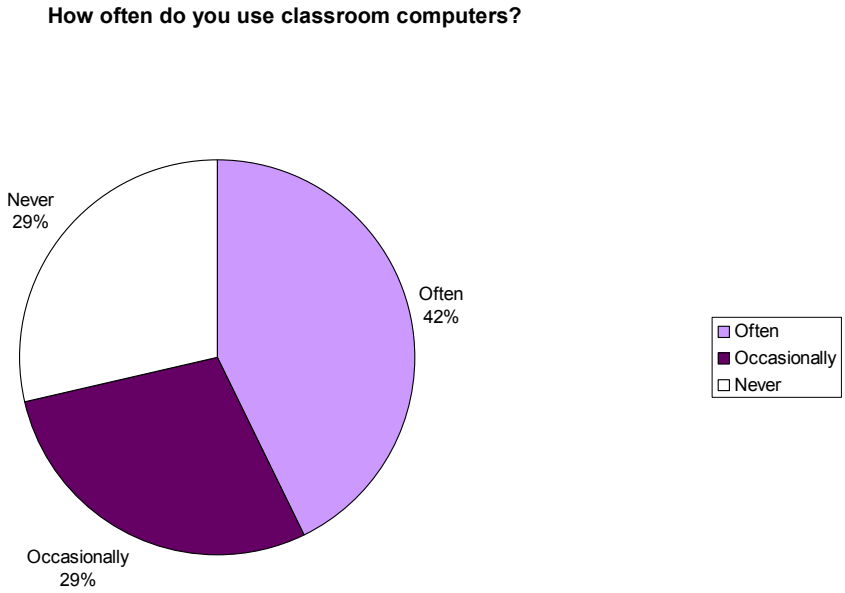


Teachers exclusive to BTEI



One BTEI exclusive teacher had a computer in their class whereas the other BTEI teacher did not.

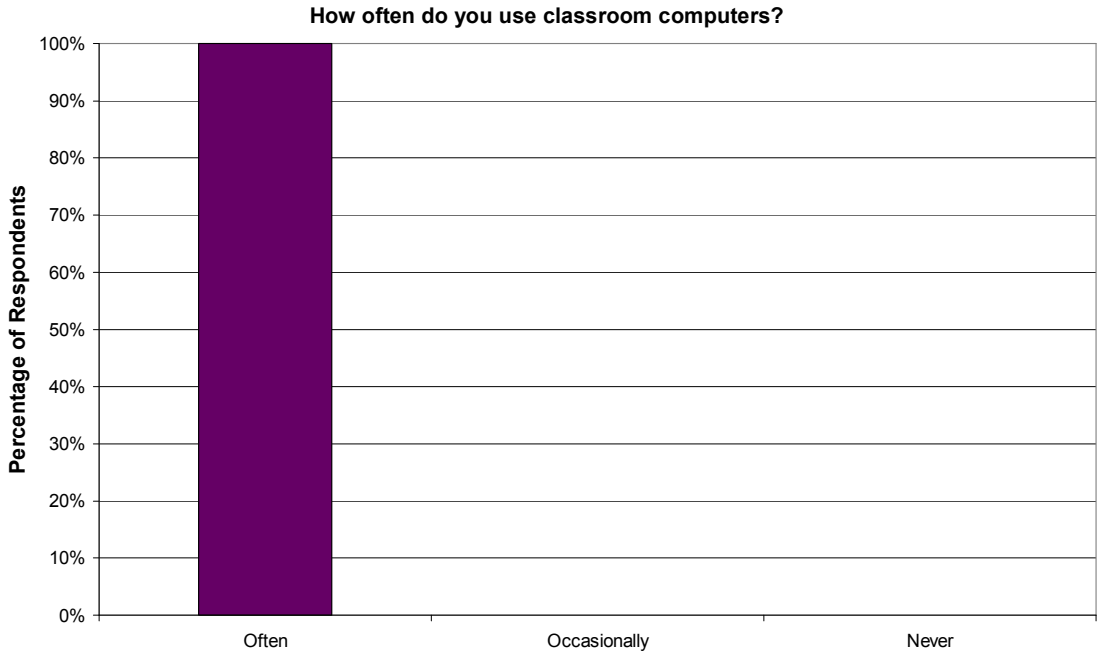
All teachers who had a computer in their classroom were then asked how often they used them. Their answers were as follows:



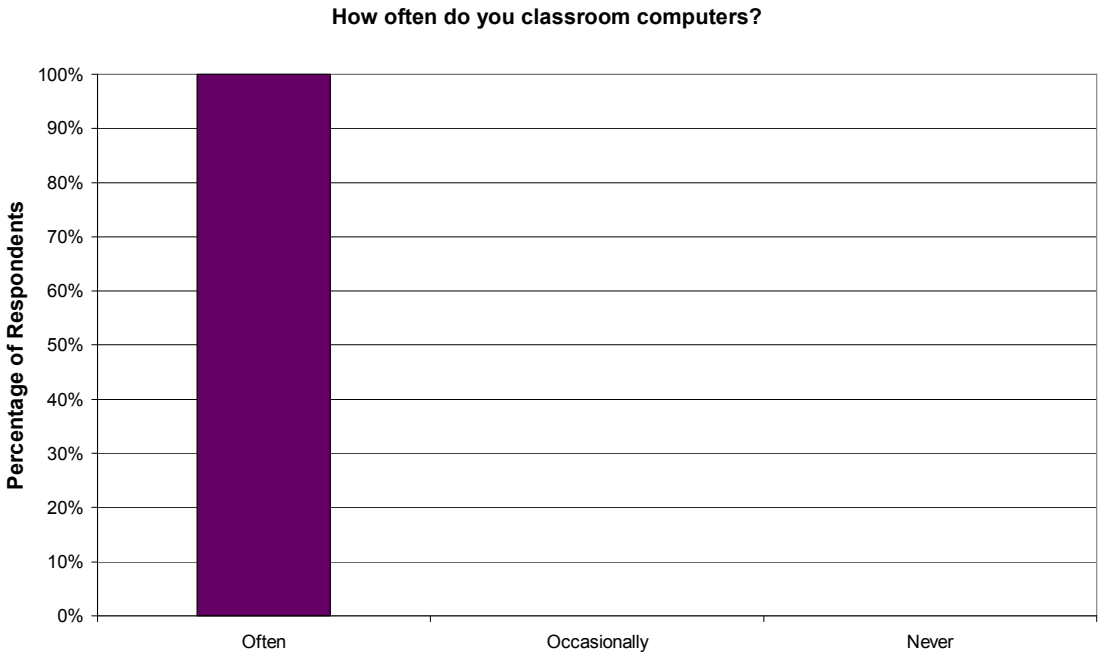
Of the 7 teachers who had a computer in their classroom, 3 used them often, 2 used them occasionally and 2 teachers never used them. The specific breakdown by programme was as follows:

Teachers exclusive to VTOS

All VTOS exclusive teachers used their classroom computers often for "*Images, notes, topical events, maps*", "*Delivery of lessons, skills demonstrations, planning and preparation*" and "*delivery of all lessons*".



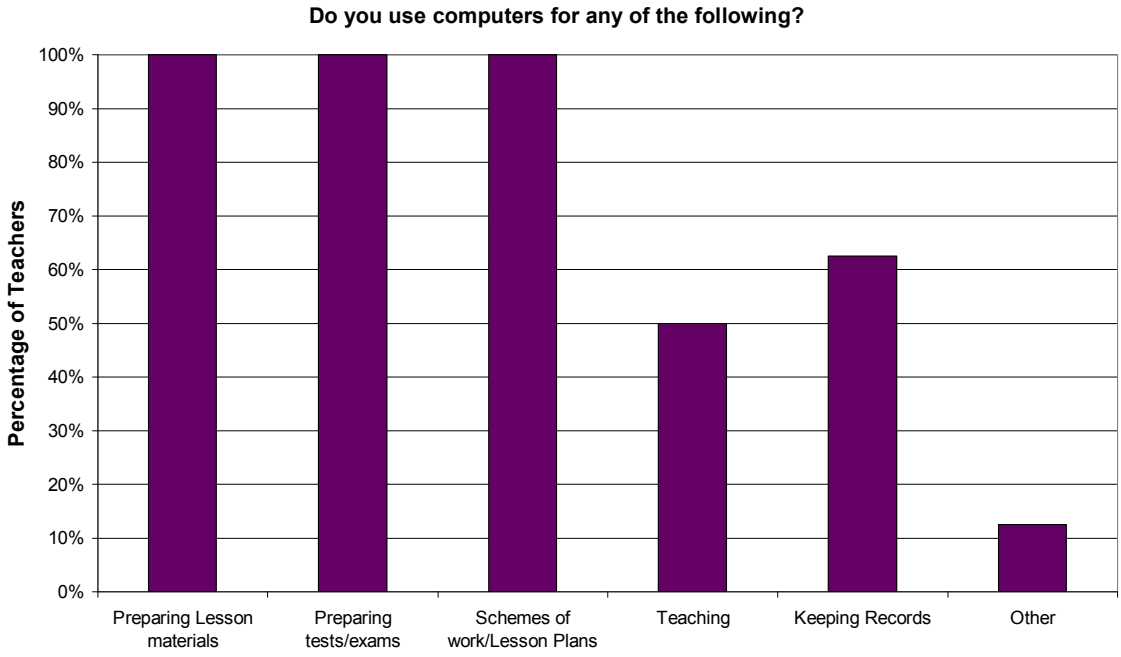
Teachers exclusive to BTEI



The one BTEI exclusive teacher who had a classroom computer used this computer often for "*PowerPoint use and Internet use*".

