Implementing a Blended Learning Approach in a Further Education College:

A Case Study

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Declaration

I hereby declare that this project is entirely my own work, and that it has not been submitted for any other academic award, or part thereof, at this or any other educational establishment.

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Abstract

Blended or hybrid learning refers to learning which is provided through any combination of instructional modalities, both physical and virtual. It combines concepts, methods, processes, tools and pedagogic styles to achieve a holistic learner centred approach to teaching and learning and has become evermore dynamic thanks to the evolution of web 2.0 technologies and open source software. The operational delivery of blended learning can also be supported by the use of a Course Management System on both an educational and administrative level.

The purpose of this case study was to examine the development, documentation and implementation of such a system of flexible and personalised blended learning into a further education setting, which could then be used to increase learner choice in diverse aspects of their learning experience. The further education sector was chosen as the setting for this research because of the diversity it provides both in the courses it offers and the learners that are involved. Such diversity is suited to the socio-constructivist principles that underlie the concept of blended learning.

The research was carried out at a further education college located in Co. Westmeath, Ireland. The research group comprised of 87 first year students attending a FETAC Social Care Course along with teachers involved with the social care course and college management. During a 5 month period, the Moodle CMS was used to introduce the participants to various aspects of blended learning.

Key findings were determined from a mixture of quantitative and qualitative data and include the opinion that technologies such as an open source CMS and innovations emerging from the read/write web can be of benefit to the success of a blended learning approach. However, care must be taken in the timing and implementation of change processes and adequate training and support must be made available to participants involved.
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Very special thanks to all my family who listened to more than they needed about blended learning.
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<td>Central Applications Office</td>
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<tr>
<td>CBT</td>
<td>Computer Based Training</td>
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<td>CMS</td>
<td>Course/Content Management System</td>
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<td>COI</td>
<td>Community of Inquiry</td>
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<td>CSL</td>
<td>Computer Supported Learning</td>
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<td>FE</td>
<td>Further Education</td>
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<td>FETAC</td>
<td>Further Education and Training Awards Council</td>
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<td>HELS</td>
<td>Higher Education Links Scheme</td>
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<td>ICT</td>
<td>Information and Communications Technology</td>
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<td>LCMS</td>
<td>Learning Content Management System</td>
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<td>Learning Management System</td>
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<td>LOR</td>
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<td>MLE</td>
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<td>Moodle</td>
<td>Modular Object Oriented Dynamic Learning Environment</td>
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<td>PLC</td>
<td>Post Leaving Certificate</td>
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<td>SCIE</td>
<td>Social Care Institute for Excellence</td>
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<td>SCORM</td>
<td>Sharable Content Object Referencing Model</td>
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<td>VLE</td>
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Chapter 1
Introduction

1.1 Introduction

The term "Further Education" (FE) embraces education and training which occurs after second-level schooling but which is not part of the third-level system. The sector was formalised in Ireland in 2001 with the introduction of a statutory awarding body, the Further Education and Training Awards Council (FETAC) under the Qualifications (Education and Training) Act 1999. The Post Leaving Certificate (PLC) programme is a further education programme that was initially introduced into the Irish education system in 1985, its remit at that time being to provide a combination of vocational training and work experience to young people who had left education on completion of secondary school. The content of a PLC course differs significantly from that of second-level programmes, in that it focuses specifically on vocational elements. The student body is also diverse, incorporating all ages and varied backgrounds, with learner objectives covering vocational, academic and recreational themes. Due to a continuing cycle of underfunding, the FE sector is faced with a number of difficulties in the day-to-day running of courses including lack of space and accommodation, little dedicated administrative support for tutors and course coordinators, lack of everyday resources and increasing student numbers in oversubscribed courses, leading to dilution of already stretched resources and teacher contact hours. The structure of many courses also involves a large element of work experience, making it difficult for students to attain all class contact hours required through conventional face-to-face classroom based methods.

The most prevalent form of teaching within the further education sector has been the traditional classroom based format. However, as the trend towards the digitisation of knowledge continues (Tapscott 1997), focus is shifting from the traditional teaching and learning methods to a more innovative structure of flexible learning with the key idea being learner choice and autonomy in the learning experience. This form of blended learning incorporates aspects of both traditional learning and e-Learning techniques. It aspires to incorporate different media, communications
modalities, instructional policies and learning activities to create a pedagogic model which will offer greater flexibility and empower the learner.

Little research has been carried out in the further education sector (Leney et al. 2007), with regard to examining how the structure of PLC courses could be adapted to this hybrid format. Collis and Moonen (2002) describe forms of flexible learning as a complex combination of technology, pedagogy, implementation strategy and institutional frameworks. Because of this complexity, it is often difficult to put an effective programme into practice unless a realistic implementation plan is clearly constructed and specific pedagogic and technical goals are focused on.

1.2 Statement of Topic

The study was instigated as a response to the logistical problems which are indicative of further education institutions in Ireland. It is the purpose of this research to examine the processes and outcomes of the implementation of a programme of flexible learning known as “hybrid” or “blended learning” in a Post Leaving Certificate college, focusing on pedagogic, technological and organisational change and the establishment of arrangements and resources that underpin and support this innovation.

1.2.1 Research Rationale

Maintaining progress within the area of blended learning needs fundamental pedagogic and organisational change and the emergence of arrangements and resources in schools and colleges that will support this innovation. By developing a hybrid classroom using an open source Course Management System (CMS) and incorporating the concepts of blended learning, it was the researcher’s goal to expand on the current academic techniques being used in an existing PLC course and introduce both learners and teachers to a more learner-centred approach to education. The system developed would initially be used to instigate a scheme of blended learning techniques and processes to one cohort of learners. An analysis would then be made of the perceived effectiveness of the system from student, teacher and management perspectives.
1.2.2 Context of Research

The research was carried out at a further education college located in Co. Westmeath, Ireland. The college has 500 full-time students and provides courses in such areas as business, computing, childcare, social care, art and design and performing arts. The student group selected to take part in the research was selected from the School of Social Care, who, because of their general structure and student profile, it was believed by the researcher, would most benefit from this initial introduction of blended learning techniques.

1.3 Objectives

The specific objectives being focused upon in this research are as follows

1. The examination of how an established further education course could adapt its culture and practices to the implementation of a blended learning format.

2. The investigation of how the use of a Course Management System could contribute to the success of a blended learning programme.

3. The establishment of what characterises a thriving hybrid classroom and how its successful implementation can be ensured.

4. The determination of what elements of pedagogy should be considered in the context of a flexible learning environment.

5. The identification of the current technologies available to facilitate the effective operation of a blended learning or flexible learning structure.

1.4 Research Methodology

Because this research focused on an examination of contemporary events and dealt with “how” type questions, an explanatory case study methodology was chosen. Yin (2003, p.13) defines a case study as;

...an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.
It is a triangulated research strategy that incorporates both qualitative and quantitative data collection techniques. The need for triangulation is necessary because of the ethical need to confirm the validity of the processes involved, and was achieved by using multiple sources of data (Yin 2003, p.6).

Initially two questionnaires were sent out to all tutors and learners who would be participating in the research. This comprised of 8 teachers teaching on the social care courses and 87 first year students who were enrolled in the FETAC National Certificate in Social Care. These questionnaires were used to establish the group’s technology usage (both in general and in relation to learning) at the commencement of the research. Towards the end of the research period two evaluation questionnaires were issued to teachers and students in order to determine their opinions on the hybrid learning format and the course management system that was used. Findings from these questionnaires were analysed using a case study database.

During the course of the study observations, individual interviews and focus group interviews were carried out with college management, tutors and learners. Results from these interviews and observations were triangulated with findings from the questionnaires. Moderated online discussions were also held with learners at the end of the research period.

1.5 Scope and Limitations of Study

It is important to critically evaluate the processes and results of the study as a whole. One aspect to consider is that the research methodology used, i.e. the case study, has certain limitations that need to be taken into account when analysing findings. Firstly, it can be problematic to present findings from case studies in numerical format since most of the data is of a qualitative nature.

Also, because of unique features involving the specific setting, social structure and individuals concerned, case study research is not generalisable in the conventional sense. Subjectivity can also be a limiting factor in case study research. However, in this instance the researcher has tried to minimise such subjectivity through the use of triangulation of findings.
Another limitation of this particular research project stems from the fact that the study started in mid academic year. Because of this there was a constraint on the amount of time available to implement a fully blended programme. To counter react this, it was decided to only initiate what Sharpe et al. (2006) describes as an “intermediate blend”. This would involve dealing with the initial blend which focuses on the initial delivery, technology requirements and chronology, while the intermediate blend focuses on roles of stakeholders, locus (both in and out of the classroom) and pedagogic approach. The advanced blend deals with focus and direction but will not be measurable in the scope of this study.

1.6 Structure of Thesis

Chapter 1 is an introduction to the research project and examines the background to and reason why the research subject was selected. It introduces the reader to the structure of the further education system in Ireland and also to the concept of blended learning. Specific research objectives are documented within this chapter as is a summary of the methodology used. Finally, limitations of the research are acknowledged and detailed.

Chapter 2 is divided into six sections and analyses past and current literature in the subject area. These sections include 1) the topic of blended learning and course management systems, 2) the concept of course design and operational models, 3) the successful operation of a blended learning strategy, 4) emerging technologies, 5) current practices in further education and 6) pedagogic principles and e-Learning.

Chapter 3 details the research methodology employed. It examines why the case study methodology was chosen for this project and also gives details of the data analysis strategies and tools that were used to collect and analyse data from all stakeholders involved.

Chapter 4 presents the research findings that were extracted from questionnaires, observations, interviews, focus groups and internet discussions. The findings are divided into the initial research questions – that is a) adapting a further education course to incorporate blended learning, b) contributions that may be attributed to a course management system, c) the characteristics of a successful hybrid classroom
d) pedagogic considerations involved and e) the identification of current technologies that may be used to enhance the blended learning structure.

Chapter 5 discusses the findings from chapter four and compares these finding with previous research undertaken by accredited researchers in this field.

Chapter 6 summarises issues raised in chapter 5 and draws conclusions from the entire case study.
Chapter 2

Blended Learning and the Hybrid Classroom

2.1 Introduction

The purpose of this research is to examine the processes involved with and outcomes attributed to the implementation of a programme of flexible and individual blended learning in the further education sector, specifically with the involvement of a course management system. The literary review focuses on the following areas of enquiry:

a) Examination of blended learning and the effect of its implementation on stakeholders, b) the operational delivery of blended learning and in particular the usage of course management systems, c) the concepts of course design and learning models for hybrid courses, d) emerging technologies in the field of online learning, e) the role of online learning in the further education sector, f) consideration of pedagogic theory in establishing the correct “blend”.

Blended learning is specifically discussed to show the differences between it and other areas of online learning and expose issues that are of particular importance to its successful implementation (Nicols 2003, pp.1-10). This is examined from the point of view of both teacher and learner. An examination of the research on student and instructor roles is included to show how student satisfaction is enhanced through the focus on learner centred practices (Dagger et al. 2005, pp.9-15). Concentration on operational delivery is included in order to determine the usefulness of course management systems and their ultimate pedagogic contribution (Lane 2008, pp.4-6). A review of the various learning models is carried out to establish the most effective implementation of a blended learning system. A number of models are analysed with the objective of generating the maximum blend (Sharpe et al. 2006).

The development of e-Learning products and the provision of e-Learning opportunities is one of the most rapidly expanding areas of training and education (Hughes and Atwell 2002). An examination of new technologies such as Web 2.0,
social networking and SCORM compliant software is included to propose a reason for the expansion of these e-Learning opportunities.

Finally, the further education sector is analysed to gain an insight into the environment in which the planned blended learning system will be introduced. This assessment is based on an analysis of the typical further education learner and the constructivist educational theories that support further education practices as a whole.

2.2 Blended Learning

There are numerous definitions of blended learning in current research. These definitions can focus on such diverse areas as combining web based technologies, blending pedagogic approaches, incorporating face to face instruction with educational technology or uniting educational technology with actual job tasks (Driscoll 2002). In its most fundamental form, blended learning generally refers to learning which is provided through any combination of delivery methods, both physical and virtual. Osnguthorpe and Graham (2003, p.228) stated that a truly blended solution “involves the strengths of each type of learning environment and none of the weaknesses”.

When examined on a deeper level, a blended learning framework would involve a combination of concepts, modes, methods, processes and tools (Xiufang and Qingcheo 2008, pp.598-601). The term “blended” refers to the fact that traditional instructor-led arrangements are being supplemented (as opposed to being replaced) with other electronic formats. This holistic approach may include a mixture of structured classroom-based formal training, support of informal learning through online technologies and group support, just-in-time support to provide back-up to students on a one-to-one needs basis, along with a myriad of technologies and tools, both synchronous and asynchronous. However, Oliver and Trigwell (2005, pp.17-26) finds fault with the whole principle of blended learning as it stands, considering the term to be “amorphous, lacking in any kind of clarity....There are no principles underlying it” (p.18). Oliver and Trigwell also suggest that a blended learning theory focuses on the instructor, tutor or designer and is not seen from the
perspective of the learner. More positively, emphasising the overall importance of learning styles, Hinterberger et al. (2004) constructed a definition of blended learning as the following:

An instructor supports blended learning if he or she includes in the curriculum socially supported interaction (e.g. classroom instruction), self controlled instruction (e.g. e-Learning material), assessment as feedback to students and instructor, and applies to all of them the same instructional strategy to define the targeted competence level (p. 6)

Appendix A shows a breakdown between the offline and online components of blended learning.

2.2.1 E-Learning or Blended Learning

Wentling et al. (2000, p.5) define online Learning or e-Learning as “the acquisition and use of knowledge distributed and facilitated primarily by electronic means”. The e-Learning format may be in the context of computer-based training (CBT), Web-based Training (WBT), or different formats of online learning such virtual lectures, seminars and tutorials. In the 1990’s during the initial introduction and evolution of e-Learning, proponents predicted the main advantages of the technology as being the removal of barriers to learning such as time and geographical location. In addition, the fact that global economies were changing from what was primarily a production-based context to a knowledge-based one, leaving information redundant at a faster rate, meant that it was necessary for populations to continuously acquire new knowledge and attitudes (European Commission 2000). E-Learning and the advancement of web-based technologies were to facilitate this transformation, with initial uptake of e-Learning courses being mainly in the area of online and long-distance corporate training and professional development. As more online content became available, traditional instructor-led training in schools and colleges saw a transition in their practices and initiated the introduction of e-Learning courses into their establishments. Institutional advantages referred to at the time included speed of development and delivery of courseware, along with flexibility and cost-savings while advantages for individual learners included self paced learning, reduced travel, convenience of any time/any
place learning, options for continual practice and review and a shift to more learner responsibility in the learning process (Long 2003, p.10).

However, despite initial accolades and pronouncements of the advent of a whole new way of teaching, e-Learning did not always live up to its early promise. Work by some researchers suggested that new technologies made “no significant difference” (Russell 1999) to the overall improvement of the learning experience, while Roserberg (2001) states that “the history of using technology for learning is replete with promise and disappointment.” There are a number of suggested causes for this. On its initial inception e-Learning media was produced by technology providers with little input from teachers or learners. Consequently, a vast amount of the content created was technology driven rather than learner centred and lacked a sound pedagogic grounding.

The current development approaches for e-Learning systems fail to explain in a clear and consistent way the pedagogical principles that support them. Moreover, decisions with regard to the structuration of each component proposed by these approaches are mainly taken by the designer/developer. As a result, the ensuing e-Learning systems reflect “common sense” rather than a theoretically informed and systematic design.

(Andrede et al. 2008, p. 1510)

Also, e-Learning resources tended to be tacked onto existing training courses as opposed to being integrated efficiently into them, providing few benefits for education in schools and universities. (Oliver 1999, pp.240-254). Problems have arisen out of concerns about quality assurance and the assessment of verifiable outcomes on online courses (Ebersole 2005, pp.69-76). On a pragmatic level, learners also faced difficulties with the lack of face to face teaching, motivation and peer involvement. Research has shown that some of these perceived shortcomings can be lessened through the introduction of blended learning practices. By taking the e-Learning element and integrating it as a seamless component to existing face to face learning methods, a blended approach can be achieved. In this respect blended learning “can be thought of as a new genus, not a new species: it is the result of evolution, not revolution” (Nichols 2003, p.3). When incorporating the aforementioned elements, the critical issue that needs to be addressed is that to optimise learning, the right delivery methods must be matched to the learners’ needs
Rather than replacing existing tutor-led structures, blended learning models are meant to increase independent learning skills and introduce students to methods of erudition that are becoming fundamental components to lifelong learning.

