

Blended Learning: An Institutional Approach for Enhancing Students' Learning Experiences

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Abstract

Since the mid 1990s, larger student enrollments and more diverse student populations have resulted in a greater emphasis on enhancing students' learning experiences in higher education. The approaches used for teaching and learning have been shown to both directly impact and substantially enhance students' learning experiences. Blended learning, which is usually viewed as a combination of face-to-face and online delivery methods, can influence students' perceptions of the learning environment and, subsequently, their study experiences, learning outcomes, and ultimate academic achievement. In this paper, the author has reported on a case study regarding the use of blended learning as a delivery method at Nottingham Trent University in the United Kingdom. The author aimed to examine the benefits that blended learning provides to students' learning experiences. The discussion in this paper has focused on lessons learned from academics in developing blended learning, and has reported students' perceptions of the blended learning environment. The data collected for this study included interviews with academics and responses from students to a questionnaire survey. The research findings formed the basis of recommendations for the development of learning and teaching practices and approaches that will enhance students' learning experiences.

Keywords: blended learning, hybrid learning, institutional approach, student learning experiences

Introduction

Enhancing student learning experiences has become more important in higher education since the mid 1990s due to increased student enrollment and diversification. Blended learning is usually viewed as a combination of face-to-face and online delivery methods, with the aim of each complementing the other. Such an approach should, therefore, influence students' perceptions of the learning environment and, subsequently, their study approach and learning outcomes. It is thus expected that there is a significant relationship between blended learning, student learning experiences, and ultimate achievement.

The aim of this paper is to examine the benefits that blended learning provides to students' learning experiences via an institutional approach, focusing on the case of a single institution, [Nottingham Trent University \(NTU\)](#) in the United Kingdom. The application of blended learning for undergraduate and postgraduate programs at NTU and the students' experiences of using blended learning have been evaluated. The benefits of using blended learning for enhancing students' learning experiences, success factors for developing blended learning modules, and students' perceptions of and attitudes toward blended learning have also been identified. In addition, the similarities and differences between academics' and students' views on blended learning have been discussed. These discussions form the basis of recommendations for the development of learning and teaching practices and approaches that will potentially enhance students' learning experiences. Finally, recommendations for future research have been detailed.

The approach presented in this paper was based on practices at NTU. The University published an updated strategic plan in 2010 that outlined the University's intention to enhance the students' learning experiences and included teaching and learning strategies as part of this plan ([NTU, 2010](#)). One of the

strategies mentioned in the plan was to include the use of blended learning as a delivery method. NTU's approach to blended learning involved utilizing a combination of traditional face-to-face and online instruction. In blended learning courses, the learning materials were mainly delivered through face-to-face interaction, but they were also available via a robust learning management system (LMS) in order to provide support and enhance after-class, online interactions for instructor–student and student–student communication.

In this paper, the author reports on the research findings of a project titled "An Evaluation of Good Practice in Blended Learning: An Examination of Student and Tutor Perspectives across Nottingham Trent University," which was funded by NTU's [Scholarship Projects for Undergraduate Researchers \(SPUR\)](#) program. SPUR is an initiative of the NTU Working Party for Research-Informed Teaching, which aims to enhance the linkage between teaching and learning. The author was the leader of this project, the aim of which was to identify good practice in blended learning as a deliberate part of the learning and teaching approach in programs at the University.

Just prior to the start of the SPUR project, the author successfully secured funding from the [Centre of Education in the Built Environment \(CEBE\)](#) of [The Higher Education Academy](#) to conduct a discipline-focused research project on blended learning. The purpose of that project was to identify good practice in blended learning in the built environment programs in order to inform future module, program, and curriculum design and development. Outcomes from the CEBE project have been reported elsewhere (Poon, Royston, & Fuchs, 2010). That CEBE project, which helped to identify the primary hypothesis addressed in this paper, aimed to identify the critical factors involved in the development of a successful blended-learning teaching method for built environment programs. These factors were identified as a result of interviews with directors of such programs accredited by the [Royal Institution of Chartered Surveyors](#) and the [Chartered Institute of Building](#) at various U.K. universities. In other words, that project had a disciplinary rather than an institutional focus. A key finding from the CEBE project was that a disciplinary focus is influenced by the reasons for using blended learning as a delivery method, as well as the type of teaching and learning activities used in blended learning programs and courses. As a result, another logical hypothesis, presented in this paper, tests whether an *institutional* focus also has an effect on the use of blended learning as a delivery method.