Question 9

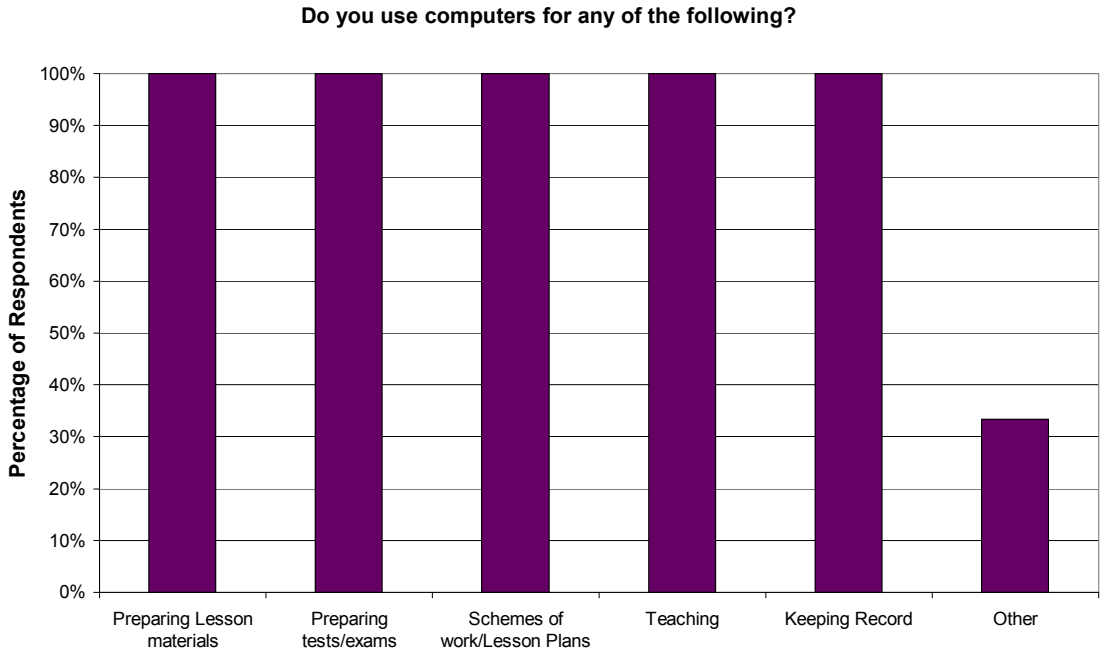
All teachers were asked did they use computers for preparing lesson materials, teaching, preparing tests/exams, schemes of work/lesson plans, keeping records or for any other reason. Their responses were:



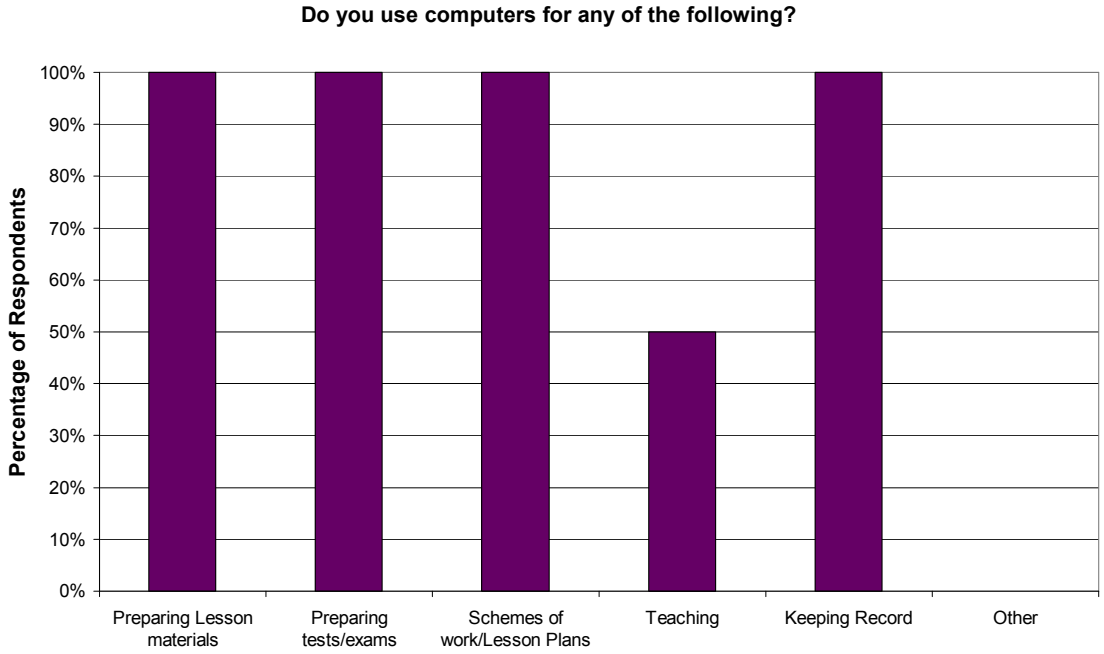
All teachers used computers for preparing lesson materials, preparing tests/exams, schemes of work and/or lesson plans. Four teachers used computers for teaching and 5 used them for keeping records. The detailed breakdown by programme was as follows:

Teachers exclusive to VTOS

All VTOS exclusive teachers used computers for preparing lesson materials, teaching, preparing tests/exams, schemes of work/lesson plans, keeping records and in their teaching.



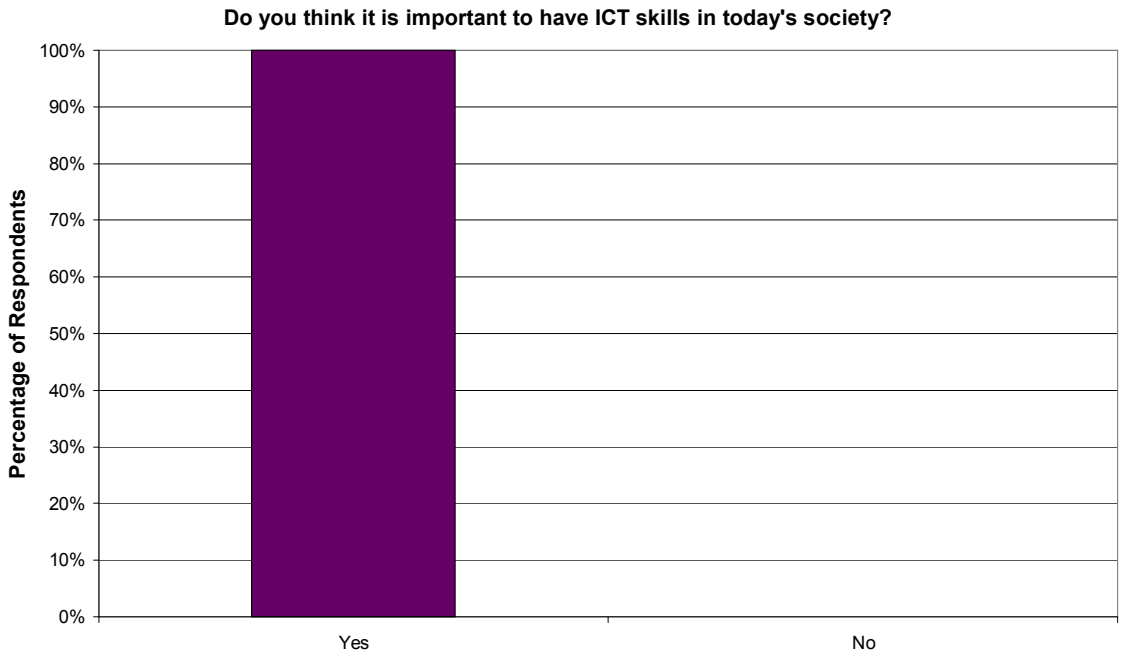
Teachers exclusive to BTEI



All BTEI exclusive teachers used computers for preparing lesson materials, preparing tests/exams, preparing schemes of work/lesson plans and keeping records. However, only one BTEI exclusive teacher used computers for teaching.