Another differentiation between e-Learning and blended learnerer was highlighted in a report commissioned by The Thomson Corporation called the Thomson Job Impact Study (2002). In this it was shown that there was a 30% increase in accuracy of performance and a 41% increase in the speed of performance by those learners who participated in a blended learning programme, compared to learners who worked with a wholly e-Learning strategy, suggesting that a mix of strategies is the most effective.

### 2.2.2 Blended Learning and Computer Supported Learning Design

According to Ertl et al. (2007, p.126) in order for e-Learning to be effective it “....has to be integrated into the existing training culture of an organisation. To achieve this, integrative approaches should be applied such as blended learning”. Studies have indicated that this convergence of classroom based learning and open and distance learning which combine to make up a blended learning approach can achieve far higher performance accuracy and speed over single method delivery options. (Oakes and Casewit 2003, pp.17-19). Zengar (2004, p.54) suggests that the creation of a more engaging and effective learning experience for students can be achieved by designing a blended learning solution that encompasses three specific characteristics, these being a) a completely integrated instructional design rather than a haphazard joining together of e-Learning modules to instructor led sessions, b) a consistent framework and c) the best use of each teaching method, whether it be instructor-led or technology based, determined by the requirements of a specific learning situation.

Inan and Lowther (2007, pp.1-20) developed an analysis schema for Computer Supported Learning (CSL) models (Appendix B) which looked at a variety of instructor-led activities within an environment of different components, focusing on two elements of assessment – format and source. Twenty eight separate models
were then examined using the criteria laid out in the schema, with overall results showing the importance of student based approaches that emphasise social learning and positive trends in the realm of constructivist learning.

2.2.3 Operational Delivery of Blended Learning

2.2.3.1 The Hybrid Classroom

Within the context of blended learning, the hybrid classroom has been described as introducing the learner to new information, procedures and concepts outside the classroom setting before the class physically meets (Mansaur and Davison 2007). It has also been described as a thoughtful assimilation of classroom face-to-face learning practices and online learning experience in a cross platform strategy.

Blended learning is a hybrid of classroom and online learning that includes some of the conveniences of online courses without the complete loss of face-to-face contact, i.e. preserving the social context, which is critical to successful learning.

(Lassic-Lazic et al. 2006, p.88)

This model originated in third-level education but, with the help of government initiatives and advances in open source resources, is beginning to find a foothold in second-level and FE level education on an international scale. The practicalities of running a hybrid classroom have become more feasible over the past decade through the continual development of virtual learning environments (VLE) and course management systems (CMS).

2.2.3.2 Virtual Learning Environments (VLE)

Santy and Smith (2007) note that blended learning and e-Learning techniques can be ‘networked’ using an institutional virtual learning environment (VLE) and an intranet or the Internet to enhance knowledge, skills and performance. A virtual learning environment is a learning management software system that incorporates various communications systems and online methods of delivering courses and course materials. The services VLEs provide are aimed at teachers, students, administrative personnel and other stakeholders such as parents etc. Accessing a VLE is enabled through either the internet or an intranet and there are often options to work both online and offline. (European Schoolnet 2003). The term VLE is
generally considered as an umbrella term encompassing a wide variety of terms that have been attributed to the management of online courses, such as Course or Content Management Systems (CMS), Learning Management Systems (LMS), Learning Content Management Systems (LCMS) and Managed Learning Environments (MLE). Meredith (2002, pp.43-56) found that the predominant instructional model of the VLE is the traditional one of teacher control and learner compliance. This was especially noted in the case of learning management systems and managed learning environments, but less so for course management systems which could be customised to learners’ needs.

2.2.3.3 Defining a Course Management System (CMS)

A CMS is an internet based tool that controls the management of one or more courses, focusing on student enrolment, tracking student performance and the creation and distribution of course content and is usually used for distance learning or hybrid courses.

It provides an instructor with a set of tools and a framework that allows the relatively easy creation of online course content and the subsequent teaching and management of that course including various interactions with students taking the course.

(EDUCAUSE 2003, p.1)

A CMS incorporates both learning content delivery systems along with management and administration modules, specifically focusing on the learner, unlike a LMS which is focused primarily on the organisation’s perspective (Blackboard 2009).

Research results have been mixed concerning how teaching and learning is impacted by these systems. Some studies have seen systems such as Blackboard as limiting pedagogy, with management using them as a step toward standardisation of management issues (Danaher et al. 2004). According to Morgan (2003), “Faculty adopt course management systems principally to manage the more mundane tasks associated with teaching, especially teaching large classes”. Lane (2008, p.4) suggests that certain systems will encourage “novice instructors to plug in their content under the appropriate category, instead of envisioning a translation of their individual pedagogical style into an online environment.”
Other studies have been more favourable, especially in relation to open source course management systems which allow for a greater degree of customisation and learner centred involvement (Georgiakakis et al. 2005).

2.2.3.4 The Selection of a Course Management System

Due to funding restrictions, further education and second-level institutions were initially less likely to introduce course management systems than third-level colleges and universities. The market leaders WebCT and Blackboard (who have recently merged) are both proprietary commercially-marketed systems with annual fees involved. However, the development of numerous open source course management systems has opened new avenues to the technology. These open source systems vary in functionality and educational acceptability but a number have taken on the might of the commercially marketed systems and performed successfully against them. Examples of forerunners in the open source market include Moodle, ATutor, CourseWork, Whiteboard and ClassWeb. Georgiakakis (2005, pp.45-59) suggests the use of an evaluation model such as the one shown in figure 2.1 for the examination of the appropriateness of the selection and integration of a CMS into existing courses.

The successful implementation of a CMS into a hybrid classroom will depend on the level to which the technology and pedagogy are integrated. If the primary focus is on pedagogy and the technology is seen as just another mode of delivery, then each area will have limited impact on the other.

2.2.3.5 Open Source Systems

Open source software is defined as software which is licensed to allow users to study, change, and improve its design through the availability of its source code. Having access to all the code of the content management system provides an unparalleled degree of flexibility. With code being freely accessible, it allows local developers to make any required changes to the system to meet specific learning requirements.
Learning Management Systems based on a constructivist pedagogy, such as Moodle, Joomla or Drupal, make it possible for a novice instructor to explore pedagogical options more freely than Blackboard or WebCT.

(Lane 2008, p.4)

2.2.3.6 Advantages of the “Moodle” Course Management System

Moodle (Modular Object-Oriented Dynamic Learning Environment) is just one of the open source systems that have emerged over the last few years. Originating in Australia in 2002, with a design based on socio-constructivist pedagogy, it has now become a worldwide learning tool with 48,559 registered validated sites in 203 countries. As of January 2009 there were 249 Irish learning institutions that actively incorporate Moodle software into their teaching courses. (www.moodle.org 2009).

In studies it has rated highly against proprietary market leaders such as Blackboard.
(Bremer 2005) and (Miyazoe 2008, pp.745-754) and has become the leader in open source software. Advantages of using Moodle as a CMS include the high level of customisation and modularisation afforded to this system with both teachers and learners organising and contributing to the learning experience.

Studies have also shown that using a variety of communications tools such as those that are incorporated into Moodle, alongside traditional teaching methods can lead to higher order thought processes, greater learner autonomy and independent thinking (Lim et al., 2004, p.37).

Although there are many advantages to using an open source CMS such as Moodle, these advantages may be diluted if the course structure itself does not contain the correct “blend” or mix of resources, learning styles, delivery techniques, chronology, focus and direction (Sharpe et al., 2006). In order to ensure that course design and implementation is optimised, two specific areas need to be taken into account. These are a) the directional structure of the course, and b) selecting a learning model to follow.

2.3 Course Design for Blended Learning

2.3.1 Determining the Directional Structure of the Course

Bersin (2004, pp.55-83) identifies two general approaches to blended learning – the Program Flow approach and the Core and Spoke Approach. The program flow approach is a linear approach which creates a step-by-step curriculum that integrates several media into a chronological program or syllabus. This is rigid and highly structured and best suited to inexperienced learners who need guidance. Conversely, the Core-and-Spoke approach is designed with a single course using a single media, integrating other media or learning activities as optional or supplementary materials. Students can complete this type of course in their own time and can decide themselves which of the materials should be used. This type of approach is more suited to experienced learners.

Once a specific approach has been decided the next step for the design of a blended learning course is to decide on a model of implementation.
2.3.2 Learning Models for Implementing Blended Learning into an Established Course

A number of different models were examined to ensure the most effective implementation of blended learning. The “Criteria for Blended Learning” model (Clark 2003), “The Community of Enquiry Framework” (Garrison and Vaughan 2008), The 5 Stage Course Design Model (Salmon 2002) and the Dimensions of Blended Learning Model (Sharpe et al. 2006) were some of those scrutinised as part of this examination of literature.

2.3.2.1 Criteria for Blended Learning

In order to implement blended learning into an existing course, there must be certain questions asked and answered (Clark 2003). These include a) does the approach improve learning outcomes, b) is the blend appropriate for the audience, c) does it fit into the culture of the organisation, d) are resources available, e) will the organisation’s infrastructure support online components, f) Is the blend scaleable and sustainable.

![Figure 2.2: Criteria for Blended Learning (Clark, 2003)](image-url)
2.3.2.2 The Community of Inquiry Framework Model

When a decision is made to change the structure of an existing course, it is essential to ascertain that the new learning environments are correctly established and they help deliver the most important aspects required by the learners. For the introduction of blended learning methods, as well as the utilisation of technology, there is an expressed focus on opportunities for learners to build meaning and confirm understanding through dialogue, i.e. a collaborative constructivist process that has enquiry at its core. (Garrison and Vaughan 2008, pp.17-26).

In order to accomplish this, Garrison and Vaughan suggests that the Community of Inquiry (CoI) framework should be used to design a learning environment incorporating social presence (the principle of which is to plan to establish a climate that will encourage open communications and create trust), cognitive presence (a plan for critical reflection, discourse and tasks the will support systematic enquiry) and teaching presence (essential to bring all elements together and ensure that the Community of Inquiry is productive). This model is a more learner-centred approach, which enables learners to assume control and directly influence outcomes.

2.3.2.3 The 5 Stage Model of e-Moderating

![Figure 2.3: 5 Stage Model of E-moderating (Salmon, 2002)](image)
The Five-Stage Model of Teaching and Learning Online (Salmon 2002) as shown in figure 2.3 describes how to motivate online participants, to build learning through online tasks and to pace e-learners through stages of training and development. It is a very useful model for engaging learners in online discussions and lends itself towards the Social Care Curriculum specified in this study.

2.3.2.4 The Dimensions of Blended Learning Model

In a survey of literature on blended learning, Sharpe et al. (2006) identified eight areas or dimensions that may be spotlighted when creating a “blend”. The number of dimensions incorporated into the blend will determine how radical the blend will be. These can be subdivided as follows:

![Figure 2.4: Dimensions of Blended Learning Model (Sharpe et al. 2006)](image)

Delivery modes such as face-to-face and distance learning, web based technologies and flexible scheduling that make up the initial blend have been used for years. However, the intermediate blend shows that being introduced to learning in different locations such as workplace and classroom enables the learner to take on different roles in the learning process and also allows for the introduction of more than one pedagogic approach (e.g. collaborative or independent learning). The dimensions of focus and direction take the blended model to an advanced level by acknowledging the learner as “an equal partner in the shaping of their own learning” (Sharpe et al. 2006).
2.4 Implementation of a Blended Learning System

2.4.1 Criteria for Successful Implementation of Blended Learning

On a practical basis there are a number of areas that must be examined prior to deciding on the right blend of learning delivery methods. These include an examination of expected outcomes, targeted audience, organisational culture, availability of resources, current infrastructure and the sustainability of the blend (Clark 2003). Bersin (2004) cites eight major criteria to consider when defining a blending mix. These are program type, cultural goals, audience, budget, resources, time, learning content and technology.

A third approach to the implementation of a blended programme is suggested by Thorne (2003) who recommends a linear model of eight steps as shown below.

![Figure 2.5: Eight Step Plan for Implementation of Blended Learning (Thorne 2003)](image)

Specifically, the eight step plan as put forward by Thorne was used to determine an overall Blended Learning Strategy for the FE college in this study. This can be seen in Appendix C
2.4.2 Blended learning and Stakeholders

2.4.2.1 Learners

Learners require certain criteria to be present to achieve an effective learning environment. These criteria include the feeling of belonging to a group (social presence), quality of resources and teaching available (teaching presence) and the construction of meaning through sustained communications (cognitive presence) (Garrison and Vaughan 2008). However, what also must be taken into account is the focus on learner centred practices. The aim through the incorporation of blended learning is to make all learning facilities adaptive to individual needs (Dagger et al. 2005, pp.9-25). This form of learner centred instruction will have to take into account learner differences, e.g. ICT Skills, emotional relationships to technologies and issues around time management (Sharpe et al. 2006), as the use of technologies can compound existing differences amongst learners. Learner variance must also be addressed in order to match learner materials to learner needs. Open source resources, Web 2.0 technologies and hypermedia elements which would be built into the blend would be suitable to adapt to these variances.

2.4.2.2 Tutors

The effectiveness of a blended learning course will be determined by the skill, adaptability and commitment of the staff involved (Macdonald 2008). Studies have shown that there are many potential obstacles which may stymie the effectiveness of teacher participation. These include concerns about online teaching such as technical issues, teacher-student interaction, time requirements, lack of effective technology skills and organisational support (Bower, 2001). Their existing skills and willingness to partake in further staff development will determine the successfulness of the course. Consequently, support for the tutors in the form of workshops, seminars, resources and online communities are of the utmost importance. Tutors will have to learn how to design a blended learning strategy encompassing correct use of synchronous and asynchronous tools, choosing the correct media types and developing approaches for keeping students on track. Also, in relation to in-service training for teachers, a Blackboard survey (2007) showed teacher interest in online learning increased significantly from 7% in 2006 to 25% in
2007 for teachers who identified “online classes as their preferred methodology for their own professional development”.

Teachers may also have to adapt to a change in their traditional role of knowledge provider. Bonk & Wisher (2000) suggest that role of a teacher in a blended learning course may include that of facilitator, mediator, mentor, observer, participant, assistant and organiser amongst others.

2.4.2.3 The Organisation

The introduction of a blended learning system will be felt by all stakeholders and will therefore have an effect on the organisational culture of the college as a whole. An organisation's culture can be understood as the sum total of the assumptions, beliefs, and values that its members' share and is expressed through "what is done, how it is done, and who is doing it" (Farmer, 1990, p.8). Burman and Evans (2008) argue that leadership can have a far reaching effect on culture, while Kotter (1992) notes that top management must display its commitment in order for change to take place.

2.5 Emerging Technologies Contributing To Blended Learning Content

2.5.1 Web 2.0 resources

Web 2.0 is a term that describes the second generation of the World Wide Web. It is also known as the Read-Write web, a concept web originator Tim Berners-Lee originally had for the internet on its original inception. Web 2.0 is focused on the ability for people to collaborate and share information online. Advancements that have developed within Web 2.0 include social networking sites, wikis, blogs, RSS feeds, vlogs and podcasts, with many of these being used in education (Anderson 2007).

In the simplest technical terms, Web 2.0 is the read-write web. Compared to what we now call Web 1.0 of the internet it was solely 'read-only'. In other words, if you wanted to look up some information you went to a site and read the information. There was no place to leave a comment or to personalize the information. What you saw is what you got.

(McConville 2006 [online])
2.5.1.1 Discussion Forums

A discussion forum is an online exchange of information or messages between people about a particular subject. Users post messages that appear in chronological order or in question-answer order that can later be reviewed by the general public. Forums are normally regulated by moderators and have specific sets of protocols on how discussions should be conducted. Researchers have suggested that this type of communication can aid learning and develop language skills (Eastman and Swift 2002), (Ndon 2006). However, some studies have shown that the use of discussion forums can only enhance communication processes and writing skills when conducted in conjunction with some form of teacher/moderator regulation otherwise participants tend to revert to colloquialisms, the use of emoticons, abbreviations and simplified spelling (Love and Isles 2006).

2.5.1.2 Blogs

The term "blogs", was created by Jorn Barger in 1997 and refers to a simple webpage consisting of brief paragraphs of opinion, information, personal diary entries, or links, called posts, arranged chronologically with the most recent first (Doctorow et al. 2002). Technology now allows for multimedia and video (vlogs) to be incorporated into blog pages. Any visitor to the site can leave comments thus establishing a conversation with the original blogger. As of August 2008, blog search engine Technorati was tracking more than 188 million blogs on the Web (Technorati 2008).