Literature Review

There has been systematic and extensive research into the quality of students' learning in higher education since the 1970s (Biggs & Tang, 2011; Entwistle & Ramsden, 1983; Laurillard, 2002; [Marton & Säljö, 1976a, 1976b](#); Prosser & Trigwell, 1999; Ramsden, 2003). Outcomes from this research have helped to identify the key concepts related to quality learning in higher education.

According to [Entwistle, McCune, and Hounsell \(2002\)](#), and as depicted in Figure 1, factors influencing the quality of learning achieved include course material presentation and both the type of teaching–learning environment provided as well as the students' perceptions of this environment.



Figure 1. Concepts related to the quality of learning at university (Entwistle, McCune, & Hounsell, 2002)

A common factor in these elements is university lecturers' pedagogical knowledge, which dictates the both the design of the course materials and the learning environment. [Lizzio, Wilson, and Simons \(2002\)](#)

share similar findings. They investigated "the relationship between university students' perceptions of their academic environment, their approaches to study, and academic outcomes" (p. 27), and stress the practical significance of these relationships for educators wishing to understand the impact of course design. They conclude that elements of the learning environment, which can be influenced and controlled by instructors, affect not only how students approach studying, but also the subsequent learning outcomes they attain ([Lizzio et al., 2002](#)). This echoes the seminal work of Chickering and Gamson (1987), who developed Seven Principles for Good Practice in Undergraduate Education, which are highly relevant to postgraduate courses as well. Through the Seven Principles, Chickering and Gamson posit that good practice "encourages contact between students and faculty," "encourages cooperation among students," "encourages active learning," "gives prompt feedback," "emphasizes time on task," "communicates high expectations," and "respects diverse talents and ways of learning." In order to ensure students have successful learning experiences, it is therefore important to consider these Seven Principles in conjunction with the elements and design of the learning environment.

[Williams, Bland, and Christie \(2008\)](#) define blended learning as a combination of traditional face-to-face learning and distributed learning, the latter of which "is an instructional model that allows lecturers, students, and content to be in different locations" (p. 43). A main feature of distributive learning is that the learning environment is designed to accommodate the fact that students have different learning needs and preferences. This pedagogical model encourages students to learn in an interactive and collaborative environment, and at their own pace and in their own time (Graham, 2006; Saltzberg & Polyson, 1995). [Yen and Lee \(2011\)](#) assert that "blended learning, thoughtfully combining the best elements of online and face-to-face education, is likely to emerge as the predominant teaching model of the future" (p. 138).

Substantial literature has evaluated blended learning from academics' or developers' points of view. [Banks \(2001\)](#) reports on an evaluation of the use of blended learning in a Master of Science module, *Rural Sustainability*, at Cardiff University. She identifies positive and negative aspects of virtual learning environments (VLEs, synonymous with LMSs) and critical issues for those considering the use of those environments as part of a lecturing module. According to her, the positive aspects of VLEs include value-added learning, enhanced participation, increased enjoyment of learning, ability to facilitate group work in an efficient manner, and the provision of a standardized, user-friendly interface across courses. The negative aspects identified by Banks were technophobia and time demands on the part of instructors as well as skepticism among students. [Wall and Ahmed \(2008\)](#) propose a framework using a blended learning approach for higher education institutions faced with challenges of developing and deploying continuing professional development in the construction industry. The framework can be used by continuing education providers to determine the most suitable combination of media for a blended learning intervention, taking into consideration learner and instructor characteristics, the desired instructional goals and strategies, the nature of the learning environment, and the availability of resources.

Research has also been published ([Baldwin-Evans, 2006](#); [Harris, Connolly, & Feeney, 2009](#); [Mitchell & Honore, 2007](#); [Stacey & Gerbic, 2008](#)) in which the key factors for successful implementation of blended learning are discussed. Among these key factors are the availability of financial resources, support from senior management, and access to personnel with the requisite technological capabilities and skills. Garrison and Vaughan (2008) describe best practices for blended learning implementation in higher education. They underscore the need for a seamless connection between the face-to-face and online components in order to ensure a truly blended learning environment. Moreover, they advocate the superimposition of various other pedagogies, as appropriate – lecture, problem-based learning, just-in-time teaching, cooperative learning, and others – on the blended framework.