Question 10

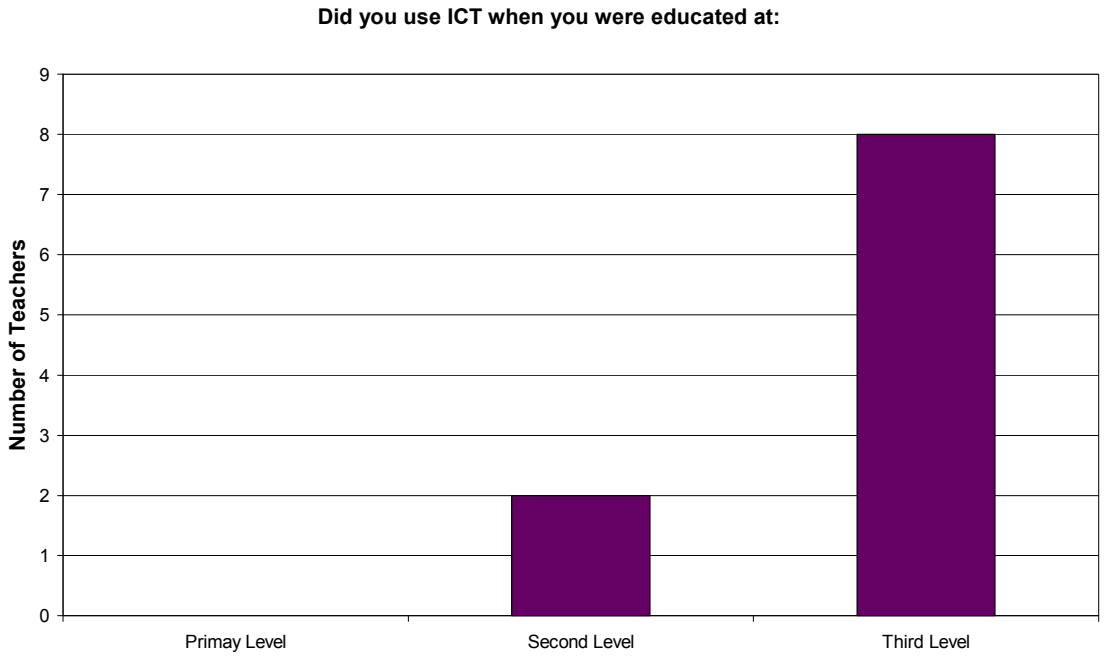
All teachers were asked did they feel it is important to have ICT skills in today's society. Their responses were as follows:



All teachers surveyed felt it is important to have ICT skills in today's society.

Question 11

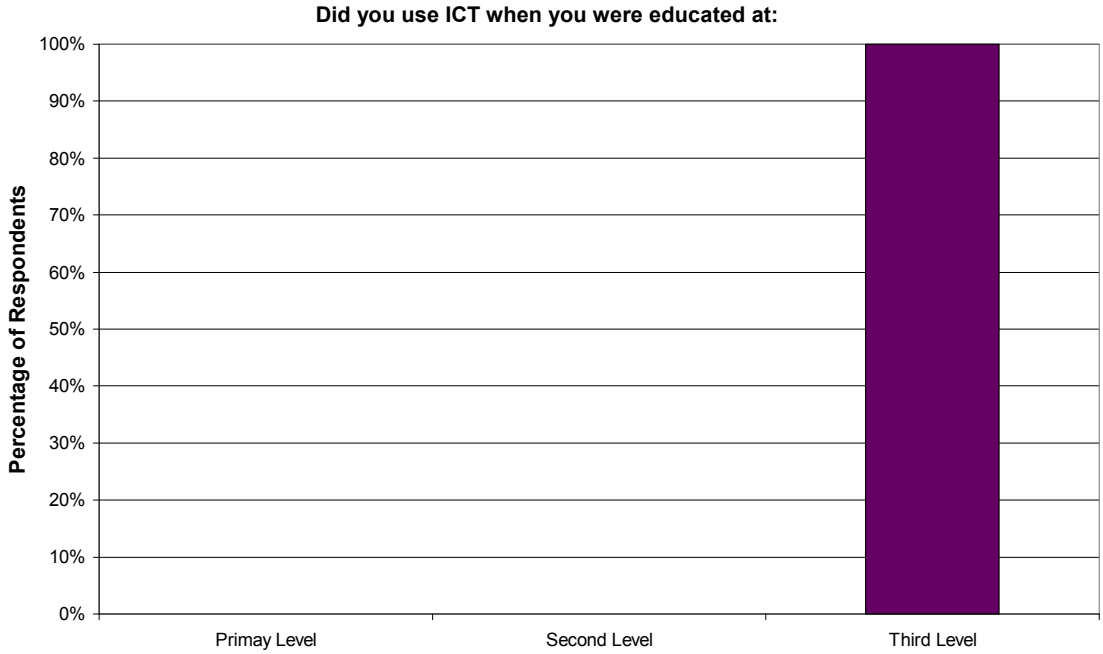
Teachers were asked was ICT used when they were educated at primary level, second level or third level.



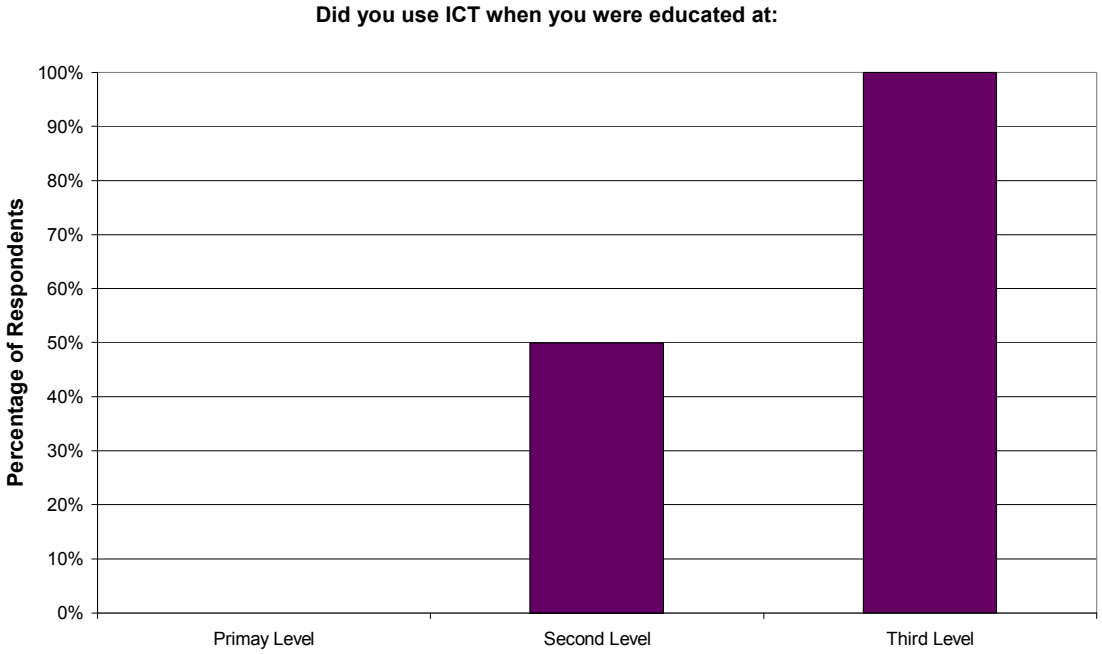
All teachers had experience of ICT at third level and 2 also had ICT experience at second level. The specific breakdown by programme was as follows:

Teachers exclusive to VTOS

Although all VTOS exclusive teachers had ICT experience at third level, none of them had ICT experience at second level.



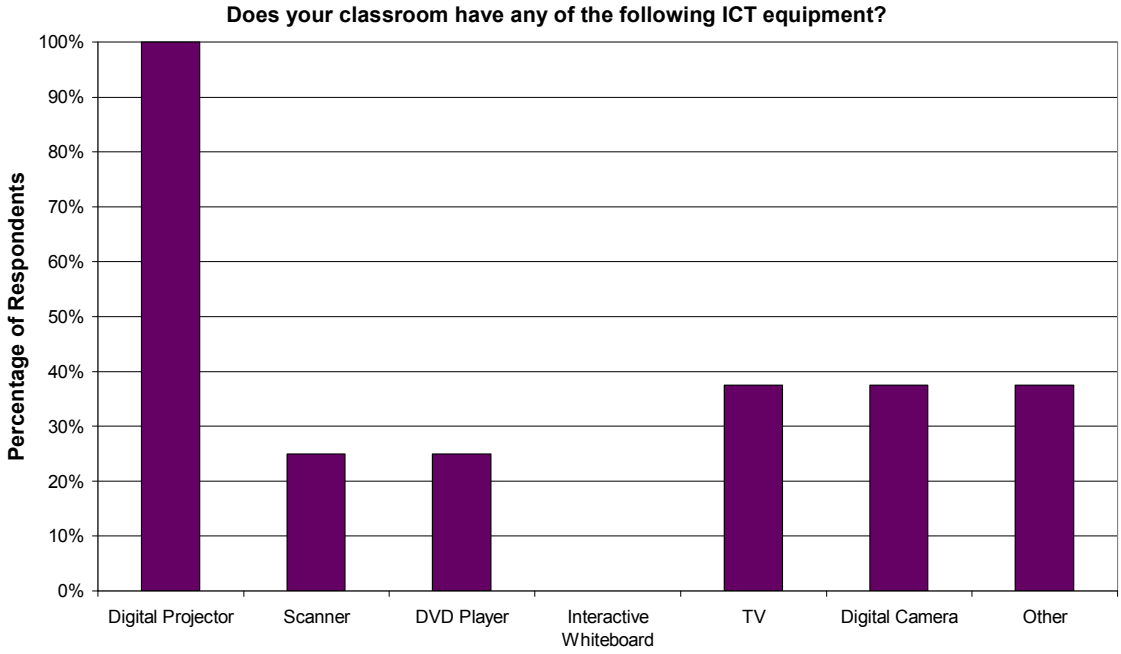
Teachers exclusive to BTEI



Although all BTEI exclusive teachers had previous educational experience of ICT at third level, one also had experience at second level.