2.5.1.3 Wikis

A wiki is a page or collection of Web pages designed to enable anyone who accesses it to contribute or modify content, using a simplified mark-up language. “It seeks to involve the visitor in an ongoing process of creation and collaboration that constantly changes the Web site landscape” (Wikipedia 2009). In this format, the wiki is actually in accordance with constructivist learning theory. For example, when using wikis within education, an instructor may set the initial stage or initiate interactions, but the concepts behind this medium work most effectively when the
student has autonomy over the process. However, there can be problems when using this technology.

Tracking work created in wiki spaces can become a logistical nightmare, and course management can spin out of control quickly if pages are allowed to spawn without some set of protocols to regulate or index them. Attribution of individual work can be difficult, and an environment in which students (or even non students) are invited to rework content further complicates matters.

(Lamb, 2004, p.46)

2.5.1.4 Social Networks

Social networks are virtual online communities such as Bebo, MySpace and Facebook, which grow and develop as new members invite their own personal network contacts to join the community. Although this type of interactive technology has introduced whole new elements of society to the internet, it has generated unrealistic expectations when using some of the web based teaching resources that have been locally devised.

2.5.1.5 Podcasts

Podcasts are audio recordings, usually in MP3 format, of talks, interviews and lectures, which can be played either on a desktop computer or on a wide range of handheld MP3 devices. The term Podcasting became widely used when Apple introduced iPod MP3 player and its associated iTunes software. Although the term originated around the Apple iPod, Podcasts are compatible with any MP3 player.

2.5.2 Learning Objects

2.5.2.1 Establishment of Learning Object Repositories

A learning object has been defined as “any entity, digital or non-digital, which can be used, re-used or referenced during technology-supported learning” (LTSC 2000). Learning Object Repositories (LOR’s) are databases used for storing and/or enabling the interoperability of the learning objects and are considered a key component to support authoring of educational material. They generally have well researched user interfaces and architectures that make them easy to use and permit various levels of interactivity (McLaren 2004, pp.65-71). Not all are in agreement with the advantages of LOR’s however. South (2000) argues that because learning must be
contextualised, learning objects cannot be easily reused because they are only relevant in a specific context. Berkun (2005) focuses his concerns on the fact that the non-use of standards in the creation of the learning objects can devaluate their content.

### 2.5.2.2 SCORM Compliant Software

The Sharable Content Object Referencing Model (SCORM) is a standard for the packaging and redeployment of learning objects. All SCORM compliant objects contain what is known as a manifest file which lists all files used and their relationship to each other (packaging and content). The SCORM objects are zipped into a single folder and can be easily imported into SCORM-Compatible software or a CMS such as Moodle (Goodwin-Jones 2004, p.7). This plug-and-play functionality of SCORM means that there is a much greater database of online resources that can be utilised by creators of and contributors to blended learning courses.

### 2.5.3 Instructional Design Theory Used in the Creation of Online Resources.

Before designing a learning resource, the designer should choose a specific Instructional Design Model to base their program on and help the designer to visualise the design task, breaking it down into discrete, manageable units. Instructional design models such as the Alessi and Trollip model focus on design, development and evaluation of learning materials using learning theory to evaluate the level of instruction (Alessi and Trollip, 2001). The model aims for a learner-centred rather than a teacher-centred approach to instruction so that effective learning can take place. In order to do this, every component of the instruction is determined by a series of learning outcomes, which in themselves have been developed based on an investigation of learners needs.

The Moodle CMS follows a minimalist design theory, one of the popular design trends of 2009 (designreviewer.com 2009) which allows for greater understanding of users goals (Hackos 1999, pp.17-22). Minimalism in software design is also used to minimise the obtrusiveness of the software to instruction (Ki et al. 2003).
2.6 Further Education and Blended Learning

2.6.1 Structure of the Further Education System in Ireland

The term "Further Education" embraces education and training which occurs after second-level schooling but which is not part of the third-level system. On its initial foundation, Further Education was seen as the “poor relation” of education. It incorporated numerous different awarding bodies without any official encompassing framework to determine classification of awards, assessment techniques, and course delivery methods. The sector was formalised in 2001 with the introduction of a statutory awarding body, The Further Education and Training Awards Council (FETAC) under the Qualifications (Education and Training) Act 1999. FETAC has responsibility for making awards previously made by BIM, Fáilte Ireland (CERT), FÁS, NCVA and Teagasc. It’s Learner Charter states that “FETAC formally recognises learning by making relevant quality assured awards at Level 1 – 6 at the National Framework of Qualifications” (FETAC 2009). As well as the harmonisation of the further education system under FETAC, a Higher Education Links Scheme (HELS), has been introduced with a number of places reserved by higher education institutions for FETAC applicants for entry to a range of third-level courses. Under this system HELS will map FETAC level 5 grades to the CAO points system with the maximum points available being 400 points.

As of January 2009, there were approximately 70,000 full certificates being issue to learners attending further education courses in the Republic of Ireland annually with more than 1,000 courses available in 230 schools and colleges.

The Post Leaving Certificate (PLC) programme is a further education programme that was initially introduced into the Irish education system in 1985, its remit at that time being to provide a combination of vocational training and work experience to young people who had left education on completion of secondary school. Since then, the scope of the PLC sector has expanded considerably so that now, along with their original objectives, PLC courses

… provide an important progression route to higher education, through the Institutes of Technology. They have also become an important re-entry route for older adults wishing to return to learning.

(McIver Report 2003, p. vii)
The content of a PLC course differs significantly from that of second-level programs, in that it focuses specifically on vocational elements. Frequently, there are no textbooks available for subjects being taught with the task of constructing courseware falling to the teacher. The student body is also diverse, incorporating all ages and varied backgrounds, with learner objectives covering vocational, academic and recreational areas.

### 2.6.2 Current Usage Policy of ICT in Further Education (FE)

Davis (1997) predicted that there would be opportunities for both teachers and learners when introducing e-Learning in that:

> … the computer, by providing an additional or alternative source of knowledge and information, may reduce the dependency of students upon the teacher. The aspiration is that this will liberate the teacher’s time and enhance the student’s repertoire of learning skills, enabling greater student autonomy. This would allow students to maximise their active role in learning and help to prevent teaching from being construed by teachers as a technical procedure of transmitting knowledge to passive learners.

(Davis 1997, p.15)

Information and Communications Technology (ICT) has a key role in education and its availability in every FE institute is pivotal in ensuring that all learners have a range of technological skills and accomplishments to equip them for living in the knowledge society (NCTE 2009). The effectiveness of ICT usage depends on a number of factors, for example the prevailing culture of the learning organisation, the availability of broadband and an adequate computer framework, the knowledge and experience of tutors, the support of management and the standards of pedagogical richness invoked.

However, although studies show the enormous advantages that can be attained through the integration of ICT within all areas of FE (Becta 2004), returns on the use of ICT has been restricted due to the lack of funding in the FE sector, the cap on FE places and the non-implementation of the McIver Report recommendations (2003). Also, there has been a distinct lack of policy making in relation to ICT in FE, mainly because FE in Ireland seems to be lost in a type of limbo between second-level and third-level education. Any initiatives introduced by government such as the Irish
Policy Framework IT 2000 focus upon first and second-level schools within the formal education system with other areas receiving attention only from parallel initiatives – if at all (Freeman et al. 2001, pp.1269-1274).

However, in spite of this lack of financial and policy support, FE colleges have begun to attempt to use ICT as more than just a tool but as an integral part of pedagogic practices. This transformation has been accelerated by the emerging popularity of social networking and open source software. Introduction of Web 2.0 tools, the read-write web and other online initiatives have also contributed to the practicalities of assimilating blended learning into FE courses (Godwin-Jones 2003, p.7).

2.6.3 Curriculum Being Focused on in Research

2.6.3.1 Social Studies Curriculum

The Further Education and Training Awards Council (FETAC), lists three Level 5 Social Care awards – Certificate in Community Care, Certificate in Nursing Studies and Certificate in Community and Health Services. Each of these courses is comprised of a total of 8 modules – 5 vocational, 2 general studies and 1 elective (FETAC 2009). Traditionally, these courses have been classroom based with emphasis on teacher control and learner compliance, following an objectivist methodology. ICT is incorporated into these programs, but typically technology content is taught as a separate subject, in which the primary goal is to provide basic IT skills. The implementation of blended learning could facilitate the immersion of technology through the entire course and enable the educational foundation of the course to be transformed into a more situative one.

The Social Care Institute for Excellence (SCIE) believe that e-Learning is one of the tools social care can use in workforce development and the improvement of services through the alignment of learning objects with scenario based exercises, i.e. work related exercises. “Our vision for social care is of e-Learning as 'blended learning'; that is, learning achieved by interaction with people as well as technologies. It is both a collective and an individual process” (SCIE, 2009.)
2.7 Consideration of Pedagogic Theory

2.7.1 Teaching versus Learning

In an era when constructivism is the dominant model of learning influencing second and third-level education (Cullen et al. 2003), the usual definition of pedagogy as being the “art or science of teaching” would seem to be at odds with the current emphasis being on the activity of learning. Current usage of the term actually refers to how students learn, mirroring the shift in attitude from teaching centred to learner centred education. Students learn in different ways and the approach they prefer may be an important determinant in their academic performance (Allinson and Hayes 1988). In order for students to learn as effectively as possible it is necessary for educators to create a suitable mix of learning opportunities that take into account a multitude of learning styles.

2.7.2 Learning Theory and Pedagogic Design

Mayes and De Freitas (2007, pp.13-25) put forward the supposition that rather than being completely opposing views, the various learning theories in existence should be seen as “a set of quite compatible explanations for a large range of different phenomena” (p. 15). Utilising research by Greeno et al. (1996), they identified three particular perspectives for learning theory –the associationist/empiricist perspective (learning as activity), the cognitive perspective (learning as achieving understanding) and the situative perspective (learning as social practice).

2.7.2.1 Associationist Viewpoint

Underpinned by decomposition theories put forward by Ganges (1985), this view encompasses the research traditions of associationism, behaviourism and connectionism, in that it is understood that people learn by association, initially through basic stimulus-response conditioning and later through the ability to associate an idea in a chain of reasoning in order that a complete skill can be developed. In other words, it is the theory that knowledge and skill needs to be taught from the bottom up. Although models grounded in behaviourist theories are no longer in vogue, Wilson and Mayers (2000) feels that many aspects of behaviourism have been misinterpreted.
Behaviourism was centrally concerned to emphasise active learning-by-doing with immediate feedback on success, the careful analysis of learning outcomes, and above all with the alignment of learning objectives, instructional strategies and methods used to assess learning outcomes.

(Wilson and Mayers 2000, p.8)

This theory was evident in the rapid development of multimedia and hypermedia in the 1980’s and 1990’s where the practice based resources created at the time resurrected the traditional instructionist approach of focusing on the delivery of information as its primary objective. It can still be useful in certain blended learning situations, particularly where there are problem areas in the student’s achievement in specific elements of the course (Boyle and Nichol 2003, pp.43-57).

2.7.2.2 Cognitive Viewpoint

The cognitive viewpoint is based on the idea that processes of interpreting and constructing meaning in new situations are gained through active and personal experimentation and observation rather than through the replication of ideas from the external world (Piaget, 1970). In this approach, people learn through exploration, experimentation, receiving feedback and adapting themselves accordingly. With this perspective, designing a blended learning course structure would require the understanding that students would need to be engaged in activities which focus on real world, authentic tasks and require collaboration with their peers. Sequencing of new information with the presentation of new materials and questions at appropriate times is important in constructivist pedagogies as is the notion that learners are supported by knowledgeable tutors and suitable environments. Blended learning techniques of making information available in different formats are generally in accordance with this.

2.7.2.3 Situative Viewpoint

Mayes and De Freitas (2007, p.18) noted that learners will always be influenced by the social and cultural setting in which the learning occurs. “When knowledge is seen as situated in the practices of communities then outcomes of learning involve the abilities of learners to participate in these practices successfully.” The primary
aim of situative learning is to develop the skills, attitudes and behaviours of the proposed profession or discipline through working on real world tasks. Incorporating sample case studies and observations into blended learning resources is one way in which situative learning can be simulated.

2.8 Conclusion

The above discussion has highlighted the possible benefits of integrating blended learning techniques into further education. It reviews a range of learning models that may be used to enhance delivery and analyses previous research associated with the ultimate blend, relating them specifically to the further education sector. Operational delivery of blended learning through the use of a CMS is evaluated, examining both the positive and negative evidence of its pedagogic contribution. Emerging technologies such as Web 2.0, learning repositories and SCORM compliant resources were seen to be a contributing factor to the future success of the hybrid classroom. It is also suggested in this study that integrating a blend of technology, online facilities and traditional face-to-face teaching can have the effect of leading a course towards a more learner centred, constructivist direction, a format specifically suited to the diverse student base and subject domains which make up the further education sector.
Chapter 3

Methodology

3.1 Introduction and Overview of Research

The primary aim of this study was to investigate how stakeholders in a pre-existing traditionally run course for Social Care students in a further education college would be influenced by the introduction of blended learning techniques supported by a Course Management System.

This chapter outlines the surveying of teachers’ and students’ attitudes to the introduction of an element of blended learning into an existing further education Social Care course and monitoring stakeholder’s use of the new learning regime.

An evaluation of the perceived usefulness and success of the hybrid classroom is also carried out.

3.1.1 Research Questions Investigated

The following research questions were investigated during the course of the study

1. How would an established further education course adapt its culture and practices to the implementation of a blended learning format?

2. How would the use of a Course Management System contribute to the success of a blended learning model?

3. What characterises a successful hybrid classroom and what would impede its successful implementation?

4. What elements of pedagogy should be considered in the context of a flexible learning environment?

5. What are the current technologies available to facilitate the effective implementation of a blended learning or flexible learning structure?
3.2 Research Methodology

3.2.1 Selection of Methodology

In order to select the most appropriate research methodology to be used in this study, the following conditions were examined:

- The type of research question being asked. In this instance the research question being asked are primarily “how” questions – how will an existing further education course be influenced by the introduction of blended learning methods. How and why questions are the most appropriate type of research questions on which to base case studies, experiments or histories.

  …how and why questions are more explanatory and likely to lead to the use of case studies, histories and experiments as the preferred research strategies. This is because such questions deal with operational links needing to be traced over time, rather than mere frequencies or incidence.

  (Yin 2003, p. 6)

- The requirement of control of behavioural procedures. Control of all variables cannot be guaranteed within this project and because of this, experiments have to be excluded as a research method.

- Limitation of research in further education. Historically, very little research has been carried out within the further education sector. This is in part due to the fact that it falls between second and third-level structures.

  FE in Ireland would benefit from a clear remit and direction; this has been confused by the second-level legacy, including administration and different types of learners. The teaching workforce needs support and a structure that matches requirements, rather than one designed for second-level schooling.

  (Leney et al. 2007, p.83)

- The examination of contemporary events. Histories deal with the dead past and consequently would not be appropriate for this research project. Case studies are appropriate to studying current events, but when the applicable behaviours cannot be influenced. Case studies also allow for a wider range of data collection instruments to be utilised, for example, interviews with and observations of stakeholders currently involved in the topic being researched.
3.2.2 Types of Case Study

Yin (2003) sub-divided case studies into three different types – Explanatory, Exploratory and Descriptive. In this instance an explanatory case study methodology was chosen over an exploratory or descriptive one as this type of case study seeks to link an event with its effects and is suitable for investigating causality.

3.2.3 Designing the Case Study

Yin describes the research design as “the logical sequence that connects the empirical data to a study’s initial research questions and ultimately to its conclusions” (Yin 2003 p. 20).

The case study design for this research was broken down into five specific sections:

a) An analysis of the study’s central questions, i.e. how will stakeholders in a pre-existing traditionally run course for Social Care students in a further education college be influenced by the introduction of blended learning techniques supported by a course management system?

b) Propositions to be analysed within the scope of the study – these can be generated through a deconstruction of the study’s central questions. Propositions determined include i) that the introduction of blended learning will encourage students to expand their learning strategies, ii) that the blend will allow tutors to tailor the learning content to the unique needs of the different cohorts and iii) that the experience of developing and teaching a blended course will change the way the instructor approaches her/his face to face teaching.

c) The primary unit of analysis of the case study – be it a person, place, event etc., i.e. the selected resources of the study. (Dallal 2008) describes the unit of analysis as “the smallest units that are independent of each other or the smallest units for which all possible sets are equally likely to be in the sample.” Classes are independent of each other and for this reason the class group has been designated as the unit of analysis for this study.
d) Linking data to propositions through a mix of qualitative and quantitative data analysis techniques.

e) Criteria for interpreting findings. Marshall and Rossman (1995) suggest that credibility, transferability, replicability and conformability are the four criteria that should be used when evaluating a case study.