There is considerable evidence attesting to the fact that blended learning can positively impact student achievement. Research has shown, for example, that blended learning can foster a decrease in student attrition and facilitate an increase in the passing rate for student examinations ([López-Pérez, Pérez-López, & Rodríguez-Ariza, 2011](#)). However, other studies point to the need for a more nuanced understanding of how blended delivery affects student learning. Ginns and Ellis (2007) explored the relationships between students' perceptions of the e-learning environment, their approaches to study, and their academic performance. They found that students differed widely in their perceptions, resulting in variations in study approaches and grades – students with positive perceptions of the e-learning environment tended to obtain better grades, and vice versa. [O'Toole and Absalom's \(2003\)](#) study aimed to discover whether providing course materials on a University intranet had a positive effect on students' attainment of the intended outcomes. Their investigation revealed that the provision of the materials in electronic format in and of itself is of limited benefit; in fact, it can have an adverse effect on student performance due to misplaced confidence in the media through which the material is delivered.

Definitions of "Blended Learning"

There has been much discussion over the term "blended learning" in recent years, yet there continues to be no agreed-upon single definition ([Bliuc, Goodyear, & Ellis, 2007](#); [Green et al., 2006](#); [Jonas & Burns, 2010](#); [Marsh, Pountney, & Prigg, 2008](#); [Sharpe, Benfield, Roberts, & Francis, 2006](#); [Stacey & Gerbic, 2008](#)). There is, however, a common theme presented in the literature – the recognition of some combination of virtual and physical environments. This common theme is evident as Graham (2006) describes blended learning as the convergence of face-to-face settings, which are characterized by synchronous and human interaction, with Information and Communication Technology (ICT) based settings, which are asynchronous, text based, and involve humans operating independently. It continues as Mason and Rennie (2006) extend this definition to include "other combinations of technologies, locations or pedagogical approaches" (p. 12). It carries on as Garrison and Vaughan (2008) define blended learning as "the thoughtful fusion of face-to-face and online learning experiences" (p. 5) and emphasize the need for reflection on traditional approaches and for redesigning learning and teaching in this new terrain. It persists as Littlejohn and Pegler (2007) observe that blended learning is a useful approach because it changes the focus of learning design by shifting the emphasis from simply considering the face-to-face and online environments to the design of issues, such as considering the process and synergy of blending between online and face-to-face environments.

The theme continues to be threaded throughout the literature. Singh (2003) describes blended learning as a combination of delivery methods that complement one another and work to support students' learning. [Driscoll \(2002\)](#) identifies four different concepts of blended learning, which [Oliver and Trigwell \(2005\)](#) summarize as follows (p. 18):

- combining or mixing web-based technology to accomplish an educational goal;
- combining pedagogical approaches (e.g., constructivism, behaviorism, cognitivism) to produce an optimal learning outcome with or without instructional technology;
- combining any form of instructional technology with face-to-face instructor-led training; and
- combining instructional technology with actual job tasks.

[Sloman \(2007\)](#) argues that blended learning should not simply be considered in terms of delivery and technology. According to him:

If the term blended learning is to have longevity ... we must extend its use beyond technology. It must be as much about varying learning methodology as it is about training delivery. We must understand more about what motivates learners, what support they need and how these supportive interventions can take place in practice. Only with this understanding we can get the "blend" right. (p. 318)

Therefore, blended learning is itself a blend. It is a mix of pedagogical approaches that combines the effectiveness and the socialization opportunities of the classroom with the technological enhancements of online learning ([Dziuban, Hartman, Juge, Moskal, & Sorg, 2006](#)). Contained within the mix is a paradigm change in which the emphasis shifts from teaching to learning ([Nunan, George, & McCausland, 2000](#)). In order to enhance this shift, a blended learning course should also increase the interaction between the instructor and students, and also among students. It should furthermore enhance the mechanism for integrating formative and summative feedback in order to boost students' learning experiences ([Yen & Lee, 2011](#)). Therefore, blended learning is a fundamental redesign of the instructional model with a shift from lecture-centered to student-centered instruction where students become active and interactive learners.