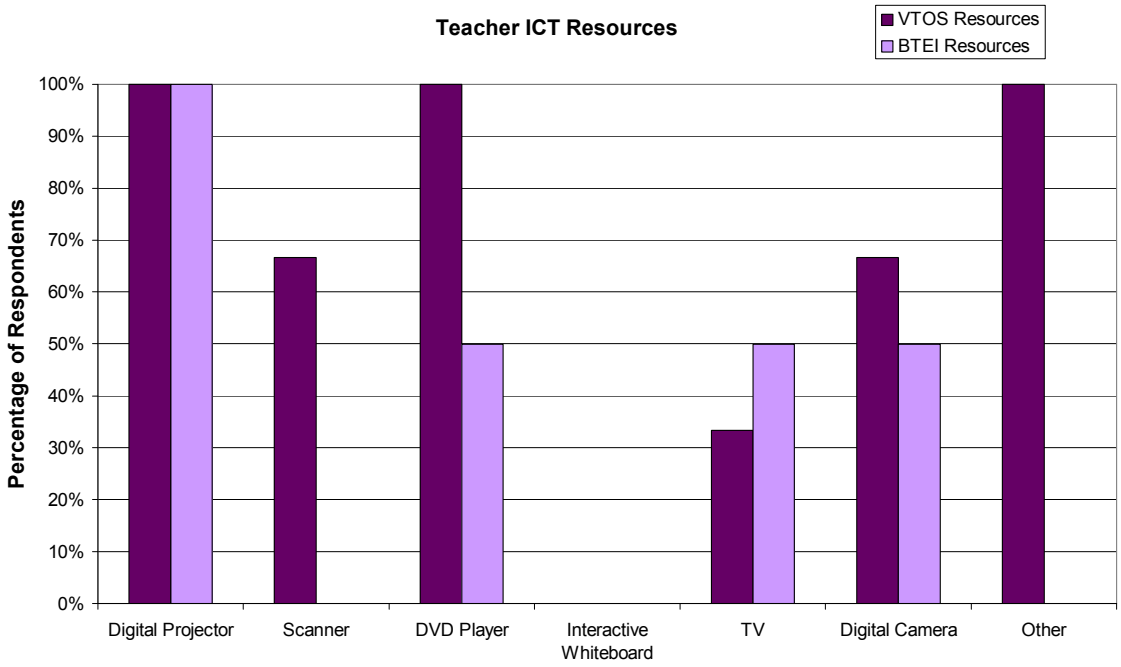
Question 12

All teachers were asked what ICT equipment they had in their classrooms. Their responses were as follows:



All teachers had a digital projector, 2 had a scanner and a DVD player, 3 had a TV, 3 had a digital camera and 3 had other ICT equipment. The comparison of ICT resources between programmes was as follows:

Teachers exclusive to VTOS and BTEI



All VTOS exclusive and BTEI exclusive teachers had a digital projector. Two VTOS exclusive teachers also had a scanner, 3 had a DVD player, one had a TV, 2 had digital cameras and 3 had other ICT equipment. However, only one BTEI exclusive teacher had a DVD player, a TV and a digital camera.

Question 13

All teachers were asked to indicate their response to a number of statements.

Their responses were as follows:

Statement	All Teachers % of Respondents				
	Strongly Agree	**Agree**	**Uncertain**	**Disagree**	**Strongly Disagree**
I would prefer to teach using ICT than human interaction	37.5	12.5	-	50	-
Using ICT would not scare me at all	37.5	12.5	-	25	25
I would like to use ICT in my teaching	50	50	-	-	-
I would prefer to use ICT as little as possible	-	25	-	50	25
I find ICT difficult to use	-	25	-	37.5	37.5
I would use ICT more if I knew more about it	25	37.5	-	12.5	25
Using ICT enables the learners to learn at their own pace	25	12.5	25	37.5	-
ICT technologies are changing too rapidly for me to keep up to date	12.5	25	-	62.5	-

The specific breakdown by programme was as follows:

Teachers exclusive to VTOS

Statement	VTOS Teachers % of Respondents				
	Strongly Agree	**Agree**	**Uncertain**	**Disagree**	**Strongly Disagree**
I would prefer to teach using ICT than human interaction	67	-	-	33	-
Using ICT would not scare me at all	67	33	-	-	-
I would like to use ICT in my teaching	100	-	-	-	-
I would prefer to use ICT as little as possible	-	-	-	33	67
I find ICT difficult to use	-	-	-	33	67
I would use ICT more if I knew more about it	67	33	-	-	-
Using ICT enables the learners to learn at their own pace	67	-	33	-	-
ICT technologies are changing too rapidly for me to keep up to date	-	-	-	100	-

Teachers exclusive to BTEI

Statement	BTEI Teachers % of Respondents				
	Strongly Agree	**Agree**	**Uncertain**	**Disagree**	**Strongly Disagree**
I would prefer to teach using ICT than human interaction	-	-	-	100	-
Using ICT would not scare me at all	-	-	-	50	50
I would like to use ICT in my teaching	-	100	-	-	-
I would prefer to use ICT as little as possible	-	50	-	50	-
I find ICT difficult to use	-	-	-	100	-
I would use ICT more if I knew more about it	-	50	-	50	-
Using ICT enables the learners to learn at their own pace	-	-	50	50	-
ICT technologies are changing too rapidly for me to keep up to date	50	50	-	-	-

Question 14

All teachers were asked to rate their level of expertise or competence in a number of computer applications. Their responses were as follows:

All Teachers					
Computer Application	**Level of Competence % of Respondents**				
	Very Good	Good	Fair	Poor	None
Word Processing	37.5	25	37.5	-	-
Spreadsheets	37.5	-	-	37.5	25
Databases	37.5	-	-	37.5	25
PowerPoint	37.5	-	12.5	25	25
Internet	62.5	12.5	12.5	12.5	-
E-mail	62.5	12.5	12.5	12.5	-
Web Authoring	25	12.5	-	-	62.5
Digital Photography	12.5	25	12.5	-	50
Video Editing	25	12.5	-	-	62.5
Scanning images	12.5	25	-	-	62.5
Software Development	25	12.5	12.5	-	50

The specific breakdown by programme was as follows:

Teachers exclusive to VTOS

VTOS Teachers					
Computer Application	**Level of Competence - % of Respondents**				
	Very Good	Good	Fair	Poor	None
Word Processing	67	33	-	-	-
Spreadsheets	67	-	-	33	-
Databases	67	-	-	33	-
PowerPoint	67	-	33	-	-
Internet	100	-	-	-	-
E-mail	100	-	-	-	-
Web Authoring	67	-	-	33	-
Digital Photography	-	-	67	33	-
Video Editing	-	67	-	-	33
Scanning images	33	33	-	-	33
Software Development	-	33	33	-	33

Teachers exclusive to BTEI

BTEI Teachers					
Computer Application	**Level of Competence - % of Respondents**				
	Very Good	Good	Fair	Poor	None
Word Processing	-	-	100	-	-
Spreadsheets	-	-	50	50	-
Databases	-	-	50	-	50
PowerPoint	-	50	-	50	-
Internet	-	100	-	-	-
E-mail	-	50	-	50	-
Web Authoring	-	-	-	100	-
Digital Photography	-	-	-	100	-
Video Editing	-	-	-	100	-
Scanning images	-	-	-	100	-
Software Development	-	-	-	100	-

Question 15

All teachers were asked which computer application they used often. Their responses were as follows:

All Teachers	
Which computer applications would you use most often?	
	Number of Respondents
Word Processing	8
Spreadsheets	3
Databases	3
PowerPoint	5
Internet	8
E-mail	8
Web Authoring Software	2
Digital Photography Editing Software	2
Video Editing Software	0
Windows Media Player	3
Paint	2
Other	0

The specific breakdown by programme was as follows:

Teachers exclusive to VTOS

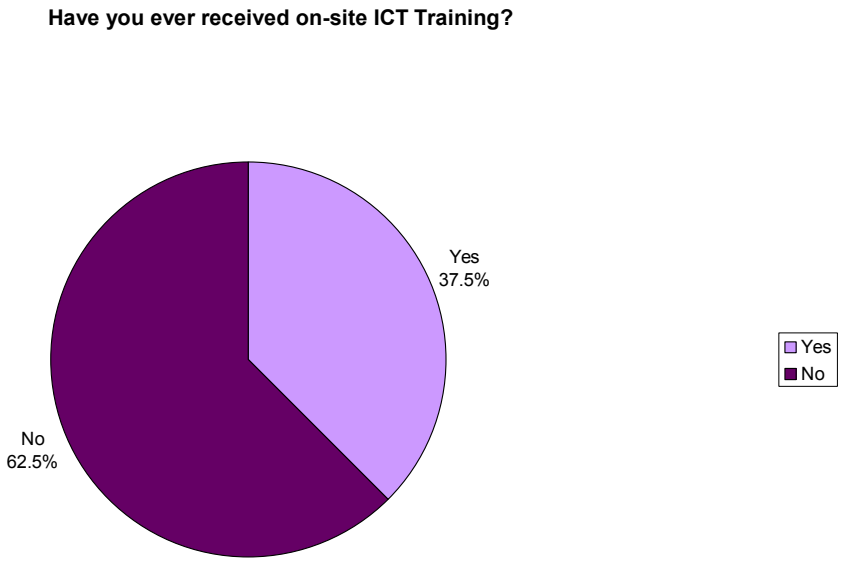
Which computer applications would you use most often?	
	Number of Respondents
Word Processing	3
Spreadsheets	2
Databases	2
PowerPoint	2
Internet	3
E-mail	3
Web Authoring Software	2
Digital Photography Editing Software	2
Video Editing Software	0
Windows Media Player	2
Paint	2
Other	0

Teachers exclusive to BTEI

Which computer applications would you use most often?	
	Number of Respondents
Word Processing	2
Spreadsheets	0
Databases	0
PowerPoint	1
Internet	2
E-mail	2
Web Authoring Software	0
Digital Photography Editing Software	0
Video Editing Software	0
Windows Media Player	0
Paint	0
Other	0

Question 16

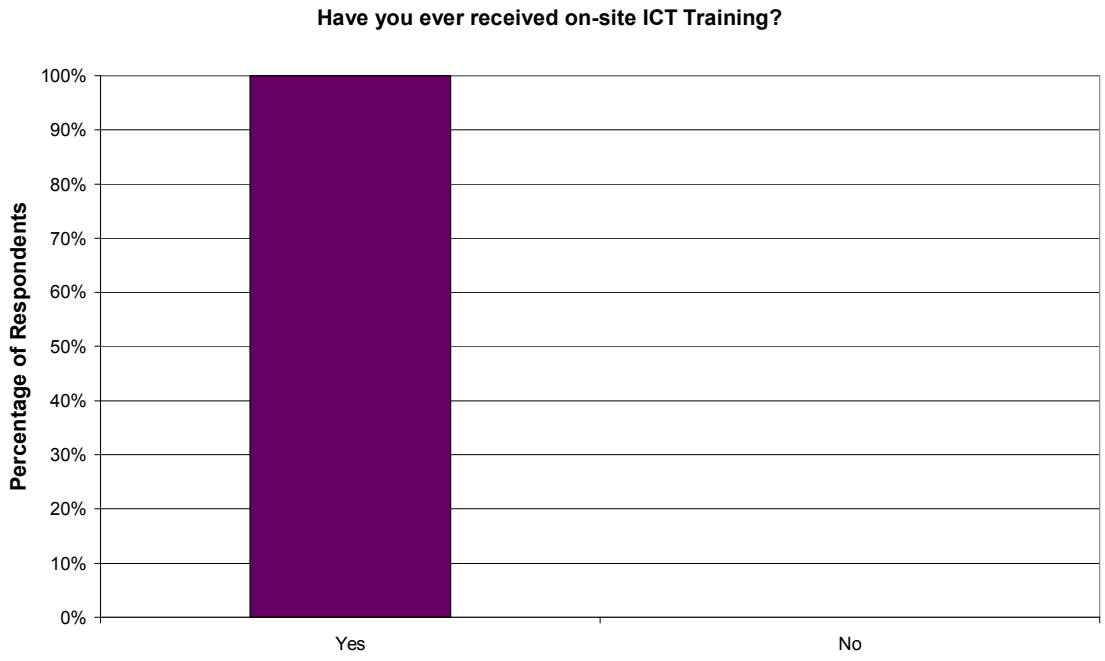
All teachers were asked had they ever received on-site ICT training. Their responses were:



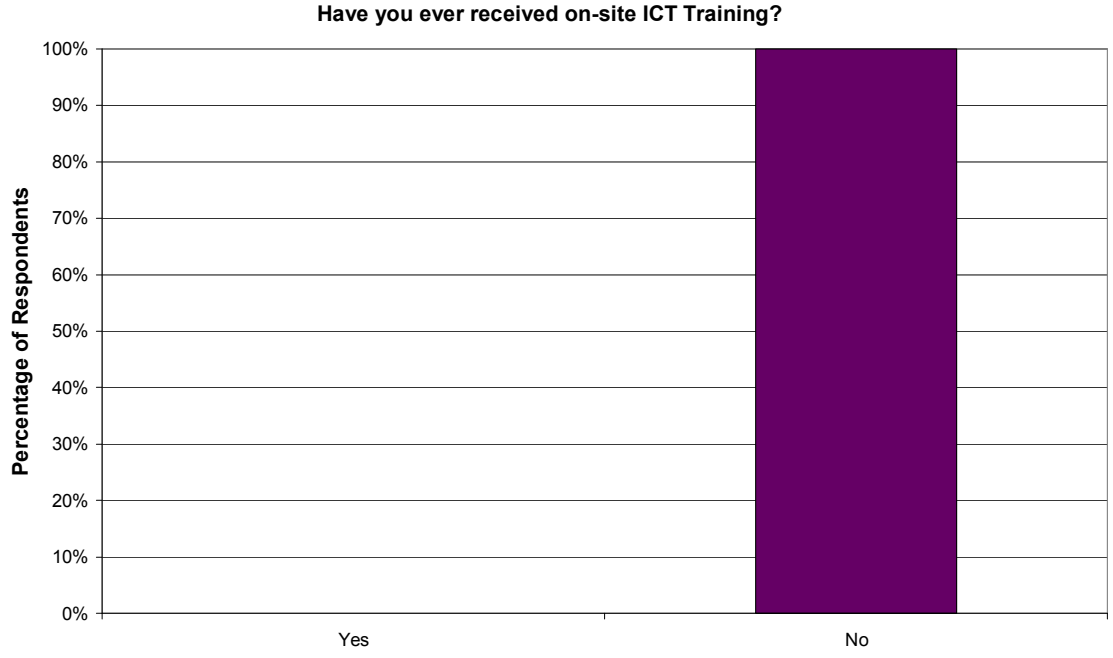
Three teachers had received on-site ICT training. The specific ICT training by programme was as follows:

Teachers exclusive to VTOS

All VTOS exclusive teachers had received on-site ICT training.



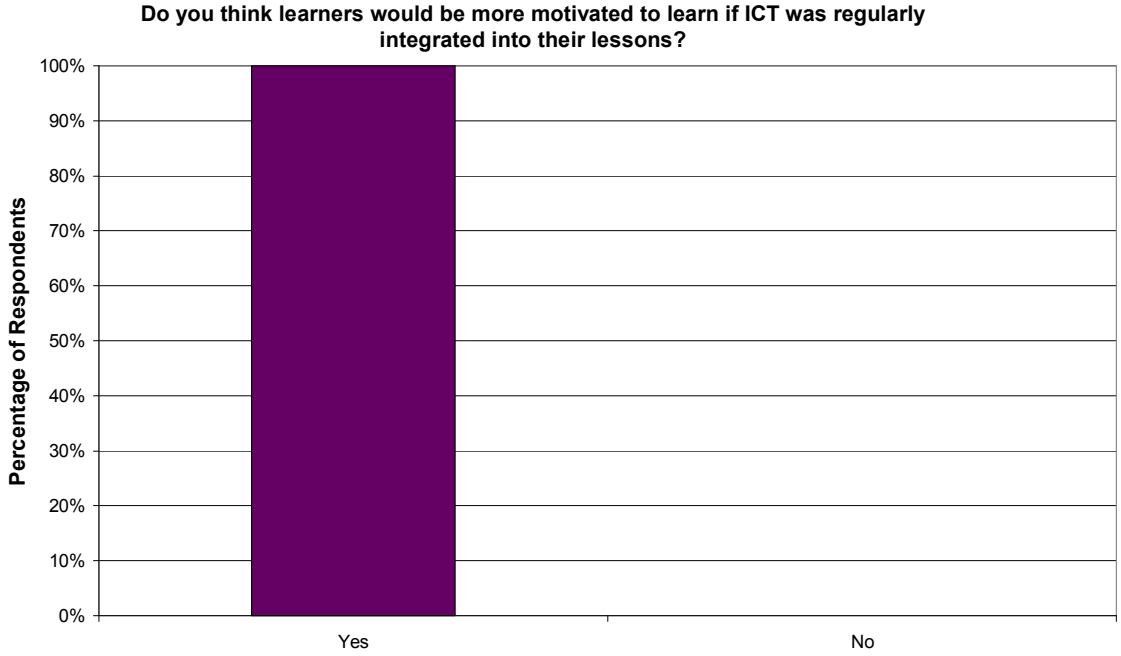
Teachers exclusive to BTEI



No BTEI exclusive teacher had ever received on-site ICT training.