3.3 Background to Study

3.3.1 Identification of the Problem

The study was instigated as a response to the logistical problems which are indicative of further education institutions in Ireland. Due to a continuing cycle of under funding, the FE sector is faced with a number of difficulties in the day to day running of courses. These difficulties include:

- Lack of space and accommodation.
- Very little dedicated administrative support for tutors and course coordinators.
- Increasing numbers of administrative duties being delegated to the teacher.
- Lack of day to day resources.
- Increasing student numbers in oversubscribed courses leading to dilution of already stretched resources and teacher contact hours.
- The structure of many courses involves a large element of work experience, making it difficult for students to attain all class contact hours required.

Because of these difficulties, alternative methods of course delivery were examined in order to both maximise learner involvement and achievement and ensure the most efficient usage of resources.

3.3.2 The Setting of the Research

Research was carried out in a Co Westmeath based further education college with an enrolment of 500 full-time students. Of the 500 students, 128 are enrolled in the School of Social Care. There are four specific Social Courses ongoing at the college. These are:
Within these four courses, students also have option to choose elective modules which will also result in certification in Nursing Studies and Counselling as well as Social Care. Although a general information technology module is not required to complete these courses, most students complete either a Level 5 FETAC Module in Word Processing or two Level 4 FETAC modules in Information Technology Skills and Computer Applications. The BTEC certification includes a module called Technology in Health and Care Services which includes both basic computer skills and more specialist technology relating to health and social care.

On the commencement of the study, tutors and learners were surveyed in relation to the level of online and ICT resources currently used on the Social Care courses. At the conclusion of the study evaluation forms were completed by tutors and learners to assess the perceived value of the blended learning elements that were introduced.

3.3.3 The Participants Involved

Management, practitioners and learners were involved in the study to determine the full effect of blended learning. The practitioners consisted of the eight tutors who are currently teaching on the social care courses. At the commencement of the study, some of these teachers had a good deal of technological experience while some had very little. The learner profile initially consisted of 128 students who are subdivided by course and gender as shown in table 3.1.

Once the study commenced, it was felt that the first year cohort would have more time to be involved in the research and thereafter, the first year group of 87 students were focused upon.
<table>
<thead>
<tr>
<th>Course</th>
<th>Year 1</th>
<th>Total</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>BTEC HND</td>
<td>21</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>BTEC ND</td>
<td>31</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>Care Management</td>
<td>16</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Community and Health Services</td>
<td>8</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>76</td>
<td>11</td>
<td>87</td>
</tr>
</tbody>
</table>

Table 3.1: Breakdown of Students attending Social Care Courses at FE College Focused on in Research Study - 2008/2009

3.3.4 Timescale of Study

The study was completed over a five month period from January to May 2009.

3.4 Data Collection and Analysis Techniques

Yin (2003) suggested the use of six sources of evidence when using the case study research method. These are:

- Documentation
- Archival records
- Interview of participants
- Direct observation
- Participant observation
- Physical artefacts.

Of these six sources, this study uses three – documentation, interviews and direct observation. Along with these traditional case study collection techniques, surveys and evaluations were also completed. The observational and survey data provides a degree of quantitative information, while interviews and documentation allow for collection of qualitative data.

Triangulation of the various data collected was then applied to fully evaluate and develop converging lines of enquiry from the outcomes of the study.
3.4.1 Research Tools

3.4.1.1 Questionnaires

Questionnaires created incorporating a mixture of dichotomous questions and Likert scaling were used to generate quantitative data during the study. The majority of the questions were closed although some of the dichotomous choices contained comment boxes for further remarks to be recorded if necessary. In all, 4 questionnaires were created and distributed – 2 at the commencement of the study and 2 after the tutors and students had been working with the online resources for a period of time. The following is a breakdown of the rationale behind the creation of these documents.

3.4.1.1.1 The Student Pre-Commencement Questionnaire

This document was divided into two main sections. The first section looked at the current technology usage patterns of the learner participants in the study, while the second section analysed how they may have, up to this point, used technology to enhance their learning. The main purpose of this questionnaire was to determine an overall level of technological awareness so as to create online resources which would coincide with student requirements. The majority of the questions within this questionnaire were of the closed yes/no and rating scale formats. This questionnaire can be viewed in Appendix D.

3.4.1.1.2 The Teacher Pre-Commencement Questionnaire

This questionnaire was also divided into two sections with a combination of open and closed questions being used. Again the first section looked at current technology usage to determine the level of IT awareness the tutors may possess. The second section examined current teaching practices and how, if at all, technology is integrated into the teaching process. This questionnaire enabled the researcher to estimate the level of possible disruption caused by the changes in teaching practices in order to establish a change management strategy which could be implemented in the college. See Appendix E for a copy of this questionnaire.
3.4.1.3 The Student Post Evaluation Questionnaire

The Student Evaluation Questionnaire was distributed after the learners had spent approximately 8 weeks working with the CMS. This was more detailed than the pre-commencement questionnaire, focusing on five specific areas – a) The quality of the content of the CMS, b) The quality of the learning that resulted from the use of the technology, c) The quality of communications between learners themselves and learners and tutors, d) the level of learner involvement in online activities and e) training requirements that would be considered as a prerequisite to using the technology. See Appendix F for a copy of this questionnaire.

3.4.1.4 The Teacher Post Evaluation Questionnaire

This questionnaire was issued in tandem with the Student Post Evaluation Questionnaire. It focused on four areas relevant to the teachers involved – a) Opinions of the effectiveness of blended learning and the use of a CMS, b) The effect that the changes had on the perceived quality of learning, c) Training requirements and d) How the role of the teacher may change under the new system. Appendix G shows an example of this questionnaire.

3.4.1.2 Observations

Non-participative observations of the BTEC ND class were carried out on two separate occasions. The first was on the 26th January 2009 during the initial implementation of the study, while the second observation took place on 12th March 2009 to ascertain the effectiveness of the hybrid classroom learning methodology. Each observation lasted one hour. The initial observation involved 20 students while there were 17 students present in the March observation. The purpose of these observations was:

a) to determine through observation the initial attitude of the students to the introduction of these new teaching and learning methods –attitudes which could possibly range between fear, excitement, resentment or apathy.

b) to ascertain student perceptions after having worked with the hybrid course.

Details of the Observation Checklist can be seen in Appendix H.
3.4.1.3 Interviews

One-to-one interviews were carried out with the Principal, the Deputy Principal and the Social Care Department Head. The interviews took place during the last week of April 2009. Interviews were also carried out with focus groups.

A focus group is a carefully planned and moderated informal discussion where one person's ideas bounce off another's creating a chain reaction of informative dialogue……. The product of a focus group is a unique form of qualitative information which brings understanding about how people react to an experience or product

Anderson (1996, p. 200)

A teacher focus group was selected which included eight teachers teaching on the Social Care courses. Of these eight tutors, six had limited or no experience with course management systems, one teacher had used the CMS in a teaching capacity while one had some experience both as a student and as a tutor. The timing of the focus group interview was designed so that the researcher could monitor progress, perceptions and opinions after the tutors had begun to incorporate the blended learning elements into their course. It also allowed the researcher to further analyse and discuss issues which had arisen from initial questionnaires. Appendix I shows a list of questions utilised in the focus group interview with tutors.

Six students from the BTEC Higher National Diploma course were selected as the basis of a student focus group. The focus group was used to solicit perceptions, views and a range of opinions from learners on the introduction of blended learning. A set of 6 questions elicited from questionnaire results was designed in such a way so as to flow as a natural conversation might, with the most general questions being asked first and the more specific being introduced later in the interview. The focus group interviews were tape recorded and a verbatim record subsequently transcribed by the researcher. Questions used in student interviews are detailed in Appendix J.

3.4.1.4 Discussions

Since the research project dealt with blended learning and technology in the hybrid classroom, one of the research tools used was the discussion forums on Moodle. A structured discussion called “Opinions on blended learning and working with
“Moodle” was held on the Moodle forums to gauge how the students would react to the questions in an online environment.

![BTEC Higher National Diploma in Social Care](image)

**Figure 3.1: Screen Capture of Online Discussion**

### 3.5 Analysis Techniques

#### 3.5.1 Analysis Strategy

Before commencing an analysis of the data collected, there must first be an analytic strategy that will lead to reliable conclusions. Yin (2003) lists three analysis strategies which are most suitable to case studies. These are a) relying on theoretical propositions, b) thinking about rival explanations and c) developing a case description. The general analysis strategy used during the study was to rely on the original theoretical propositions on which the research questions were based. This analysis strategy was selected in order to limit the temptation to analyse data that was outside the scope of the research questions. Also, this iterative process provides increased confidence in any findings returned.

To apply a structure to the analysis process, the researcher used the Miles and Huberman Components of Data Analysis: Data Flow model in which data analysis is defined as “three concurrent flows of activity: data reduction, data display and conclusion drawing/verification” (1994, p.10).
3.5.2 Analysis Tools

3.5.2.1 Triangulation

The need for triangulation arises from the ethical need to confirm the validity of the processes involved in the research (Stake 1995). Methodological triangulation involves the use of two or more methods of data collection in the study (Cohen et al. 2004). In this instance, triangulation was achieved through the examination of multiple sources of qualitative data – discussions, interviews, focus groups and observation, along with quantitative data garnered from the questionnaires completed.

3.5.2.2 Case Study Database

Data collected from interviews, questionnaires, observations and discussions was compiled and stored in a specifically constructed case study database. Software used to generate the contents of the database and the database itself included Surveymonke, Microsoft Excel and Microsoft Access.

3.6 Validity and Limitations of Research

Because of the naturalistic nature of this research, all efforts were taken to maximise validity by minimising the amount of bias as much as possible. For interviews and focus groups, a predetermined list of questions was constructed in such a way that their meaning was clear and there was no element of leading or interviewer bias. Questionnaires were piloted to refine their contents, wording and length while observations were carried out in an unobtrusive manner so as to limit possible differentiations in subject behaviour.
Chapter 4

Findings

4.1 Introduction

This chapter presents the findings of the research study. The data is obtained from seven sources, these being practitioner questionnaires, student questionnaires, practitioner evaluations, student evaluations, interviews, focus groups and observations. The findings have been subdivided so as to focus on each of the original research questions.

4.2 Findings by Research Question

4.2.1 Adapting an Established FE Course to Incorporate Elements of Blended Learning

4.2.1.1 Incorporating Dimensions of Blended Learning

The 8 step plan for implementation of blended learning was used in this study. A copy of this as adapted specifically to the social care curriculum in further education can be seen in Appendix C. Questionnaires, evaluation forms, focus groups and interviews initiated in this plan were used to compile findings. Teachers involved in the implementation of the blended learning programme acknowledged that having a structured plan in place made the assimilation of new teaching elements easier to accomplish.

The plan that we’ve been provided with at least gives us an idea of the direction we should be taking. Especially since this is the first time we’ve taken on this type of project.

Teacher A – Interview

After initial discussions with the college management, course co-ordinator and course tutors it was decided that the Dimensions of Blended Learning model would be used to incorporate changes that needed to be made to the current course structure. On a practical level, and in accordance with college quality assurance requirements, all tutors collaborated to create a course outline as put forward by Garrison and Vaughan (2008).
4.2.1.2 Students Perspective - Technology

Initial questionnaire results showed that 100% of students questioned owned computers, with 90.2% having access to the internet and 68% having access to broadband. This seemed to be a good indicator that the student base would not have too great a learning curve to surpass when dealing with the new technology used for blended learning. Computer expertise levels indicated more variation, with 2% representing no level of expertise, 10% a little, 40% average, 42% good and 6% excellent.

When asked about the extent to which students had used online technologies as an aid to their learning experience, 36% replied that it was used frequently while 26% indicated very frequently. It was also noted however that the scope to which the technology was used was quite limited – concentrating mainly on general internet searches to access research material. After having worked with the blended learning system, students acknowledged that asynchronous methods of communication such as threaded messages and assignment feedback were especially beneficial.

On initial login to the CMS, students had to change user profiles and passwords. Observations showed that the majority of students had little trouble in carrying out these tasks. One learner noted that the user interface was reminiscent of the type of layouts on social networking sites that 86% of learners had previously used.

4.2.1.3 Students’ Perspective – Pedagogical

Discussions that developed during the student focus group interview showed that the learners were initially unclear about the blend of learning methods that would be used in the study. On the whole, this abated when the learners became familiar with the CMS.

I was originally worried that I would end up getting stuck in the middle of assignments because I was trying to work things out by myself. However, the fact that I could now send messages to the tutor outside class times meant that I got more support. Even if the tutor didn’t reply online, they would have a note of my questions at the start of the next class.

Learner 5, Student Focus Group
Contents of questionnaires also showed concerns initially raised by students with regard to the concept of blended learning. Although 35.4% of students rated their interaction with computer technology as being very positive, only 10% strongly agreed that they would do well in an online course (Chart 4.1). Initially, 91% of students stated that they would rather have face-to-face discussions with teachers as opposed to online discussions. Examples of student’s reasons for this included:

I believe the interaction between student and teacher is always better when face-to-face, as the teacher can show a student the actual problem if there is one.

Student No 23 - Evaluation Forms

I can ask a question again and may be explained differently.

Student No 8 - Evaluation Forms

Face to face consultation helps me to get a better understanding of my lecture and will help me to ask questions that could be of help from the Tutor for which I can't get the response online.

Student No 16 – Evaluation Forms

Teachers also found that some students had reservations in using the technology.

Those students with less technical expertise found it intimidating and initially difficult to access.

Teacher D – Evaluation Forms

Some students were afraid to contribute as they felt that if they made a mistake it would be viewed by all. It took some time and effort to support and encourage these students.

Teacher A - Evaluation Forms
However, post appraisal evaluation forms completed by students on conclusion of the research indicated more of an acceptance of alternate teaching resources in conjunction with face-to-face teaching as can be seen in Table 4.1.

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The site was a very useful extra source of information and resources</td>
<td>0</td>
<td>9.1%</td>
<td>36.4%</td>
<td>40.9%</td>
<td>13.6%</td>
</tr>
<tr>
<td>Discussions on the forum helped me understand the course content better</td>
<td>0</td>
<td>13.6%</td>
<td>40.9%</td>
<td>40.9%</td>
<td>4.5%</td>
</tr>
<tr>
<td>The web resources enabled me to gain a good understanding of each lecture before attending them</td>
<td>0</td>
<td>22.7%</td>
<td>27.3%</td>
<td>45.5%</td>
<td>4.5%</td>
</tr>
<tr>
<td>The web materials enabled me to revise more efficiently</td>
<td>0</td>
<td>18.2%</td>
<td>27.3%</td>
<td>45.5%</td>
<td>9.1%</td>
</tr>
<tr>
<td>The web materials helped me perform better in exams and assignments</td>
<td>0</td>
<td>13.6%</td>
<td>45.9%</td>
<td>22.7%</td>
<td>22.7%</td>
</tr>
</tbody>
</table>

Table 4.1: Students’ Perception of the Usefulness of Alternate Learning Resources

4.2.1.4 Teachers’ Perspective

In the initial tutor questionnaire, when asked about general computer proficiency, 20% of respondents indicated little experience, 60% agreed that they were proficient in computer usage while 20% agreed that they were very proficient. This trend followed through when asked about using a computer to produce paper based
exercises and study materials. In this instance, 20% indicated that they never used the computer for this purpose, 40% indicated that it was used frequently and 40% very frequently.

Basic ICT usage in the form of MS Word notes and PowerPoint Presentations were most commonly used. All teachers surveyed agreed that they could see advantages to introducing areas of blended learning into their course.

However, no tutor had ever created resources specifically for online learning. Table 4.2 analyses the level to which teachers would have used online resources in class prior to this research.

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Never</th>
<th>Very Rarely</th>
<th>Occasionally</th>
<th>Frequently</th>
<th>Very Frequently</th>
</tr>
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<td>20%</td>
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<td>20%</td>
<td>0</td>
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<tr>
<td>Wikis</td>
<td>80%</td>
<td>0</td>
<td>0</td>
<td>20%</td>
<td>0</td>
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<tr>
<td>Quizzes</td>
<td>40%</td>
<td>40%</td>
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<td>0</td>
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<tr>
<td>Surveys</td>
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<td>20%</td>
<td>40%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SCORM</td>
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</tbody>
</table>

Table 4.2: Teacher’s Online Tool Usage Prior to Commencement of Research

The main reservations teachers identified before and during the introduction of blended learning was the initial amount of extra work that the new format would generate.