Blended learning can also be considered good practice. In other words, the use of blended learning as a delivery method can make manifest two of Chickering and Gamson's (1987) Seven Principles, which are "encourage students to engage in active learning" and "encourage contact between students and faculty." The use of blended learning can also potentially elicit another good practice principle, which is to give prompt feedback, as blended learning usually involves online interaction, which can facilitate feedback. However, whether prompt feedback occurs depends on how frequently the instructors and students use the relevant online platform.

Benefits of Blended Learning

Blended learning benefits students and institutions. It facilitates improved learning outcomes, access flexibility, a sense of community, the effective use of resources, and student satisfaction.

Several research studies have demonstrated that courses using blended learning as a delivery method contribute to improved learning outcomes for students ([Boyle, Bradley, Chalk, Jones, & Pickard, 2003](#); [Dziuban et al., 2006](#); [Garnham & Kaleta, 2002](#); [Lim & Morris, 2009](#); [O'Toole & Absalom, 2003](#); [Twigg, 2003a](#)). Twenty out of the thirty institutions which participated in research funded by the Pew Foundation in the United States reported having improved learning outcomes, and eighteen of the participating institutions demonstrated a decrease in student drop–failure–withdrawal (DFW) rates ([Twigg, 2003a](#)). [Twigg \(2003a\)](#) also reports that course redesign has resulted in students achieving higher grades, greater knowledge, and greater understanding of course concepts. [López-Pérez et al.'s \(2011\)](#) research on students' performance in a Spanish university had similar outcomes. Their study shows that the use of blended learning has a positive effect in reducing dropout rates and improving examination marks.

Another key benefit of blended learning is the increased flexibility of access to learning that reinforces the student's autonomy, reflection, and powers of research ([Chambers, 1999](#); [Lebow, 1993](#); [Radford, 1997](#); [Sharpe et al., 2006](#); [Tam, 2000](#)), and facilitates the review and control of learning ([Osguthorpe & Graham, 2003](#)). Blended learning modules have a combination of face-to-face and online components. This format allows learners who live some distance from a university to enroll in a program. In addition, the online components benefit other learners by allowing them to work whenever and wherever they prefer, as they can access the Internet without making the journey to campus. It also enhances students' ability to control their own pace of learning. Via blended learning, students are able to catch up on a course if and when they can. ([Garnham & Kaleta, 2002](#); [Owston, Wideman, Murphy, & Lupshenyuk, 2008](#); [Smyth, Houghton, Cooney, & Casey, 2012](#)).

[Garrison and Kanuka \(2004\)](#) explored some of the benefits of using blended learning in higher education institutions. They describe how blended learning has transformative potential, offering institutions the opportunity to embrace technology, encourage a community of inquiry, and support active and meaningful learning. [Owston et al. \(2008\)](#) looked at professional development in schools of education and describes how blended learning has the ability to foster a professional learning community and yet still allow for the development of social cohesion due to the inclusion of a face-to-face component.

Cost and resource effectiveness is also considered an advantage of blended learning ([Graham, 2006](#); [Twigg, 2003b](#); [Vaughan, 2007](#)). Costs for institutions are saved as developed materials can be placed online and re-used for an extended period of time. Furthermore, the size of the cohort can be increased and the number of classes decreased. The use of blended learning can reduce the staff and student classroom contact time and consequently save on staffing costs. Though cost savings should clearly be considered a valid benefit of blended learning, many authors writing on this topic have maintained that cost saving should not be considered as the primary purpose for blended learning adoption, and that improved learning outcomes should still be the main rationale for implementation ([Mitchell & Honore, 2007](#); [Trasler, 2002](#)).

Blended learning also promotes student satisfaction. Blended learning enables the students to become more motivated and more involved in the learning process, thereby enhancing their commitment and perseverance ([Donnelly, 2010](#); [Sharpe et al., 2006](#); [Wang, Shen, Novak, & Pan, 2009](#); [Woltering, Herrler, Spitzer, & Spreckelsen, 2009](#)). Staff and students have both reported that the online components of blended learning encourage the development of critical thinking skills. Student satisfaction has also been reported to be higher in blended learning courses compared with purely face-to-face courses ([Dziuban et al., 2006](#); [Owston et al., 2008](#); [Twigg, 2003a](#)). Therefore, blended learning is beneficial to both students and institutions.

Challenges of Blended Learning

The use of blended learning can pose challenges for students and universities. Unrealistic expectations and feelings of isolation are challenges for students, while universities are challenged by time and support issues. Both students and institutions encounter challenges presented by technology issues.