Question 17

All teachers were asked did they think learners would be more motivated to learn if ICT was regularly integrated into their lessons. They answered as follows:



All teachers agreed that learners would be more motivated to learn if ICT was regularly integrated into their lessons. The reasons given were as follows:

"*Perhaps would enrich the lesson by making it more interactive, a change from the text book but the time it takes to prepare FETAC assignments, marking schemes and project briefs is substantial without having to keep up to date in the latest technologies. Videos help explain, are colourful and are a change but our learners prefer the teacher to direct the class, not technology*"

"*I know ICT can be motivating and if I had better ICT skills I would use it within the class*"

"*In some subject areas where visual learning is necessary, ICT can motivate learners and enhance visual learning*"

"*ICT opens up possibilities and has many advantages for work and home use. ICT allows exploratory learning and learners are motivated by this*"

"*Encourages independent thinking and learning*"

"*Would respond to variety of teaching methods*"

"*Could engage in more self-directed learning*"

"*Videos help explain, are colourful and are a change*"

Question 18

All teachers were asked to agree or disagree with a range of statements. Their responses were as follows:

All Teachers		
	Agree	**Disagree**
Statement	**% of Respondents**	
I have enough time to prepare ICT lessons	37.5	62.5
I have sufficient ICT resources in my classroom	50	50
There are adequate ICT resources in the Centre	87.5	12.5
I am adequately trained to use ICT	62.5	37.5
There is sufficient ICT support if anything goes wrong	62.5	37.5
I am confident using ICT	62.5	37.5
I have the expertise to use ICT in my teaching	62.5	37.5
I am scared of ICT	50	50
I find it difficult to access a computer room	37.5	62.5
I receive enough encouragement from the co-ordinator	75	25
Adult Learners wish to use ICT to learn	75	25
Adult Learners prefer a teacher-centred approach to learning	50	50
ICT could add to an adult learner's fear of returning to education	62.5	37.5

The specific responses by programme were as follows:

Teachers exclusive to VTOS

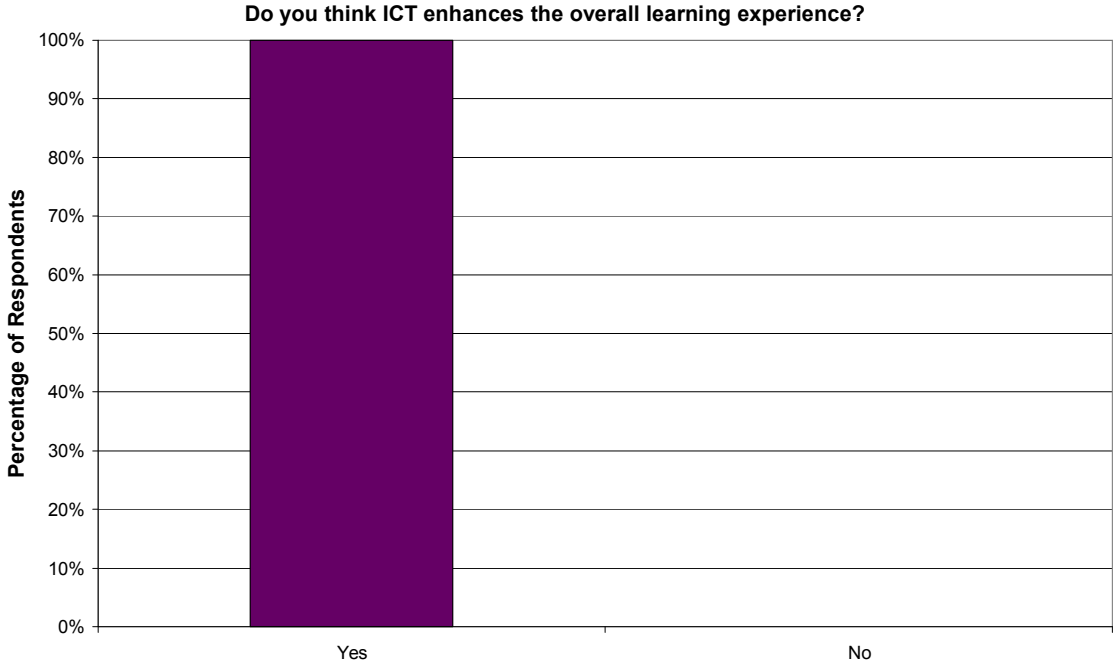
VTOS Teachers		
	Agree	**Disagree**
Statement	**% of Respondents**	
I have enough time to prepare ICT lessons	67	33
I have sufficient ICT resources in my classroom	100	-
There are adequate ICT resources in the Centre	100	-
I am adequately trained to use ICT	100	-
There is sufficient ICT support if anything goes wrong	100	-
I am confident using ICT	100	-
I have the expertise to use ICT in my teaching	100	-
I am scared of ICT	-	100
I find it difficult to access a computer room	67	33
I receive enough encouragement from the co-ordinator	100	-
Adult Learners wish to use ICT to learn	100	-
Adult Learners prefer a teacher-centred approach to learning	33	67
ICT could add to an adult learner's fear of returning to education	33	67

Teachers exclusive to BTEI

BTEI Teachers		
	Agree	**Disagree**
Statement	**% of Respondents**	
I have enough time to prepare ICT lessons	50	50
I have sufficient ICT resources in my classroom	50	50
There are adequate ICT resources in the Centre	100	-
I am adequately trained to use ICT	50	50
There is sufficient ICT support if anything goes wrong	100	-
I am confident using ICT	-	100
I have the expertise to use ICT in my teaching	50	50
I am scared of ICT	50	50
I find it difficult to access a computer room	50	50
I receive enough encouragement from the co-ordinator	100	-
Adult Learners wish to use ICT to learn	50	50
Adult Learners prefer a teacher-centred approach to learning	50	50
ICT could add to an adult learner's fear of returning to education	50	50

Question 19

All teachers were asked did they think ICT enhances the overall learning experience. All teachers agreed that ICT does indeed enhance learning.



The reasons given were as follows:

"*ICT will enhance learning e.g. web-based self directed learning can have positive effects*"

"*Confidence grows as students become more computer literate as well as enhancing job aspects for the future*"

"*Holistic learning experience - can increase interaction*"

"*Learning can be more interesting but I personally cannot access a computer room*"

"*An extra dimension, another angle but I wouldn't have the skills to use it*"

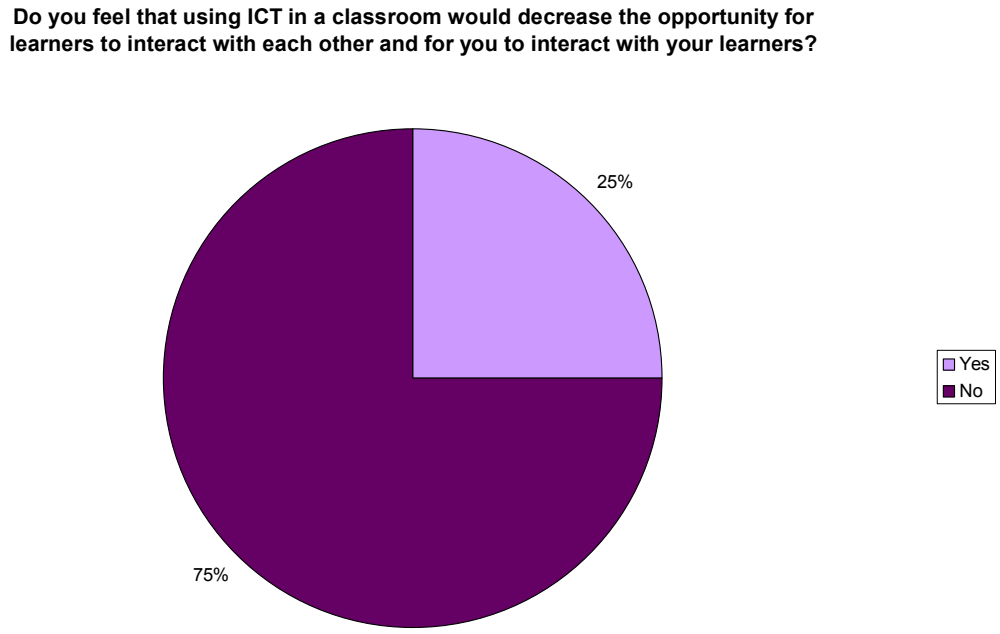
"*Allows learners the opportunity to learn through different media*"