The amount of time that it takes to get paper based materials into an electronic format to actually get it up onto the system, definitely is a huge obstacle I think

Teacher C Focus Group Interview

The fear generated by lack of knowledge of the use of technology prohibited some teachers and students from using it, this meant that those using it had to double up on the format of their workload using the traditional method and the electronic method.

Teacher A, Evaluation Form

Two teachers also had reservations about the effect on attendance with the introduction of blended learning.
The students that wouldn’t be good attendees - if they think they can get the notes by logging on they won’t bother coming in. Especially if they have been pre-warned about what they are doing the following day, they mightn’t come in at all.

Teacher B – Focus Group Interview

However, other teachers noted that students would be helped by blended learning if they were absent for legitimate purposes.

If the motivated student was out for a genuine reason, it’s a great opportunity for them to then catch up. Like anything, in the wrong hands it can be misused.

Teacher D - Focus Group Interview

On completion of the research period one tutor noted that the Moodle site used enabled her to keep track of students in large classes.

When you have a lot of students you mightn’t necessarily pick up on that fact that somebody isn’t giving up all the required work, but you could see it a lot quicker on the site as its all pre-structured and well laid out.

Teacher B – Focus Group Interview

4.2.1.5 Organisational Culture in Further Education

Results from interviews with the Director and Deputy Director of the college suggest that management of the FE College sees the introduction of blended learning in a favourable light.

Within Further Education we need a blend which is modern, user friendly, positive, acceptable to both sides...If they have a proper induction and the proper training in the beginning, then I think this will be a great success.

Manager A – Interview

Management also agreed that in order for this approach to be implemented on a college wide basis, it would be necessary for the creation of a “Blended Learning Facilitation Team” who would create a strategic plan including a series of policies and procedures which could then be used as a blueprint for all courses incorporating a blend of methods.

Another area affecting organisational culture is the makeup of the stakeholders involved. Student backgrounds, age groups and ability can vary greatly within a cohort in a further education course. The age group in the Social Care course
ranged from 18 to 55 and included school leavers, workers continuing education, people returning to the workforce and learners who wished to progress to higher education. All tutors questioned agreed that because of the diverse makeup of the learners and the fact that the courses being run in further education establishments were more vocational in nature, incorporating elements of blended learning would optimise the learning process.

The fact that students are out on work placement for part of the week, and may have other responsibilities which would hinder their full attendance, ... it makes sense to incorporate other learning models in order to limit time and place restrictions.

Teacher A – Interview

4.2.2 Contribution Attributed to a Course Management System

4.2.2.1 Potential Strengths

When questioned, two teachers stated that they had previously used a CMS. Of those two, one had used it in the capacity of a student. Having spent some time working on the system all teachers involved strongly agreed that the CMS was a useful pedagogic tool with 80% choosing the increased “effective use of teachers and students time” as being one of the main benefits (Chart 4.2).

The capability of adding small chunks of content to the CMS at short notice also allowed the teachers to incorporate an element of just-in-time teaching to the social care course.

Because I can add extra resources and content relatively easily, I find that the course is now constantly evolving whereas before the content was more static.

Teacher F – Focus Group Interview

Teachers also found the CMS to be a very useful administrative tool, with 50% agreeing and 50% strongly agreeing to its effectiveness in this area.

It helps teachers be aware of the workload for students as teachers can view the workload for each unit. It allows for greater flexibility in combining units as the information becomes available to teachers.

Teacher E – Evaluation Form
It a great data base for tracking students progress in all units and making the information available to all teachers, this allows for early intervention if students are falling behind in all areas.

Teacher D – Evaluation Form

...very good administrative capabilities. Especially group email facilities to students and colleagues.

Teacher B – Evaluation Form

Initially, teachers’ perceptions of the CMS varied.

I don’t think it’s a motivating tool. I think its an operational tool. At the moment it’s doubling the workload...but I think it will relieve the workload once it is up and running.

I think it can be used as a learning tool with regard to quizzes, discussions etc, but I think it’s more of an administrative tool at the moment.

Teacher A – Interview

Chart 4.2: Benefits from Using CMS

On reflection, 75% of teachers questioned believed that the introduction of the CMS had enhanced the quality of learning and the efficiency of teaching.

Gives the student the opportunity to review information more easily and evaluate peers opinions.

Teacher D – Evaluation Form
Allows quicker response to uploaded assignments and more efficient use of class time.

Teacher F – Evaluation Form

I’m finding that I’m discovering overlaps between my subjects and other tutors’ subjects and its allowing us to minimise the work for the students. It gives us a good overview of the whole course.

Teacher C – Focus Group Interview

Having worked on Moodle, 50% of students agreed that the introduction of blended learning and Moodle had improved the quality and structure of the course, 5% disagreed and 45% did not know. Students’ responses to the effectiveness of the content and interface of the Moodle site were also mixed, as can be seen from Table 4.3. Although the majority of opinion was positive, approximately one third of respondents gave a neutral reply, suggesting that they had not made up their minds about its content or usefulness.

It was noted during learner observations however, that there was an overall positive response to the iterative quality of elements such as quizzes and online mock exams where students could re-examine their scores and suggested answers to questions and then retake the quiz to improve their score.

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The content is arranged in a clear, orderly fashion</td>
<td>0</td>
<td>0</td>
<td>18.2%</td>
<td>72.7%</td>
<td>9.1%</td>
</tr>
<tr>
<td>The content is accurate and up to date</td>
<td>0</td>
<td>0</td>
<td>22.7%</td>
<td>54.5%</td>
<td>22.7%</td>
</tr>
<tr>
<td>The content explains concepts well</td>
<td>0</td>
<td>0</td>
<td>27.3%</td>
<td>59.1%</td>
<td>13.6%</td>
</tr>
<tr>
<td>The layout design of the site is attractive</td>
<td>0</td>
<td>4.8%</td>
<td>4.8%</td>
<td>61.9%</td>
<td>28.6%</td>
</tr>
<tr>
<td>The navigation design is user friendly</td>
<td>0</td>
<td>0</td>
<td>9.1%</td>
<td>68.2%</td>
<td>22.7%</td>
</tr>
<tr>
<td>The instructions for using the site are clear</td>
<td>0</td>
<td>4.8%</td>
<td>33.3%</td>
<td>42.9%</td>
<td>19%</td>
</tr>
<tr>
<td>The feedback/answers on tasks/quizzes are good</td>
<td>0</td>
<td>9.1%</td>
<td>31.8%</td>
<td>45.5%</td>
<td>13.6%</td>
</tr>
<tr>
<td>The materials present were relevant to my course needs</td>
<td>0</td>
<td>4.5%</td>
<td>22.7%</td>
<td>50%</td>
<td>22.7%</td>
</tr>
</tbody>
</table>

Table 4.3: Students’ Opinion of CMS User Interface

4.2.2.2 Potential Weaknesses

A major concern teachers had about the introduction of the Moodle CMS was the amount of time it would take to integrate all their resources into it.
The amount of time needed to transfer paper based teaching resources into an electronic format definitely is a huge obstacle.

Teacher E - Focus Group Interview

It will be very time consuming to start with and there will be a steep learning curve for non-technical colleagues.

Teacher F – Questionnaire

However, one tutor noted that this may not actually be a long term weakness

I think that’s a current obstacle rather than a disadvantage. Once it’s actually up and running fully it won’t be a disadvantage.

Teacher C – Focus Group Interview

Teachers also had concerns over the reliance that may be placed on technology which is outside their control. One tutor noted that on a specific day it took 20 minutes to get logged onto an online quiz in class, at which stage there was not enough time left to complete the quiz itself.

One disadvantage I think would be becoming reliant on it and then the internet is down.

Teacher B – Focus Group Interview

The dependency on a fast and efficient network service caused problems when the network was down.

Teacher G – Questionnaire

One tutor also noted that the fact that this technology is being used may divide the student group into “technology haves and have-nots”, where students with their own laptops, access to broadband etc. will be able to fully avail of the opportunities presented while there will be a limiting factor for those without these facilities.

For most students, however, technology constraints were not considered a major obstacle. 90% of students questioned had access to the internet at home, while there is 100% access to wireless broadband in the college itself for anyone using the computer rooms or working on their own laptops. Of those questioned 67% used their own laptops within the college. However, the more public aspects of elements such as discussion forums were a cause for some concern.
“Some students were afraid to contribute as they felt that if they made a mistake it would be viewed by all. It took some time and effort to support and encourage these students”

Teacher B – Evaluation Form

4.2.3 The Characteristics of a Successful Hybrid Classroom

4.2.3.1 The Successful Combination of Traditional and Online Teaching – Practitioners’ Perspective

Using the 8 Stage Model of Implementation of Blended Learning, a number of areas were highlighted when deciding the best way to combine elements of traditional and online teaching. The timing of the introduction was considered to be vitally important by teachers. In the instance of this study the online element was introduced mid academic year.

I think that its effectiveness was inhibited by the introduction in the middle of the year and I also think that we as teachers were slow in adapting.

Teacher D – Focus Group Interview

One tutor felt that the integration would be much more successful if incorporated into the student induction week that runs at the start of the academic year.

Students were also less inclined to adapt to the changes in the course structure mid year.

I found it helpful but it came a bit too late in the course to adapt properly.

Student 9 - Evaluation Form

Planning of resources and training of personnel and students was also considered significant by teachers and management. 75% of teachers felt that time to prepare additional resources required for development would be the greatest barrier to successful integration while 50% felt that there would be difficulties in creating/sourcing resources. College management agreed that preparing staff will be a priority.

…through the delivery of in-service training….. we have to explain the systems and procedures that have to be put in place so that people are thinking positively.

Manager B - Interview
One tutor noted how full preparedness at the commencement of the course would be the deciding factor in the success of blended learning.

“we need to be able to incorporate active-Learning assignments such as case studies, discussions and projects to give the student extra responsibility in their learning”

Teacher B – Evaluation Forms

4.2.3.2 The Successful Combination of Traditional and Online Teaching – Students Perspective

Although the majority agreed that technology enhanced their education, students were initially wary of the possible advantages of using online learning resources.

Chart 4.3: Students’ Attitudes to Technology versus Online Training

When questioned, 91% of students stated that they favoured face-to-face discussions over online ones. However, when asked about the helpfulness of online discussions in later evaluations, 41% found them helpful and 9% very helpful.

Chart 4.4: Students’ opinion on usefulness of online resources
Online quizzes were seen as a positive reinforcement of topics learnt during class time with 39% of students using them sometimes and 43% quite often. The convenience of being able to access course notes/assignments from one central repository was also considered an improvement in the course structure.

If I’m on work placement or working on an assignment at home, it’s very useful to be able to get access to extra notes and resources on Moodle. I can also leave comments and ask questions about the assignment both with students and teachers.

Student 3 – Focus Group Interview

4.2.4 Pedagogic Considerations

4.2.4.1 Teaching Methods

Prior to the commencement of the study, teachers noted that the most common teaching methods used were group work, lectures and independent learning. E-learning was used occasionally by 20% of those questioned, frequently by 20% of those questioned, with no tutor stating that they used e-Learning very frequently.

I think all the teachers would have to sit down and see how we could adapt some of our current teaching methods so that a greater element of technology could be incorporated into them, but that the technology should only be used if it improves the course.

Teacher A – Interview

![Chart 4.5: Teaching Methods Used on Social Care Course](chart.png)
In order to effectively incorporate blended learning into existing programme teachers agreed that disciplinary differences must be recognised and training and support services put in place to reflect this.

Teachers on the social care course would be less likely to be as technically competent or up to date as, for instance, teachers on an IT course. This is one reason where there may be reservations for its implementation.

Teacher B – Focus Group Interview

After having worked with elements of blended learning, teachers were asked to rank in order of importance the role of the tutor in e-Learning. The role of Learning Advisor was seen as being the most important, with Primary Source of Knowledge being next in importance.

<table>
<thead>
<tr>
<th>Ranking Order</th>
<th>Role of Tutor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Learning Advisor</td>
</tr>
<tr>
<td>2</td>
<td>Primary Source of Knowledge</td>
</tr>
<tr>
<td>3</td>
<td>Facilitator</td>
</tr>
<tr>
<td>4</td>
<td>Technical support</td>
</tr>
<tr>
<td>5</td>
<td>Supplementary to online resources</td>
</tr>
<tr>
<td>6</td>
<td>Pastoral Mentor</td>
</tr>
</tbody>
</table>

Table 4.4: Rank order of Perceptions of Role of the Tutor in E-Learning

Both teachers and students stated that they did not feel that face-to-face teaching could be completely replaced with online courses. Until it was explained to them, the majority of both teachers and students equated blended learning with online learning. However, once the blend of pedagogical techniques had been established, users became more positive about it.

Some of the more mature students were frightened by the whole notion, but once they got onto it they actually used it more than the other students. They’re much more motivated and they’re using it for numerous purposes.

Teacher A – Interview
With BTEC the entire programme is designed so that it can facilitate independent learning so the blended learning techniques and Moodle will be great tools for that and I think that we as teachers should be using it as an extra tool to gear the students towards independent learning. I think that there is one danger and that is that it becomes a replacement for teachers because even with all the online resources I think there is a missing link if they don’t get the interaction with the teacher.

Teacher A - Interview

4.2.4.2 Training Considerations

Management and teachers agreed that a structured training and support programme for all involved would need to be put in place prior to full scale roll out of blended learning methods. These training sessions would need to be adapted to the specific discipline of the learner group involved. An element of ongoing support was also seen as something which would be necessary to ensure the success of the programme.

I think that for a training strategy to work effectively we would have to be given time to load up the resources and to get it done properly ..... Another thing is that questions arise as you are using it. ........ We would need to leave provisions to improve it as we learn it.

Teacher A – Interview

The implementation of an effective training strategy for teachers was deemed very important. 67% of teachers questioned cited that a training strategy would need to be implemented for the entire teaching faculty before a full-scale rollout of the technology involved.

“The in-service training was a great beginning however the continued use of the blended learning is the only way to become confident. Ongoing training is required to support teachers as they become more familiar with the use of the system so that they can be helped to progress further.”

Teacher A- Evaluation Form

4.2.5 Availability of Current Technologies Used to Enhance Blended Learning

4.2.5.1 Main Purpose of Using Technologies

It was agreed by teachers that the main purpose in using the technology would be to enhance the learning experience of the students, not by replacing current teaching practices but by supplementing them.
4.2.5.2 Online Learning Tools\Web 2.0 Resources

The main learning tools used as student resources in this study were websites, Moodle CMS, online notes, interactive quizzes, discussion forums, interactive assignments and presentations. Students’ usage of these can be seen in Table 4.5. The possibility of using SCORM packages such as my Udutu or eFront was discussed with tutors during in-service training sessions. It was felt that these would be very useful to design course materials that could be suited exactly to the students’ needs.

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Never</th>
<th>Very Rarely</th>
<th>Occasionally</th>
<th>Frequently</th>
<th>Very Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synchronous tools (e.g. instant messaging, chat rooms)</td>
<td>37%</td>
<td>10%</td>
<td>20%</td>
<td>18%</td>
<td>16%</td>
</tr>
<tr>
<td>Asynchronous Tools (e.g. forums, discussions)</td>
<td>63%</td>
<td>27%</td>
<td>10%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Social Networking sites (Bebo, face book)</td>
<td>10%</td>
<td>4%</td>
<td>20%</td>
<td>16%</td>
<td>50%</td>
</tr>
<tr>
<td>Online Games</td>
<td>59%</td>
<td>24%</td>
<td>12%</td>
<td>2%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Table 4.5: Students’ use of Online Tools

Teachers were also very interested in the use of online repositories where research and resources could be shared, while the availability of indexes of open source software such as SourceForge was greeted enthusiastically by all staff.

The fact that so much pre-designed information is already available is excellent. I think once teachers begin to actively tap into these resources they will see the huge opportunities that can be availed of.

Manager A - Interview

4.2.5.3 Influence of Social Networking

Prior to the commencement of the study, 66% of students stated that they used social networking sites either frequently or very frequently.

Tutors observed that familiarity with the layout of the social networking sites helped the initial transition to the CMS

They’ve all changed their profiles and some have added photos of themselves for their login etc. For that part of it they’re much faster than I am. Quite a few students have spoken to each other about what they
can do and where they can access information on Moodle so they are showing an interest.

Teacher E – interview

However, one teacher noted that students carry on using the informal language and sometimes inappropriate contexts within the environs of Moodle. This would be a drawback if resources such as threaded discussions were to be used as backup evidence for the completion of course objectives.
Chapter 5

Discussion of Findings

5.1 Introduction

This chapter examines the findings presented in Chapter 4. Again, discussion of findings has been subdivided into an exploration of the original research questions.