[Vaughan \(2007\)](#) cites studies suggesting that students enrolled in blended courses can sometimes have unrealistic expectations. The students in those studies assumed that fewer classes meant less work, had inadequate time management skills, and experienced problems with accepting responsibility for personal learning. Students in such courses have also reported feeling isolated due to the reduced opportunities for social interaction in a face-to-face classroom environment ([Smyth et al., 2012](#)).

Having difficulty with more sophisticated technologies is another challenge for implementing blended learning. This was particularly the case where students had to rely on slow (e.g., dialup) Internet connections ([Smyth et al., 2012](#)). Poor Internet connectivity has been reported to inhibit students' ability to engage in online discussion ([King, 2002](#)) and creates considerable frustration ([Hara, 2000](#); [Hara & Kling, 1999](#); [Welker & Berardino, 2005-2006](#)), which can negatively impact learning.

Another challenge related to technology is the pervasive access the technology affords. Although the flexibility to learn online and from a distance provided by blended learning is perceived as advantageous, the pervasive access may also be invasive to learners' personal lives. For some, the online component results in more time devoted to study and less to personal concerns. This can lead to participants feeling overwhelmed and tired ([Smyth et al., 2012](#)).

Just as time concerns are a challenge for students, the first challenge for implementation of blended learning for universities is time commitment. [Johnson \(2002\)](#) estimates that planning and developing a large-enrollment, blended learning course usually takes two to three times the amount of time required to develop a similar course in a traditional format.

The other challenge for universities is the lack of support for course design. In order to ensure a successful blended learning experience for students, there must be university support for course redesign, which may involve deciding what course objectives can best be achieved through online learning activities, what can best be accomplished in the classroom, and how to integrate these two learning environments ([Dziuban et al., 2006](#)).

The final challenge for universities implementing blended learning is the difficulty in acquiring new learning technology skills, such as how to foster online learning communities, facilitate online discussion forums, and manage students ([Dziuban & Moskal, 2013](#); [Voos, 2003](#)). As for students, technology can also be a challenge for universities implementing blended learning.

Table 1 displays a summary of the benefits and challenges associated with blended learning.

Table 1. *Summary of the benefits and challenges of blended learning*

| Benefits | Challenges |
|--|--|
| <ul style="list-style-type: none"> • Enhanced student learning outcomes • Greater flexibility for students and teachers • Improved autonomy, reflection, and research skills • Reduced student withdrawal rate • Ability to foster a professional learning environment • Potential cost and resource savings | <ul style="list-style-type: none"> • Unrealistic student expectations • Student-perceived isolation • Technological problems for students • Invasiveness into other areas of life • Time commitment • Technological problems for institutions • Lack of support for course redesign • Difficulty in acquiring new teaching and technology skills |

Success Factors for Blended Learning

Success of blended learning is defined by [Stacey and Gerbic \(2008\)](#) as "practice which promotes achievement of high-quality learning outcomes and positive student learning experiences, with high teacher satisfaction and a reasonable workload that allows staff time for research and scholarship" (p. 965). Just as blended learning affords benefits and presents challenges for students and institutions, as students and institutions meet challenges, they give rise to success. As students learn to manage their expectations and feelings of isolation, universities overcome time and support issues, and students and institutions embrace technology challenges, success emanates. The student and institutional factors affecting the success of blended learning as identified in the literature are outlined below.

- *Student factors.* Consideration of learners' needs and management of their expectations and level of understanding is important for the development and implementation of successful blended learning modules ([Bliuc et al., 2007](#); [Harris et al., 2009](#); [Mitchell & Honore, 2007](#)). Evidence from the literature also suggests that it is important to take account of learners' motivation ([Stewart, 2002](#)), to ensure learner readiness ([Baldwin-Evans, 2006](#)) and learners' ability to cope with independent learning ([Tabor, 2007](#)). Mitchell and Honore (2007) see the attitude and motivation of learners as particularly significant when virtual learning (e-learning) is involved, as those factors affect acceptance and participation. It is important to manage students' expectations, especially the idea that fewer face-to-face classes mean less work. In fact, students must be encouraged to take more responsibility for and autonomy over their learning ([Tabor, 2007](#); [Vaughan, 2007](#)).