"*Helps learners learn in different ways i.e. some prefer to learn through doing*"

"*Learners need ICT both for work and future courses e.g. LYIT, NWRC*"

Question 20

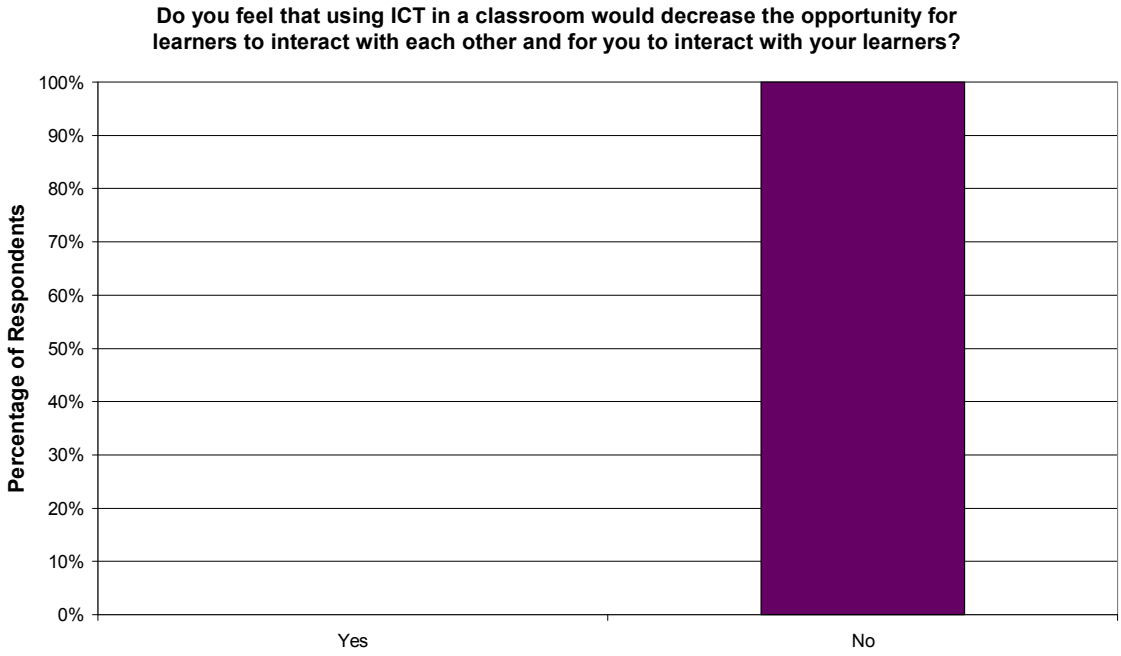
All teachers were asked did they feel using ICT in a classroom would decrease the opportunity for learners to interact with each other and for them to interact with learners. They responded as follows:



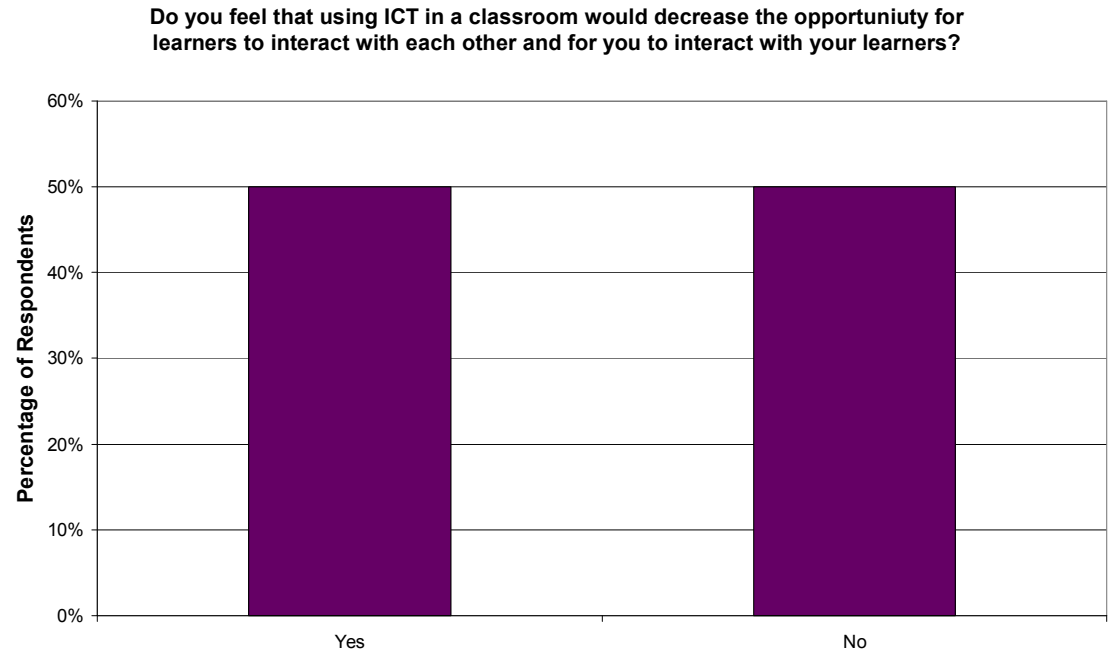
Only 2 teachers felt that using ICT in the classroom would decrease interaction. The specific breakdown by programme was as follows:

Teachers exclusive to VTOS

All VTOS exclusive teachers disagreed that ICT affects interaction.



Teachers exclusive to BTEI



Half of the BTEI exclusive teachers felt that using ICT in the classroom affects interaction stating that "*ICT may take over but it's up to the teacher to prevent this*".

Appendix H
Observation Log Sheets

Observations

Teacher A	BTEI Teacher
Teacher B	BTEI Teacher
Teacher C	VTOS Teacher
Teacher D	VTOS Teacher
Teacher E	VTOS Teacher
Teacher F	Teacher who teaches across programmes delivering a BTEI class in a VTOS classroom
Teacher G	Teacher who teaches across programmes delivering a VTOS class
Teacher H	Teacher who teaches across programmes delivering a VTOS class

Direct Observation Log Sheet – Teacher A

Date: 12 April 2010 Location: AETC – BTEI Classroom

Circumstances

Teachers will be conducting their class as normal. The observation will be passive.

Key areas of interest

Does the teacher/learner use ICT at any stage throughout the lesson? If so, how does the teacher/learner interact with ICT, in terms of knowledge and understanding?

1. Was ICT used during the lesson? Yes No √
2. What ICT equipment was used by the teacher? N/A
3. Did the teacher need assistance to set up ICT equipment? N/A
4. Did the teacher have any difficulty using the ICT equipment? N/A
    a. If yes, what did he/she do? _____
5. Did learners use ICT in this lesson? Yes No√
6. What ICT equipment was used by learners? N/A
7. Did learners need assistance with the equipment used? N/A
    a. If yes, what help was needed? _____

Positive actions/responses observed

ICT was not used by either the teacher or the learners during this 40 minute lesson. The teacher was teaching Leaving Certificate Business and was explaining the various stages of a Product Life Cycle to the learners. The teacher drew the Product Life Cycle on the board and learners copied this into their books. Although ICT was not used, learners were active in their learning and were engaged throughout.

Negative actions/responses observed

No negative responses were recorded.

Comments

The learners were engaged throughout. However, if the teacher had prepared the drawing using PowerPoint in advance of the class she could have displayed the Product Life Cycle digitally on screen, thereby reducing the time taken to illustrate it on the board.

Signed: _____

Date: _____

Direct Observation Log Sheet – Teacher B

Date: 12 April 2010 Location: AETC – BTEI Classroom

Circumstances

Teachers will be conducting their class as normal. The observation will be passive.

Key areas of interest

Does the teacher/learner use ICT at any stage throughout the lesson? If so, how does the teacher/learner interact with ICT, in terms of knowledge and understanding?

1. Was ICT used during the lesson? Yes No √
2. What ICT equipment was used? N/A
3. Did the teacher need assistance to set up ICT equipment? N/A
4. Did the teacher have any difficulty using the ICT equipment? N/A
    a. If yes, what did he/she do? _____
5. Did learners use ICT in this lesson? Yes No√
6. What ICT equipment was used by learners? N/A
7. Did learners need assistance with the equipment used? N/A
    a. If yes, what help was needed? _____

Positive actions/responses observed

No positive responses were recorded

Negative actions/responses observed

ICT was not used by either the teacher or the learners during this 40 minute lesson. The teacher was teaching Leaving Certificate Biology and the focus of the lesson was an explanation of DNA. Throughout the lesson, learners were disengaged in the learning process. The topic was complicated and a lot of information was communicated verbally by the teacher.