5.2 Discussion of Findings by Research Question

5.2.1 Adapting an Established FE Course to Incorporate Elements of Blended Learning

Changing the structure of an existing course can be a complex process and requires a well documented set of procedures before it should be undertaken. Management and staff of the college found the 8 step plan for implementing blended learning as proposed by Thorne (2003) to be effective in that its linear composition was unambiguous and user friendly. The creation of a Facilitation Team to oversee the implementation was also viewed favourably as it focused overall responsibility.

When questioned, teachers agreed that there were many exciting areas that could be focused upon when creating a blended learning programme. However, it was also felt that too many features should not be introduced all at once. By using the Dimensions of Blended Learning Model as developed by Sharpe (2006) the college was successful in creating a blend that was not overly ambitious. Using this model it was decided to incorporate only initial and intermediate levels of blend for this first study so as not to overextend resources and personnel.

Findings showed that 62% of students used online technologies either frequently or very frequently prior to the start of the study. However, this was online usage at its basic level – what Sharpe et al. (2006) called the “Initial Blend” in that the technology was being used for information gathering only. Synchronous elements such as debates and brainstorming and asynchronous technologies such as discussion forums were very rarely used by students. As noted by Ndon (2006)
these elements can enhance the learning experience through instant feedback and real-time development of ideas.

The fact that only 10% of students felt that they would do well on an online course showed the initial concerns by students in relation to the online elements which would be introduced. This reluctance is recognized by Garrison and Vaughan (2008) who notes that students need a social and teaching presence as well as a cognitive presence to achieve an effective learning environment.

Initially students did not fully grasp the concept of “the blend” believing that certain learning techniques would be introduced to the detriment of others, i.e. quality of face-to-face learning would suffer because of the focus on online elements. Research put forward by Oliver and Trigwell (2005) would indicate that this possible misconception is due to what they see as a lack of any form of defined structure within the concept of blended learning.

On completion of the study however, students were more positive in their views of the online content finding it useful as a supplementary form of learning, citing areas such as the interactive quality of posting assignments online as being very helpful. This supports Allison and Hayes views (1988) who advocate the creation of a suitable mix of learning opportunities in order to accommodate various learning styles.

The majority of teachers who took part in the study started with good IT skills. This was a necessary requirement as MacDonald (2008) noted that the effectiveness of a blended learning course would be determined by the expertise and flexibility of the staff involved.

All teachers questioned looked favourably on the concept of a blended learning approach in a format such as the one proposed by Osguthorpe and Graham (2003) where all of the strengths of the various learning styles are incorporated, but their main reservations came from the fact that they had no previous experience in creating online resources and very little experience of using Web 2.0 technologies.

The amount of time and expertise it would take to create useful resources was a limiting factor which concurs with the views of Oliver (1999) and Roserberg (2001)
who note that effectiveness of e-Learning and blended learning is restricted by badly thought out resources with no real pedagogic value.

The increase in workload due to the possible creation of a system where work was being repeated in paper based and online resources was also a cause of concern. This could be limited with the successful use of the 8 Step Implementation Plan (Thorne 2003) where effective monitoring procedures would be initiated.

Asynchronous components were also rarely used by either students or teachers at the commencement of the programme. By using the threaded instant messaging service, assignment options and student email accounts on the Moodle CMS, teachers found that they were able to keep track of learner’s progress in both assignments and general understanding of the syllabus.

Although some teachers had concerns over student attendance if resources were accessible online, studies show that students would rather preserve the social context of meeting the tutor face-to-face (Lassic-Lazic et al. 2008) than rely solely on online learning.

Management at the college agreed that the implementation of a blended learning programme is something that would be beneficial to the college and offered their support in its operation. This positive attitude corresponds to what Kotter (1992) believes is an essential component of the successful execution of organisational change in an establishment.

Something which is specific to the organisational culture of a further education organisation is the diversity of its major stakeholders, i.e. its learners. As noted, age groups, learner backgrounds and ability can vary greatly within a group. This assortment of learners lends itself to the mix of instructional methods which would be available in a blended format.

In conclusion, a detailed implementation plan must be put into operation before a full rollout of a blended learning system could be effectively introduced. Practitioners agree that only certain elements should be incorporated initially with advanced components launched at a later stage when all stakeholders are comfortable with the process. These arrangements must be made so that any initial
disquiet or confusion on the part of teachers and learners can be minimised. A concerted effort should be made to encourage all users to employ resources such as synchronous and asynchronous communication tools in order to develop a more learner centred approach to knowledge construction and to accommodate the different learning styles that may be present in a FE student cohort. However, it should be recognised that not all users would have had previous familiarity of this technology and allowances must be made for this.

5.2.2 Contribution Attributed to a Course Management System

After having used the system, all teachers were of the opinion that the introduction of Moodle would add value to the development of the course and that it would suit the syllabus being taught. This finding meets the criteria laid out by Georgiakakis’s (2005) evaluation of the selection of a correct Course Management System, which divides CMS acceptability into practical acceptability and educational acceptance.

80% of tutors questioned found the Moodle CMS to be a useful pedagogic tool. This finding corresponds with Lane (2008) who established that a CMS such as Moodle which is based on socio-constructivist pedagogy allow teachers to explore different didactic options in order to meet specific learning requirements whether it be in connection with course content or individual learner needs. The level of customisation of this open source system enabled teachers to adapt its structure and function in order to meet their particular requirements without the need for extensive training. The combination of social, cognitive and teaching presence that the CMS provides is also in keeping with the Community of Inquiry framework that Garrison and Vaughan (2008) recommend for the incorporation of blended learning.

Administrative elements of the CMS were also viewed favourably, with all teachers questioned either agreeing or strongly agreeing with its effectiveness and its perceived added value to the course. Although having stated that pedagogically the CMS was sound, the majority of positive comments from teachers actually focused on the administrative/student tracking/management side of the package. This seemed to correspond to studies by Morgan (2003) who found that the main use of a CMS can easily fall into the area of routine day to day administrative tasks to the detriment of educational development. However, because this system is open source
and easily adaptable, teachers agreed that they would be prepared to fine-tune it to meet learner requirements.

Half of students questioned agreed that the structure of the course and the opportunities for effective learning had been improved by the introduction of Moodle. The fact that only 50% of students were of this opinion may be due to the possibility that the correct mix or blend had not yet been optimised. Sharpe (2006) stated that the correct combination of resources, learning styles, delivery techniques and focus need to be established to fully benefit from the possible advantages that a CMS can afford.

Approximately two thirds of students questioned gave positive feedback on the overall layout, content and usability of the CMS site. Moodle has a number of features that are modular, including themes, activities, interface languages, database schemas and course formats. This allows anyone to add features to the main codebase in order to suit their needs. This incorporation of elements of the read/write web encourages learner autonomy and complements the constructivist values of blended learning.

The user interface is of a minimalist format with elements ordered by contexts. Hackos (1999) states that this form of design is one which promotes greater understanding of the goals of the user and the successful achievement of these.

The extra work in creating resources to be added to the CMS was seen as a problem by 75% of teachers questioned, although one tutor believed that this was an initial difficulty rather than an inherent weakness. The fact that none of the teachers involved had previously created online resources was also felt to be a barrier in the successful integration of the CMS. MacDonald (2008) noted that the effectiveness of the introduction of blended learning techniques would be determined by the amount of flexibility and dedication that could be achieved by stakeholders. This can be influenced by the combination of adequate support for tutors in the form of a feasible training strategy and the utilisation of a suitable learning model such as that suggested by Clark (2003) which would take into account required learning outcomes, appropriate mix of techniques for learners, availability of resources and maintenance and sustainability of the blend.
Technological issues also raised concerns. Teachers felt that their class plans could be easily thrown into disarray if there were problems with the server and the CMS could not be accessed. However, what teachers would also have to take into consideration is that elements of blended learning need to be used in conjunction with each other so that combinations of delivery methods are in use. This would be in accordance with the definition of blended learning as characterised by Hinterberger et al. (2004).

Although one tutor expressed concern over the possibility of dividing students into technology haves and have-nots, findings from the learners themselves suggested that this would not be a problem.

Lack of student motivation in using the CMS outside class time was also expressed as a concern by some teachers. This can be understood in that the majority of students involved would previously only have had experience of traditional classroom methods. However, as explained by Lim et al. (2004), it is necessary to introduce students to different methods of knowledge attainment in order to increase independent learning skills, learner autonomy and higher order thinking.

In conclusion, the findings in relation to the use of a CMS established that the majority of the feedback by users was positive. Teachers found it to be both a useful pedagogic and administrative tool while students found the general layout to be recognisable and intuitive, possibly due to their previous familiarity with a variety of social networking interfaces. The modular, open source design of the system allows for easy adaptability and conformance to the learner group in question. There were concerns however about the amount of extra work that the CMS may generate for teachers and also the possible over-reliance on technology that may ensue to the detriment of traditional teaching practices.

5.2.3 The Characteristics of a Successful Hybrid Classroom

The timing of the introduction of elements of blended learning was seen as a limiting factor in this specific case study. Because the CMS was introduced mid-year, students and teachers had already become accustomed to the classroom only
based format. Bersin (2004) notes that timing is one of the main factors that has to be considered when trying to run a successful hybrid classroom.

When questioned, college management agreed that the successful implementation of a course of blended learning will also be dependent on the level of integration between pedagogy and technology. Chew et al. (2009) commented on this combination when they noted that a blended learning program would be based on “Education in Technology” as opposed to “Technology in Education”. Oliver (1999) maintains that e-Learning elements must be integrated effectively and seamlessly into a traditional course as opposed to being added on without reference to the assimilation of each component. Zenger (2004) advocates an integrated instructional design and the correct situational use of teaching methods depending on specific learning situations while still preserving a social context.

The fact that 75% of teachers believed that time to prepare additional resources required for development would be the greatest barrier to successful integration, while 50% felt that there would be difficulties in creating/sourcing resources would suggest that a specific learning and training strategy must be implemented for teachers prior to the commencement of the programme. This would allow them to become familiar with the various tools available for the creation of resources such as Web 2.0 technologies, learning repositories and SCORM software. Sharpe et al. (2006) believes that this combination of technologies will then assist teachers in addressing learner variance within the student groups.

Thorne (2003) also establishes the importance of teacher training in his eight step plan for the implementation of blended learning by incorporating follow up in-service training for people involved in the creation and management of the blended learning programme.

The fact that the majority of students questioned felt that technology enhanced their education showed that the learners had a fundamentally positive attitude to computers. Their initial wariness to the development of online areas of the social care course seemed to be focused more on the possibility of losing face-to-face contact with teachers as opposed to the introduction of new technologies. In this instance, no differentiation was made by the students between online learning and
blended learning. Lassic-Lazic et al. (2006) recommended blended learning as a learning model as it preserved the social context of traditional learning that students were anxious to retain.

The transition of students’ attitudes from an initial 90% opinion that components such as online discussions were not desirable to a revised 50% opinion in favour of them after a period of usage suggests that the blend introduced was supporting learner’s needs. This would correspond with Oakes’ (2004) findings that determining the correct delivery methods to match learner needs was paramount to optimise learning.

Learners also responded positively to extra online elements such as online quizzes, interactive resources and extra course materials which could be accessed by students at their own convenience and worked though at their own pace. This element of adaptivity corresponds with Dagger’s (2005) pronouncement that blended learning should ultimately be adjustable to individual student’s needs. This utility and usability of extra learning and teaching resources also corresponds with Georgiakakis’ (2005) evaluation of course management systems which required the CMS to be easy to learn, efficient to use and contain well organised navigation systems.

Again, as with the viewpoint of the teachers, students felt that the successful integration of both traditional and online elements was hampered by the fact that the change in the course structure was introduced mid-year. Problems faced because of this change of learning model during the life of the course were in accordance with those envisaged by Zengar (2004) who noted that to create an effective learning experience for the student the course itself must have a consistent framework to build upon.

In conclusion, the timing and the way in which blended components are introduced into an existing programme will determine the level of its success. Existing prejudices may have to be addressed, reassuring users that the introduction of more delivery methods will not necessarily mean that the social context of learning will be eroded. Extra resources and training must also be made available to equip both
teachers and learners with the expertise that is needed to ensure a success of the blended learning format.

5.2.4 Pedagogic Considerations

Historically, a number of teaching methods were used in the social care course run at the college. These included group work, discussions, lectures, independent learning, workshops and a small element of e-Learning. This amalgamation of teaching techniques followed the constructivist perspective as advocated by the Social Care Institute of Excellence (SCIE). Other proponents of the constructivist approach such as Alonzo (2005) notes that a learning community should be created in order to support the construction of group learning. This can be achieved through group discussions. Discussions as a teaching method can be easily adapted to fit the blended learning environment through the use of both asynchronous methods and synchronous forums.

Also, in order to incorporate a blend of technologies into the current course format, all teachers agreed that there would have to be a collaborative effort to examine the structure of the programme and only introduce elements of technology where this change would improve the quality of learning that the students may attain. This view is in line with the concerns put forward by Oliver and Trigwell (2005) who note that when dealing with the concept of blended learning it is often the case that too much emphasis is put on the point of view of the teacher rather than the learner.

Support services would be an extremely important factor in the success of the hybrid course. This was the opinion of teachers, management and students. Designing a support infrastructure to maintain a working system would involve dealing with practical IT problems for all involved, as noted by Bersin (2004) and would also need to deal with retraining learners’ attitudes in how to take responsibility for their learning (Garrison and Vaughan 2008).

Training and support was ranked highly in teachers’ reflections on the introduction of a course of blended learning, both from the point of view of the teachers themselves and of students using the services. The structuring of such a programme for learners would need to take into consideration both the social presence principle of developing a community of enquiry and also a cognitive presence for critical
reflection and communication as suggested by Garrison and Vaughan (2008). The suggestion of combining an introduction to the blended learning structure during the student induction week at the start of the academic year would enable these principles to be achieved. Ice-breakers, introductory surveys and both face-to-face and asynchronous discussions could be implemented during this induction week. Dixon, Crooks and Henry (2006) saw these types of activities as being instrumental in establishing a learning community within a course.

Up-to-date online help resources would also facilitate a smoother transition to the blended learning model. This relates to Bersin’s (2004) view that it is critical to the success of a blended learning programme to ensure that support is always available for the learner. To facilitate this, full user manuals for both teachers and learners have been created and can be downloaded in .pdf and .docx format from the CMS. A screen capture of an example page from the Student Unnotes can be seen in Figure 5.1

67% of teachers also agreed that ongoing in-service training days on the use of the CMS and the generation of online resources would be very beneficial and contribute to the continued development of the programme. The setting up of user groups and workshops should also be considered as another form of support. Garrison and Vaughan (2008) advocate a collaborative rather than a solo approach to redesigning a course for blended learning.

In conclusion, the social care course has a complex structure and a history of utilising a number of teaching methods. Care must be taken to retain this approach and its underlying constructivist principles while introducing blended learning. Support in the form of in-service training, online help systems, workshops and mentoring would contribute to the creation of a learning community and subsequently reinforce constructivist philosophy.
5.2.5 Availability of Current Technologies Used to Enhance Blended Learning

It was agreed by teachers that the main purpose in using the technology would be to enhance the learning experience of the students, not by replacing current teaching practices but by enhancing them. Garrison and Vaughan (2008) suggest that technology is an integrating platform which connects the real and virtual educational worlds, allowing for the movement between face-to-face and online experiences depending on learner requirements. They also suggest that the selection and integration of media must be fashioned by educational goals and blending traditional and online approaches can only be successful if there is an in-depth understanding of pedagogical and learning processes.
After discussions with teachers and learners it was decided in this instance to introduce only some of the online learning tools that were available. The main learning tools focused on were websites, Moodle, online notes, interactive quizzes, forums, discussions and presentations. The introduction of other tools such as wikis, podcasts and SCORM packages such as My Udutu would be introduced on a phased basis once users became adequately familiar with previously introduced online elements. This phased introduction of online tools is in line with Sharpe’s model (2006) for introducing dimensions of blended learning through an initial, intermediate and advanced blend.

Teachers and management showed positive responses to the availability of online repositories such as the Open University repository (http://oro.open.ac.uk/) plus the Oncore Blueprint Project which maintains alphabetical lists and summaries of online repositories (http://www.oncoreblueprint.org/Repositories.htm). These repositories provide both detailed research on educational disciplines and also practical resources that may be adapted and reused by teachers in the face-to-face and virtual classroom. Resources are also available from a European association called ARIADNE (www.ariadne-eu.org) whose remit is to share knowledge and foster international cooperation in teaching that is open to the world (Figure 5.2).

The widespread availability of open source software such as that compiled on the SourceForge site as shown in Figure 5.3 also provides educators with a varied store of resources to use.