Futhermore, blended learning can only be successfully implemented if the learners have sufficient knowledge of, and are ready to use, the newly introduced technology. Learners must be

trained and equipped to navigate the information and communication technology used in blended learning ([Beadle & Santy, 2008](#); [Harris et al., 2009](#)).

- *Institutional factors.* The first institutional factor required for successful blended learning is the allocation of dedicated services to support and assist learners and facilitators throughout the development and use of modules. This includes spending resources on communication to encourage instructors and prospective end-users to become actively involved and fully aware of blended learning initiatives ([Garrison & Kanuka, 2004](#); [Harris et al., 2009](#)). The emphasis in this communication should focus on the learning and the associated outcomes rather than on the use of technology only. It should aim to encourage communication between users and developers, and help those involved to take full advantage of the resources available.

However, just as students must adapt to blended learning technology, instructors must be taught to use the technology from the user end in order to effectively facilitate student learning. The attitude, readiness, and technological skills of the course facilitators are equally important, as all of these factors affect how successfully they use, develop, and update the technology-based tools and resources in operation ([Beadle & Santy, 2008](#); [Harris et al., 2009](#)).

There are also technological requirements that must be met for blended learning to be successful. [Stewart \(2002\)](#) suggests that course content and learning approaches be evaluated for accessibility, with consideration of bandwidth, firewalls, and connection speed, while [Childs, Blenkinsopp, Hall, and Walton \(2005\)](#) suggest that easy and regular access to technology for both facilitators and learners is a necessary prerequisite for successful delivery of e-learning. Although technology is obviously important for blended learning implementation, due attention must be paid to [Sloman's \(2007\)](#) recommendation that the emphasis should be shifted from a purely technological focus towards teaching and learning methods and styles. Technology should be considered merely as a means to facilitate student learning.

Much research has focused on different aspects of blended learning. [Halverson, Graham, Spring, and Drysdale \(2012\)](#) have conducted an extensive review of the publication trends in blended learning over the last 10 years. They identify the most frequently cited blended learning publications in their list of the top 50 articles, the top 25 book chapters, the top 10 books, and the top 15 non-academic publications. Out of the 100 most-cited publications, none of the studies had an institutional focus. One of their findings is that there has been limited empirical research; instead, the focus has been on definitions, models, and the potential of blended learning. This research aims to fill those gaps and to report on an empirical study of academics' and students' views of blended learning within a single U.K. institution. The paper focuses on examining the benefits that blended learning affords in terms of supporting and enhancing students' learning experiences. In addition, it explores students' perceptions of blended learning. The findings of the research attempt to identify whether institutional factors have an impact on the implementation of blended learning and how and to what extent those impacts are felt.

Method

The data for this research were collected in 2011 through semi-structured interviews with academics conducted by a NTU undergraduate SPUR award recipient and a questionnaire survey of students. Nine academics who were program leaders at NTU were interviewed. The academics are referred to in this paper as Academic A to Academic I. The interviewees were from the diverse disciplines of property investment, environment management, construction management, building technology, education, political science, bioscience, law, and sports psychology. Their years of experience ranged from five to 29, resulting in an average teaching experience of 19 years. Their experience using various forms of blended learning, including online learning, ranged from one year to more than 20 years.

The interviewed program leaders were recommended by the learning and teaching coordinators of individual schools at NTU and are tutors (instructors) who manage and have a reputation for the successful implementation and use of blended learning. It was expected that insight into good practice procedures in the development and implementation of blended learning would be gained from conversations with these individuals.

The semi-structured interviews took place in the interviewees' offices. The interviews lasted between 45 and 90 minutes. Interviews began with the collection of professional background information and proceeded to a series of key questions. Questions were divided into four sections: knowledge and experience of blended learning, design and use of blended learning, resources needed for blended learning, and evaluation of the use of blended learning. Finally, interviewees were given the opportunity to

add further comments. The interviews were recorded, transcribed, and coded with similar themes identified.

The interviewed academics were requested to send an online questionnaire to their students to collect the students' views on blended learning. Two-hundred-and-sixty questionnaires were returned. The majority of respondents (50%) were first-year undergraduate students. The remaining respondents were second-year undergraduate (19%), third-year undergraduate (10%), fourth-year undergraduate (6%), and postgraduate (15%) students. Around 200 respondents (80%) were full-time students. The predominant age group of the respondents (80%) was 18 to 25 years old; only 15% of students were between 26 and 35 years old, and 5% were over 35 years old.