Comments

Learners appeared to lack interest in the lesson and were unresponsive to questions asked by the teacher. If the teacher had used a visual aid to explain DNA formation, learners may have paid more attention and understood the topic better.

Signed: _____

Date: _____

Direct Observation Log Sheet – Teacher C

Date: 13 April 2010 Location: AETC – VTOS Classroom

Circumstances

Teachers will be conducting their class as normal. The observation will be passive.

Key areas of interest

Does the teacher/learner use ICT at any stage throughout the lesson? If so, how does the teacher/learner interact with ICT, in terms of knowledge and understanding?

1. Was ICT used during the lesson? Yes√ No

2. What ICT equipment was used? The teacher used a laptop computer connected to a digital projector.

3. Did the teacher need assistance to set up ICT equipment? Yes No√

4. Did the teacher have any difficulty using the ICT equipment? Yes√ No

    a. If yes, what did he/she do? During the lesson, the digital projector switched off and the teacher used the telephone in her room to contact the VTOS co-ordinator who came to the room and fixed the problem. The co-ordinator replaced the cable connecting the laptop to the digital projector. The class continued as normal.

5. Did learners use ICT in this lesson? Yes No√

6. What ICT equipment was used by learners? N/A

7. Did learners need assistance with the equipment used? N/A

   a. If yes, what help was needed? _____

      _____

Positive actions/responses observed

ICT was used throughout this one hour class as the teacher had prepared a PowerPoint presentation in advance of the class on Piaget's Stages of Cognitive Development. The teacher was delivering the FETAC Childcare Level 5 module, Child Development.

Negative actions/responses observed

Throughout the lesson, learners were familiar and comfortable with taking notes from the presentation prepared. The teacher spent the class elaborating on the points on screen.

Comments

Although the teacher experienced technical difficulties during the lesson, she knew where to seek the help she needed. There was positive interaction amongst learners and between the teacher and the learners throughout.

Signed: _____

Date: _____

Direct Observation Log Sheet – Teacher D

Date: 13 April 2010 Location: AETC – VTOS Classroom

Circumstances

Teachers will be conducting their class as normal. The observation will be passive.

Key areas of interest

Does the teacher/learner use ICT at any stage throughout the lesson? If so, how does the teacher/learner interact with ICT, in terms of knowledge and understanding?

1. Was ICT used during the lesson? Yes√ No

2. What ICT equipment was used by the teacher? The teacher used a laptop computer connected to a digital projector and a server. The teacher also used Internet and e-mail facilities.

3. Did the teacher need assistance to set up ICT equipment? Yes No√

4. Did the teacher have any difficulty using the ICT equipment? Yes No√

    a. If yes, what did he/she do? _____

    _____

5. Did learners use ICT in this lesson? Yes√ No

6. What ICT equipment was used by learners? Each learner used a PC throughout the lesson.

7. Did learners need assistance with the equipment used? Yes No√

a. If yes, what help was needed? _____

_____

Positive actions/responses observed

ICT was used throughout the lesson as the teacher was explaining how to attach a file to an e-mail as part of the FETAC Level 5 Computer Applications module, Information and Communication Systems. The teacher used the digital projector to show learners how to attach a file to an e-mail. After each step, learners repeated what had been demonstrated. Therefore, learners were active throughout this lesson. Towards the end of the lesson, learners used their PCs to access the server in order to retrieve files which contained a written step by step account of how to attach a file to an e-mail.

Negative actions/responses observed

No negative responses were recorded.

Comments

Learners were active during the lesson. Positive interaction occurred throughout amongst learners and between the teacher and the learners.

Signed: _____

Date: _____

Direct Observation Log Sheet – Teacher E

Date: 14 April 2010 Location: AETC – VTOS Classroom

Circumstances

Teachers will be conducting their class as normal. The observation will be passive.

Key areas of interest

Does the teacher/learner use ICT at any stage throughout the lesson? If so, how does the teacher/learner interact with ICT, in terms of knowledge and understanding?

1. Was ICT used during the lesson? Yes No √
2. What ICT equipment was used by the teacher? N/A
3. Did the teacher need assistance to set up ICT equipment? N/A
4. Did the teacher have any difficulty using the ICT equipment? N/A
    a. If yes, what did he/she do? _____
5. Did learners use ICT in this lesson? Yes No√
6. What ICT equipment was used by learners? N/A
7. Did learners need assistance with the equipment used? N/A
    a. If yes, what help was needed? _____

Positive actions/responses observed:

No positive responses were recorded.

Negative actions/responses observed

In this Leaving Certificate History class, the teacher talked about World War 2 and the impact of the Holocaust on the Jewish population of Europe. ICT was not used at any stage during this lesson. This lesson was extremely theoretical and although learners asked many questions, these questions were repetitive and many learners said that they did not understand what was being discussed.

Comments

One of the learners asked the teacher whether or not there was a video/DVD on the subject of the Holocaust. The teacher informed the class that she would show them a DVD in the next lesson to illustrate the points she had been trying to make.

Signed: _____

Date: _____

Direct Observation Log Sheet – Teacher F

Date: 15 April 2010 Location: AETC – BTEI class in VTOS Classroom

Circumstances

Teachers will be conducting their class as normal. The observation will be passive.

Key areas of interest

Does the teacher/learner use ICT at any stage throughout the lesson? If so, how does the teacher/learner interact with ICT, in terms of knowledge and understanding?

1. Was ICT used during the lesson? Yes√ No
2. What ICT equipment was used by the teacher? The teacher used a PC connected to a digital projector.
3. Did the teacher need assistance to set up ICT equipment? Yes No√
4. Did the teacher have any difficulty using the ICT equipment? Yes No√
    a. If yes, what did he/she do? _____
5. Did learners use ICT in this lesson? Yes No√
6. What ICT equipment was used by learners? N/A
7. Did learners need assistance with the equipment used? N/A
    a. If yes, what help was needed? _____

Positive actions/responses observed

The teacher in this class was delivering a BTEI class within a VTOS classroom. Therefore was able to avail of VTOS resources. The class involved ascertaining the impact of advertising upon consumers as part of the FETAC Marketing Level 5 module, Marketing Practice. The teacher used PowerPoint to outline the key points and she then used Windows Media Player to show the class real advertisements, for reinforcement purposes. Learners were enthusiastic and keen to share their experiences regarding the subject.

Negative actions/responses observed

No negative responses were recorded

Comments

Learners were engaged and active during the lesson and interacted amongst themselves and with the teacher.

Signed: _____

Date: _____

Direct Observation Log Sheet – Teacher G

Date: 22 April 2010 Location: AETC – VTOS Classroom

Circumstances

Teachers will be conducting their class as normal. The observation will be passive.

Key areas of interest

Does the teacher/learner use ICT at any stage throughout the lesson? If so, how does the teacher/learner interact with ICT, in terms of knowledge and understanding?

1. Was ICT used during the lesson? Yes√ No
2. What ICT equipment was used by the teacher? A DVD player and TV
3. Did the teacher need assistance to set up ICT equipment? Yes No√
4. Did the teacher have any difficulty using the ICT equipment? Yes No√
    a. If yes, what did he/she do? _____
5. Did learners use ICT in this lesson? Yes No√
6. What ICT equipment was used by learners? N/A
7. Did learners need assistance with the equipment used? N/A
    a. If yes, what help was needed? _____

Positive actions/responses observed

This class was a Leaving Certificate Geography class. The teacher talked briefly about Volcanoes. She tied this in with the recent eruptions in Iceland and then showed a DVD on the eruption of volcanoes and its impact upon both the surrounding areas and the people who live in these communities.

Negative actions/responses observed

No negative responses were observed.

Comments

Learners were attentive throughout the lesson and asked pertinent questions after the DVD was shown.

Signed: _____

Date: _____

Direct Observation Log Sheet – Teacher H

Date: 22 April 2010 Location: AETC – VTOS Classroom

Circumstances

Teachers will be conducting their class as normal. The observation will be passive.

Key areas of interest

Does the teacher/learner use ICT at any stage throughout the lesson? If so, how does the teacher/learner interact with ICT, in terms of knowledge and understanding?

1. Was ICT used during the lesson? Yes No √
2. What ICT equipment was used by the teacher? N/A
3. Did the teacher need assistance to set up ICT equipment? N/A
4. Did the teacher have any difficulty using the ICT equipment? N/A
    a. If yes, what did he/she do? _____
5. Did learners use ICT in this lesson? Yes No√
6. What ICT equipment was used by learners? N/A
7. Did learners need assistance with the equipment used? N/A
    a. If yes, what help was needed? _____

Positive actions/responses observed

No positive actions/responses were observed.

Negative actions/responses observed

The teacher discussed the advantages and disadvantages of Internet shopping as part of the FETAC Level 5 Computer Applications module. The learners were unresponsive to questions posed by the teacher and avoided eye contact with her.

Comments

The learners had difficulty engaging in the lesson and were not active during it. The subject was very theoretical and the learners said that they would have liked opportunities to explore this subject independently.

Signed: _____

Date: _____