Figure 5.2: Screen Capture of ARIADNE, an online repository
Two thirds of all students questioned stated that they frequently use some form of social networking site – the most common being Bebo and Facebook. Although it was observed that previous familiarity with social networking sites helped the students in their initiation onto the Moodle CMS, it was also felt that inappropriate use of the CMS system may develop. One teacher mentioned that she noticed how students were using the CMS to have “personal chats” in the classroom, under the guise of discussing assignments. This is also noted in the research of Bugeja (2006) who suggested that there was a need to instil into students an element of “interpersonal intelligence” so that they may be able to determine the difference between appropriate and inappropriate technology usage.

In summary, findings from this study have shown that teachers do have some reservations concerning the amount of extra work that would be needed to create the online resources required for blended learning. This can be minimised by an investigation of pre-existing online repositories which provide free resources to teachers and learners. The main pitfall that could detract from the success of the blend is the use of online resources for their novelty value rather than determining which online elements which could be used to supplement and compliment pre-existing teaching methods.
5.3 Summary of Answers to Research Questions

Implementing a blended learning or hybrid structure into an existing traditional learning programme requires a great deal of forward planning and preparation. To minimise possible mistakes being made in the initial stages of inception, a detailed implementation plan incorporating timeframes, resources and training needed, along with possible contingency arrangements should be in place. The plan would determine to what extent and at what stage each element of the blended learning process should be undertaken. These arrangements must also be made so that any initial disquiet or confusion on the part of stakeholders can be minimised and so that allowances can be made for those users who would have a lesser degree of familiarity with current technology.

The general consensus was that the blended learning format was helped by the incorporation of a course management system as a pedagogic and administrative tool. The modular, open source design of the software allows for easy adaptability and conformance to accommodate the different learning styles in a FE student cohort. The use of synchronous and asynchronous tools contained within the CMS also allowed for the creation of a learning community with a cognitive and social presence, allowing learners to develop autonomy and independent thinking in their learning.

There were concerns however about the amount of extra work that the CMS may generate for teachers with regard to the creation of teaching and learning resources. The use of online repositories along with the incorporation of detailed and ongoing in-service programmes would be a way of minimising any negative effects of this. Other downsides to introducing a varied blend centre on the possibility of developing an over-reliance on and an unsuitable use of the technology to the detriment of traditional teaching methods.

The success of the hybrid programme will be determined by the extent to which the correct “blend” of pedagogic techniques has been achieved. The timing and the way in which blended components are introduced are paramount. On its introduction existing prejudices may have to be addressed, reassuring users that the introduction
of more delivery methods will not necessarily mean that the social context of learning will be eroded.

There is a wide variety of hardware and software available to teachers and school/college management who wish to implement a measure of blended learning. However, it is important to ensure that this technology would enhance the learning experience of the students, not by replacing current teaching practices but by supplementing them. Although this may lead to additional work for teachers, the availability of online repositories may go some way towards minimising the extra workload by providing free reusable resources on an extensive assortment of disciplines. SCORM compatible software can also ensure resources created can be utilised to their maximum benefit.
Chapter 6

Conclusions

Flexible or blended learning refers to learning which is provided through any combination of instructional modalities, both physical and virtual. It combines concepts, methods, processes, tools and pedagogic styles to achieve a holistic approach to teaching and learning. The amalgamation of a mixture of structured classroom-based formal lessons, informal learning through online technologies and group support and just-in-time support through the use of synchronous and asynchronous tools seeks to ensure that learner centred requirements are the main priority in the teaching/learning process.

The purpose of this case study was to examine the development, documentation and implementation of such a system of flexible and personalised blended learning into a further education setting, which could then be used to increase learner choice in diverse aspects of their learning experience. The following is a summary of the conclusions and outcomes reached having introduced the model of blended learning to a specific cohort of students over a five month period.

6.1 Implementation

- Determining the directional structure of the course through the selection of a learning model prior to course commencement will allow teachers to ascertain that the new learning environments are correctly established and they are helping to deliver the most important aspects required by the learners. Of those examined, the Community of Inquiry Model is especially suited to the further education sector as it incorporates a social, cognitive and teaching presence which combines to provide a collaborative constructivist approach to the varied learner group that make up the FE sector. The Dimensions of Blended Learning Model is also very applicable to the further education sector as it allows facilitators to only initiate areas of the blend that are suitable to the course in question.
• The selection and adherence to a detailed implementation plan is vital to ensure the sustainability of the blend. This plan should include the identification of core needs for teachers and learners, recognition of different learning styles that may be involved, a detailing of all learning objectives, a timescale for the creation and testing of the system, a plan of training for all stakeholders and an analysis of monitoring and support needed. A course outline should also be created for each specific course or cohort which will involve more day to day detail than the implementation plan.

• Timing of the introduction of change processes is vitally important. If at all possible, the introduction of blended elements should take place at the start of the course or academic year. This is more likely to ensure that learners realise the importance of utilising all aspects of learning open to them.

• When introducing blended learning techniques, it is important for teachers and management to be aware of their limitations with regard to time, resources, personnel and funding and only implement methods which would add value to the course. Adding extra “bells and whistles” for their novelty value could raise doubts that the blend will be sustainable in the long term. In the case of this study, blended learning was only introduced at an intermediate level which meant that such areas as SCORM related resources and certain synchronous tools would be added at a later stage once all stakeholders were comfortable with the new processes.

• The organisational culture of the institution must be considered before the implementation of the blended learning format. By doing this you are using a holistic approach to examine the stakeholders shared reaction to a stimulus, which should prevent misunderstandings and conflicts in the long term.

6.2 Pedagogical Considerations

• It is necessary to use the technological elements of blended learning not just as a tool but as an integral part of pedagogic practices. There is no single optimum mix between pedagogy and technology which can be applied to every situation.
Instead, each configuration will have to be determined by an in-depth examination of the learners involved and learning objectives that have to be met.

- In recent years learning has moved from a wholly collective process to one that takes into account the requirements of the individual learner. This learner centred approach is supported by proponents of constructivist and situative learning theories. Using blended learning, the teacher can create a mix of learning opportunities that take into account the numerous learning styles and learner needs that make up the student base of the further education sector.

- Studies have shown that the introduction of online learning does not have a detrimental effect on the attendance of students at face-to-face lectures. Students still want to preserve the social context or presence as described in Garrison and Vaughan’s Community of Inquiry model. Cognitive theories state that articulating the same ideas in different ways and from different perspectives lead to the development of schema or mental models that are more flexible and that facilitate more effective memory retention.

- It is important to include well thought out teaching and learning resources in a blended learning situation to achieve long term success. As well as being attractive, well designed and containing correct and up to date information, resources should be designed using socio-constructivist methodologies which promote the attainment of individual learner needs. One way this can be done is through the easy customisation features that are included in open source resources such as Moodle. Also the prevalence of pre-designed resources on online repositories such as ARIADNE and SourceForge will help practitioners with providing backup materials for students.

6.3 Technology and Resources

- A course management system (CMS) can be a very useful tool to aid the implementation and sustainment of a blended learning system. It combines both learning content delivery systems along with management and administration modules and is easily customisable to incorporate SCORM, Web 2.0 resources and contents of online learning repositories. Some studies on proprietary models
such as Blackboard and WebCT have presented findings which suggest that these CMS’ can limit pedagogic development because of the element of standardisation incorporated into them. However, other open source CMS such as Moodle allows for a greater degree of customisation and learner involvement.

- The structure of the further education system is such that teachers are very involved with administrative duties such as student and examination registration, submission of exam results, dealing with examining bodies, programme development and design amongst other things. The administrative elements of a course management system can help teachers free up their time from non-teaching areas and focus on the teaching aspect to a greater extent.

- Before the selection of a CMS consideration must be given to certain areas of practical acceptance. These include cost, compatibility, security, technical support, adaptability and usability. On the usability aspect, the CMS chosen must be efficient to use and navigate and also easy to learn. Screen design also has an important impact on the interaction with the learner. Current research suggests that minimalist design with reduce the obtrusiveness of the software to instruction.

- Blended learning gives users the opportunity to move from the read only web to the read/write web. Through Web 2.0, the traditional role of the web user as a consumer has now been transformed into one of a producer. Teachers can act not only as providers of knowledge but as facilitators who empower students to take part in critical thinking and enquiry. It provides learners with a framework for collaboration, allowing them to connect with peers and experts and contribute to the creation of resources themselves.

- There are numerous online learning repositories which provide ready made resources that can be used in blended learning. This can help teachers who would not have previously had experience in creating online teaching resources. Although these repositories are very useful, there is a possibility that many of the resources available have limited reusability because of the possibility that they may have been created for a specific curriculum or context.
6.4 Sustainability

- In order to maintain the long-term sustainability of a blended learning strategy an initial training programme should be implemented for all teachers involved. This training programme should include preliminary guidance on the concepts of blended learning, along with how to structure a course, taking into consideration learning objectives, curriculum, teaching methods and technological approaches. Along with the primary training, an ongoing series of in-service sessions should be arranged throughout the academic year or duration of the course so that teachers can be introduced to new concepts and can also find solutions to any problems that may have arisen during the execution of the course. These in-service activities can also cement teacher knowledge and capture innovative ideas inspired by the ongoing implementation of the course. A training programme should also be instigated for learners involved which could be built into existing induction schedules.

- Online help resources should be made available to all. This could be in the format of user manuals that may be downloaded in hard copy, lists of frequently asked questions that can be accessed through the course management system and email and messaging support with teachers/CMS administrator. These help resources could then reduce the general feeling of fear of the unknown by students and teachers when introduced to online elements for the first time.

- The introduction of new elements of technology should only be instigated where the change would improve the learning experience of the students by supplementing current practices. It would be counter-productive to the blend to introduce elements which, although attractive and impressive in their own right, fail to add any pedagogic value to the course. More often than not these result in learner distraction and could lead to lack of focus on the main learning objectives.

- It is necessary to maintain a structured course outline as specified in the blended learning implementation plan. This allows teachers to create backup plans which can be activated in the event of breakdowns in technology. By maintaining a smooth transition between online and face-to-face elements, learner and teacher confidence in the blended learning structure will be preserved. Incorporating
some form of a facilitation team who would have overall responsibility for the implementation of the new system should also be considered.

• Long term visions, plans, policies and structures must be taken into account in every element of the blended learning decision-making process. The support and participation of management is paramount for these policies and procedures to succeed. It will be through management that funding can be made available, teachers can be released in order to attend in-service training and the long term continuance of the blend can be achieved.
References


Open University, Open Research Online [online], available: http://oro.open.ac.uk/ [accessed 27 Jul 2009]


Appendix A
Components of Blended Learning

- Workplace Learning
  - learning on the job
  - projects
  - apprenticeships
  - shadowing
  - placements

- Face-to-Face
  - tutoring
  - coaching
  - mentoring

- Classroom
  - lectures/presentations
  - tutorials
  - workshops
  - seminars
  - roleplay
  - simulations
  - conferences

- Distributable
  - Print media
    - books
    - magazines
    - newspapers
    - workbooks
    - keeping a journal
    - learning logs

- Distributable
  - Learning media
    - audio cassettes
    - audio CD
    - videotape
    - CD-ROM
    - DVD

- Broadcast Media
  - TV
  - radio
  - interactive CD

- Online Learning Content
  - simple learning resources
  - interactive generic content
  - interactive customised content
  - performance support
  - simulations

- E-Tutoring, e-Coaching
  - e-tutoring
  - e-coaching
  - e-mentoring

- Online collaborative learning
  - email
  - bulletin boards
  - text chat
  - application sharing
  - audio conferencing
  - video conferencing
  - virtual classrooms

- Online knowledge management
  - searching knowledge bases
  - data mining
  - document and file retrieval
  - ask an expert

- The Web
  - search engines
  - websites
  - user groups
  - e-commerce sites

- Mobile Training
  - laptops
  - PDA's
  - mobile phones
Appendix B
Elements and Dimensions of Computer Supported Learning Environments

Learning
- Activities
  - Discussions
  - Collaborations
  - Interactive Communications
  - Problem-Based
  - Project-Based
  - Bifurcated
  - Independent/Resource Based
- Environment
  - Scaffolding
  - Feedback
  - Learner Control
  - Teacher as Facilitator
  - Usability
  - Learner Support
  - Course Content: Text only
  - Course Content: Multimedia
  - Flexibility

Assessment
- Format
  - Knowledge
  - Performance
- Source
  - Instructor
  - System
  - Student (Self)
  - Peer

Profile
- Origin
  - Constructionism
  - Cognitivism
  - Behaviorism
- Audience
  - Higher Education
  - Training
  - Generic
Appendix C
8 Step Plan for Implementation of Blended Learning
(Thorne, 2003) as applied to FETAC Social Care Course at
FE College used in Study

Step 1: Identify the Core learning needs for Learners and Teachers
- Learners need to use blend to eventually cover 15 BTEC Units and 9 FETAC Modules
- 3 BTEC Units to be selected for this study
- Training to be given to Learners and Teachers on CMS
- Training to be given to Teachers on creating SCORM content
- Questionnaires completed by Teachers and Learners

Step 2: Establish the level of demand/Timescale
- Initial study will focus on 87 First Year Social Care students and 8 tutors.
- Accounts to be set up on CMS
- Implement usage of program from January – May 2009

Step 3: Recognise the Different Learning Styles of the Learners
- Age range of learners 18 – 55
- Current learning techniques include lecture, group work, discussion, demonstration, workshops
- The BTEC course encourages independent learning – constructivist learning styles.

Step 4: Look Creatively at the potential of different forms of learning
- Face-to-face still a very important element
- SCORM resources examined – to be implemented in year 2 of study. Does not fall within this time frame.
- Web 2 resources/ Online discussions/Interactive quizzes/Blogs to be introduced
- Independent learning encouraged. Incorporate elements where students can work at their own pace.
Step 5: Work with current providers to identify learning objectives
- Breakdown and structure of each social care course examined.
- Objectives discussed with course-coordinator and individual tutors
- Syllabus examined
- Areas of crossover identified/mapped
- Focus on learner centred practices

Step 6: Undertake education process and develop a user friendly demo
- CMS Created – resources created include a) online quizzes, b) online assignments c) polls, d) blogs, e) forums, f) online notes and presentations, g) resource tracking
- In-service day provided for all teachers
- 2 ½ days training provided for students on social care courses
- Demonstrations carried out for teachers and students using mock and real resources

Step 7: Offer follow up in-service training
- In-service training to be provided for teachers in May and September 2009
- Training to be incorporated into Student Induction week in September

Step 8: Set up a monitoring process to evaluate effectiveness
- Teachers and students complete online evaluation forms using SurveyMonkey.com
- Focus group interviews with teachers involved in project
- Interview with course coordinator
- Forum set up for teachers to comment on CMS
Appendix D
Student Questionnaire

Introduction of elements of Blended Learning into Social Care Courses using Open Source CMS:
Pre-Commencement Student Questionnaire

Objectives of Questionnaire

Because the School of Social Care are currently examining their courses with a view to implementing certain elements of blended learning, this questionnaire has been devised to determine the relevant student’s current technological experience and usage of online tools.

Completion of Questionnaire

Please complete the following questions/statements to reflect your opinions as accurately as possible and to answer questions to the best of your knowledge. Your information will be kept strictly confidential.

General Details

Student Name: 
Course Name: 

Examining Bodies involved:  BTEC ☐  FETAC ☐

Section A: Current Technology Usage

1. Do you own a computer

   Yes ☐  No ☐

2. Do you have access to the internet

   Yes ☐  No ☐

3. Do you have access to the broadband

   Yes ☐  No ☐

4. What level of computer expertise do you feel you have?

   None ☐  A Little ☐  Average ☐  Good ☐  Excellent ☐

5. Do you use email and the internet

   Never ☐  Very Rarely ☐  Occasionally ☐  frequently ☐  Very frequently ☐
6. Have you ever used online technology as part of your learning experience

<table>
<thead>
<tr>
<th>Never</th>
<th>Very Rarely</th>
<th>Occasionally</th>
<th>Frequently</th>
<th>Very frequently</th>
</tr>
</thead>
</table>

7. Have you ever used the following online tools

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very Rarely</th>
<th>Occasionally</th>
<th>Frequently</th>
<th>Very Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Synchronous tools (e.g. instant messaging, chat rooms)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Asynchronous tools (Forums, discussions)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Social Networking sites (facebook, bebo)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Online Games</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. In general, how positive or negative an experience is it for you to work with computers?

<table>
<thead>
<tr>
<th>Very Negative</th>
<th>Slightly negative</th>
<th>Neutral</th>
<th>Slightly positive</th>
<th>Very positive</th>
</tr>
</thead>
</table>

Section B: Using Technology in Learning

9. What is your main purpose for using technology/computers?

- Check email
- Complete assignments
- Search online information
- Recreational use

10. Where do you most often use computers to access online information when doing a research project or an assignment?

- Home
- College Computer Room
- Library
- Laptop using wireless technology in college

11. How would you rate your competency in using the following technologies?

<table>
<thead>
<tr>
<th>Cannot Use</th>
<th>Less Competent</th>
<th>Competent</th>
<th>More Competent</th>
<th>Very competent</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Email for telecommunications</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
12. Please indicate your level of agreement or disagreement with the following statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I believe I would do well on an online course</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b. Students should be encouraged to use technology for homework assignments and projects</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. Students put more efforts in completing their assignments when they use computers</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d. Student learn better when technology is used in the teaching/learning process</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e. Using technology enhances learning</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tbody>
</table>

Thank you again for time spent in completing this questionnaire.
Appendix E
Tutor Questionnaire

Introduction of elements of Blended Learning into Social Care Courses using Open Source CMS:
Pre-Commencement Tutors Questionnaire

Objectives of Questionnaire

Because the School of Social Care are currently examining their courses with a view to implementing certain elements of blended learning, this questionnaire has been devised to determine the relevant tutor’s current technological experience, what they hope to transform from their existing courses, what aspects of web technology they feel would be most usefully integrated into their courses and what training requirements are needed to implement the transformation.

Completion of Questionnaire

Please complete the following questions/statements to reflect your opinions as accurately as possible and to answer questions to the best of your knowledge. Your information will be kept strictly confidential.

General Details

Tutor Name: ____________________________

Subject Area: __________________________

Examing Bodies involved: BTEC ☐ FETAC ☐

Current Technology Usage

1. Do you consider yourself a proficient computer user?

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

2. Do you use email and the internet

<table>
<thead>
<tr>
<th>Never</th>
<th>Very Rarely</th>
<th>Occasionally</th>
<th>Frequently</th>
<th>Very frequently</th>
</tr>
</thead>
</table>

3. Have you ever used online technology as part of your course resources

<table>
<thead>
<tr>
<th>Never</th>
<th>Very Rarely</th>
<th>Occasionally</th>
<th>Frequently</th>
<th>Very frequently</th>
</tr>
</thead>
</table>

4. Do you currently produce exercises and study materials on a computer

<table>
<thead>
<tr>
<th>Never</th>
<th>Very Rarely</th>
<th>Occasionally</th>
<th>Frequently</th>
<th>Very frequently</th>
</tr>
</thead>
</table>
5. Have you ever used the following online tools as a class resource

<table>
<thead>
<tr>
<th>Tools</th>
<th>Never □</th>
<th>Very Rarely □</th>
<th>Occasionally □</th>
<th>Frequently □</th>
<th>Very Frequently □</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forums</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wikis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quizzes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surveys</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCORM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Current Teaching Practice

*Blended Learning: The supplementation of traditional instructor-led learning with other electronic formats*

6. Please indicated which of the following learning and teaching methods are used in your course?

<table>
<thead>
<tr>
<th>Methods</th>
<th>Never □</th>
<th>Very Rarely □</th>
<th>Occasionally □</th>
<th>Frequently □</th>
<th>Very Frequently □</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group Work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent Learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e-learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workshops</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Do you see an advantage for introducing Blended Learning as part of your programme delivery? Yes □ No □

8. What do you think are the main reasons for you not currently using Blended Learning tools? (if more than one option is ticked please place a ranking number beside each of the options selected)

- Lack of Computer Expertise □
- Lack of Tutor Training □
- Difficulties of use of an online learning system □
- Problems in Creating/sourcing resources □
- Perceived Unsuitability of student base □
- Time to prepare additional resources required for development □
9. If blended learning was introduced to the social care course, what elements do you think would be useful in teaching your subject? (if more than one option is ticked please place a ranking number beside each of the options selected)

<table>
<thead>
<tr>
<th>Element</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online tutor support to students</td>
<td></td>
</tr>
<tr>
<td>Contacting students by email</td>
<td></td>
</tr>
<tr>
<td>Giving assignment feedback</td>
<td></td>
</tr>
<tr>
<td>Providing online tests and quizzes</td>
<td></td>
</tr>
<tr>
<td>Providing study materials e.g. lecture notes, assessment briefs, presentations</td>
<td></td>
</tr>
<tr>
<td>Tracking students</td>
<td></td>
</tr>
<tr>
<td>Online discussions and group-work</td>
<td></td>
</tr>
</tbody>
</table>

10. What do you think are the most significant potential benefits of blended learning technologies (more than one option can be selected – please put a ranking number beside each option selected)

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing the potential of users</td>
<td></td>
</tr>
<tr>
<td>Developing the skills of teachers/practitioners</td>
<td></td>
</tr>
<tr>
<td>Raise standards and promote equality</td>
<td></td>
</tr>
<tr>
<td>Promoting and supporting innovation</td>
<td></td>
</tr>
<tr>
<td>Making more effective use of teachers and students time</td>
<td></td>
</tr>
</tbody>
</table>

11. Have you have reservations for introducing blended learning into your course?  

<table>
<thead>
<tr>
<th>Reservation</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. If yes, what would your main reservations be?

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. Have you ever used a Course Management System (E.g. Blackboard, Moodle)?

<table>
<thead>
<tr>
<th>Use</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14. If Yes, which CMS was used?

<table>
<thead>
<tr>
<th>CMS</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebCT</td>
<td></td>
</tr>
<tr>
<td>Blackboard</td>
<td></td>
</tr>
<tr>
<td>Moodle</td>
<td></td>
</tr>
<tr>
<td>Other (Please State which)</td>
<td></td>
</tr>
</tbody>
</table>

15. If yes to question 13, did you find that the CMS was a useful administrative tool?

<table>
<thead>
<tr>
<th>Response</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. If yes to question 13, did you find that the CMS was a useful pedagogic tool?

<table>
<thead>
<tr>
<th>Response</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
17. Have you ever created course content to be used online?  

   Yes ☐   No ☐

18. If yes, what authoring package was used to create the content

Thank you again for time spent in completing this questionnaire.
Appendix F
Student Evaluation Form

Introduction of elements of Blended Learning into Social Care Courses using Open Source CMS:
Students Evaluation Form

Objectives of Evaluation Form

The purpose of this evaluation form is to ascertain what the opinions of students currently studying on courses run by the School of Social Care at Moate Business College are concerning blended learning and open source course management systems. This form is to be completed on the conclusion of the trial period (September 2008 – April 2009) that has been assigned to the study on blended learning at the college.

Completion of Evaluation Form

Please complete the following questions/statements to reflect your opinions as accurately as possible and to answer questions to the best of your knowledge. Your information will be kept strictly confidential.

General Details

Student Name: 
Course 

Examining Bodies involved BTEC □ FETAC □

Section 1: Quality of Content

1. With regard to the layout and content of the online materials please tick your level of agreement with each statement

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The content is arranged in a clear, orderly manner</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>b. The content is accurate and up to date</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>c. The content explains concepts well</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>d. The layout design of the site is attractive</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>
e. The navigation design is user friendly.  

f. The instructions for using the site are clear  

g. The feedback/answers on tasks/ quizzes are good  

h. The materials present were relevant to my course needs  

### Section 2: Quality of Learning  

2. Please tick your level of agreement with each of the following statements  

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The site was a very useful extra source of information and resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Discussions on the forum helped me understand the course content better</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. The web resources enabled me to gain a good understanding of each lecture before attending them</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. The web materials enabled me to revise more efficiently</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. The web materials helped me perform better in exams and assignments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. How helpful did you find the following components of the site to your learning of the subjects  

<table>
<thead>
<tr>
<th>Not helpful at all</th>
<th>Not very helpful</th>
<th>Neutral</th>
<th>Helpful</th>
<th>Very Helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Online Notes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Interactive Quizzes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Forums</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Presentations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section 3: Quality of Communications

4. Please tick your level of agreement with each of the following statements

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The site has improved the communications I had with the teacher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. I felt discussions with my classmates on the forum helped me understand the course content</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Do you prefer face-to-face teacher consultation or online discussions? Give your reasons why.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section 4: Level of Engagement

5. With regard to Computer Proficiency, please evaluate the following statements

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I felt comfortable using computers at the start of the course</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. I feel more proficient in using computers having worked with the Moodle site</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. The web materials helped me perform better in exams and assignments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. How much time did you spend working on online content. Please tick your usage level

<table>
<thead>
<tr>
<th>How often did you use the internet for learning before using the Moodle Site?</th>
<th>Less than once a month</th>
<th>Once a month</th>
<th>A few times a month</th>
<th>Once a week</th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How often do you use the internet for learning now?</th>
<th>Less than once a month</th>
<th>Once a month</th>
<th>A few times a month</th>
<th>Once a week</th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. How often do you log onto the course site</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

7. How often did you use the following activities on the site

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Quite often</th>
<th>Very often</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Write and reply to postings on the forum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Start new discussions on the forum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. View/download online lecture notes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Do online quizzes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. View/download course information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Refer to calendar items</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. Did you attend the workshop training day on the introduction of Moodle

<table>
<thead>
<tr>
<th>Response</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>No</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

9. If attended did you feel the workshop was sufficient to enable you to adequately use Moodle

<table>
<thead>
<tr>
<th>Response</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
</tbody>
</table>

10. If you answered no to the previous question, how much training would you feel confident with?

---

**Section 5: Overall impressions**

11. Do you think that the introduction of blended learning and Moodle to the course has improved the quality and structure of the course

<table>
<thead>
<tr>
<th>Response</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>No</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

12. What were your overall thoughts about Moodle – did you enjoy using it, where there advantages or were there things you didn’t like about it.

---

*Thank you again for time spent in completing this questionnaire.*
Appendix G
Tutor Evaluation Form

Introduction of elements of Blended Learning into Further Education using Open Source CMS:

Tutor Evaluation Form

Objectives of Evaluation Form

The purpose of this evaluation form is to ascertain what the opinions of tutors currently working in the School of Social Care at Moate Business College are concerning blended learning and open source course management systems. This form is to be completed on the conclusion of the trial period that has been assigned to the study on blended learning at the college.

Completion of Evaluation Form

Please complete the following questions/statements to reflect your opinions as accurately as possible and to answer questions to the best of your knowledge. Your information will be kept strictly confidential.

General Details

Tutor Name:

Subject Area

Examining Bodies involved

BTEC

FETAC

Section 1: Opinions on effectiveness of Blended Learning and usage of CMS

1. Did you find that the CMS helped you in relation to the following areas:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Course Administration</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b. Creation of Resources</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. Delivery of Content</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
2. What, in your opinion where the main strengths of using blended learning and the CMS

3. What, in your opinion where the main weaknesses of using blended learning and the CMS

4. Were there any expected objectives that were not achieved? If so, what were they?

5. Which of the following online tools did you most avail of as teacher during the period of the research?

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Very Rarely</th>
<th>Occasionally</th>
<th>Frequently</th>
<th>Very Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Forums</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Course administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Quizzes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Course notes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. SCORM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. How have your students responded to the use of blended learning?

<table>
<thead>
<tr>
<th></th>
<th>Poorly</th>
<th>Some Problems</th>
<th>Reasonably</th>
<th>Very well</th>
</tr>
</thead>
</table>

7. If problems were encountered, could you give an example?
### Section 2: Effects on quality of learning

8. Do you think the introduction of the CMS enhanced the quality of learning? If yes, in what way?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

9. What, if any, do you think are the greatest barriers to your successful integration of blended learning techniques into the Social Care courses?

<table>
<thead>
<tr>
<th></th>
<th>☐</th>
<th>☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Lack of technical training</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b. Lack of awareness of e-learning benefits</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. Difficulties in use of an online learning system</td>
<td>☐</td>
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</tr>
<tr>
<td>d. Problems in creating/sourcing resources</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e. Perceived unsuitability of student base</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f. Time to prepare additional resources required for development</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>g. Lack of understanding of what’s available</td>
<td>☐</td>
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</table>

### Section 3: Training Requirements

10. Did you feel that the in-service training day completed before the commencement of the introduction of blended learning was adequate to enable you to confidently use the CMS

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
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11. If you answered no to question 10, how much training would you feel confident with

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12. Do you think a training strategy would need to be implemented for the entire teaching faculty before a full-scale rollout of the Course Management System (CMS) is introduced

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<thead>
<tr>
<th></th>
<th>Yes</th>
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</table>
### 13. What areas of training are most necessary

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<thead>
<tr>
<th></th>
<th>Least important</th>
<th>Not very important</th>
<th>Moderately important</th>
<th>Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Content design</td>
<td></td>
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<tr>
<td>b. Usage of CMS</td>
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<tr>
<td>c. Usage of SCORM packages</td>
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<tr>
<td>d. Web design</td>
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<tr>
<td>d. Effective pedagogy for e-learning</td>
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</table>

### Section 4: The Role of the Tutor

14. Having participated in the blended learning study, what, in your opinion is the role of the tutor in e-learning? (Please list in order of importance, with 1 being the most important, then 2, 3 etc)

<table>
<thead>
<tr>
<th>Role of Tutor</th>
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<tbody>
<tr>
<td>Learning advisor</td>
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<td>Pastoral mentor</td>
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<td>Technical support</td>
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<td>Primary source of knowledge</td>
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<td>Supplementary to online resources</td>
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<td>Facilitator</td>
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<tr>
<td>Other (please specify)</td>
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</table>

Thank you again for time spent in completing this questionnaire.
Appendix H
Classroom Observer Checklist

<table>
<thead>
<tr>
<th>Student Behaviours</th>
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<tbody>
<tr>
<td>AQ: Asks Teacher Question</td>
<td>AP: Asks Peer Question</td>
</tr>
<tr>
<td>SC: Side Conversations</td>
<td>WI: Working Independently</td>
</tr>
<tr>
<td>UO: Uses other functions than those for current task</td>
<td>ID: In Difficulty with task</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity Code</th>
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</thead>
<tbody>
<tr>
<td>LO: Logging On</td>
<td>TQ: Taking Quiz</td>
</tr>
<tr>
<td>GD: Guided Demo</td>
<td>PE: Practical Exercise</td>
</tr>
<tr>
<td>DR: Downloading Resources</td>
<td>DEM: Demonstration</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No of Students</th>
<th>Activity Code</th>
<th>Time</th>
<th>Description</th>
<th>Student Behaviour</th>
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No of Students: ___________
Date: ____________________
Appendix I
List of Questions for Teacher Focus Group

Question 1: Having used the course management system Moodle, what do you feel are its main advantages and disadvantages?

Question 2: Do you think students see the course management system as a supplementary teaching resource or would they see it as an alternative to coming into college?

Question 3: Would you see it as a positive thing where students could use Moodle to pre-prepare topics for discussion in class as well as online?

Question 4: Do you think that blended learning would enhance the learning experience of the student or do you think a change in student’s attitudes is needed firstly?

Question 5: Do you see the CMS as a learning tool or an administrative tool at the moment?

Question 6: What do you think about the user interface, the layout of Moodle?

Question 7: How do you find students’ opinions of the CMS?

Question 8: What do you think about the training strategy that you would need if we are going to implement this throughout the college for next year? Do you think there needs to be more training for the teachers or even for the students?

Question 9: Do you think that the introduction of blended learning in the middle of the academic year had an effect on its implementation?

Question 10: Do you think it’s a system that can be easily customised?

Question 11: Do you think that with your students and blended learning you would be looking at a more behaviourist teaching methodology or would you be focusing on elements of constructivism?

Question 12: Do you have any other suggestions about integrating blended learning into the classroom. Is there anything even from your own subject areas that you have come across which could be incorporated alongside Moodle to enhance the learning and teaching experience?

Question 13: Is there any other observation you’d like to make with regard to blended learning?
Appendix J
List of Questions for Student Focus Group

Question 1: What was your opinion of the introduction of the blended learning structure to this year’s course?
Question 2: Did you have difficulty accessing information on the Moodle CMS?
Question 3: Did the combination of face-to-face teaching and online learning help your studies?
Question 4: What was the most useful aspect of using the blended learning format?
Question 5: Were there any negative issues involved with the blended learning format?
Question 6: Would you feel more confident working with online tools having had experience of the CMS?
Question 7: Do you think the training was adequate?
Question 8: Did you use the system outside college hours?
Appendix K
Screen Captures from Moodle Site

Login Screen for students attending BTEC National Diploma

Login Screen for students attending FETAC Social Care Course
Example of online quiz created in Moodle with instant feedback.

Example of online discussion.