The student questionnaire was adopted from the student survey questionnaire shown in Appendix 5 of Garrison and Vaughan's (2008) book, *Blended Learning in Higher Education: Framework, Principles, and Guidelines*. The questionnaire was constructed using [SurveyMonkey](#). The survey began with the collection of background information, such as year of study, mode of study, and age. The key questions were divided into four sections: the first section queried students' experiences of blended learning; the second looked at students' overall satisfaction with blended learning; the third asked the students to comment on blended learning; and the last section asked students to compare blended learning with face-to-face learning. Please see the Appendix for a copy of the student questionnaire.

Results

Application of Blended Learning to Academic Programs at NTU

Blended learning has been widely used in undergraduate and postgraduate programs in NTU. The most common types of programs mentioned by the interviewees were part-time courses and distance learning courses, in which the majority of students participate off-campus. Blended learning is also a popular delivery method for courses that involve cooperation between NTU and other institutions. Examples include regional [Foundation degree](#) courses delivered in various further education colleges in Nottinghamshire, a Master's degree program in property investment and management delivered in Central and Eastern European countries, and virtual teaching training schools for training secondary school teachers. Flexibility is a vital element of these programs as they involve several delivery partners based in different places as well as students who primarily study off campus. NTU and other U.K. higher education institutions share common rationales for choosing blended learning as a delivery method, such as flexibility, efficiency, supporting diversity, enhancing the campus experience, and operating in a global context ([Sharpe et al., 2006](#)).

Identification of Successful Factors for Developing Blended Learning Modules

The academic interviewees identified availability of resources as the most important factor for success when developing blended learning modules. The two most mentioned resources are information technology and human resources, which include the resources to develop the platform for delivering blended learning, such as the LMS at NTU, and its continuing development and maintenance. Human resources are pivotal to developing a blended learning approach and make it fit for use in various disciplines. Many of the interviewees commented that the initial development of blended learning requires a great deal of upfront resources, including financial resources, time, effort, and expertise. Ongoing resources are also needed throughout the delivery of the module in order to maintain a high standard of delivery and support to users. In addition, support from senior managers is also an important prerequisite for the allocation of resources. Interviewee 8 commented that *"support from the senior manager is vital for the development of blended learning as it requires their allocation of resources and their support on the alternative delivery approaches. Without it, any recommendations on the use of blended learning are just not feasible."*

The interviewees also held that ensuring the suitability of blended learning as a delivery method for the identified courses was essential to successful course development. Interviewee 9 used blended learning primarily because his course was offered to students in Central and Eastern European countries. The courses were delivered mostly online with occasional classroom contact. The teaching materials were available online, and the lecturers communicated with students on the Internet. As the nature of the course required much Internet communication, blended learning was a logical delivery method choice. In this situation, the use of blended learning as a delivery method can indeed be used to encourage "contact between students and faculty" – one of Chickering and Gamson's (1987) Seven Principles. It also facilitates the principle "give prompt feedback." Blended learning affords the implementation of this principle as described by Chickering and Ehrmann (1996) via e-mail interactions, discussion board responses, and course wiki contributions.

Benefits of Blended Learning

Based on the findings of this study, the primary benefit of using blended learning is course flexibility. This flexibility accommodates students with varied learning styles, non-traditional course access requirements, and non-traditional course pacing preferences. Interviewee 1 used blended learning because of the diverse background of the students in his course. A high proportion (i.e., more than 50%) of his student population was composed of mature students, many of whom had just recently returned to study after years of full-time employment. Unavoidably, they have different preferences and attitudes towards learning than their younger classmates. Also, most of the mature students were still working either full time or part time; therefore, flexibility is an important consideration for Interviewee 1. This finding reinforces the pedagogical characteristics of blended learning as mentioned in existing literature, including the work of Graham (2006), Saltzberg and Polyson (1995), and [Yen and Lee \(2011\)](#).

In addition, the interviewees commented on the importance of combining mixed delivery methods for teaching with a variety of teaching styles and online direction and documentation. Interviewee 5 illustrated this point further. He delivered materials with a more conceptual and philosophical focus, such as "*What are the drivers for people to choose particular types of investment?*," in face-to-face delivery mode. This type of knowledge focus usually generates a lot of discussion; as a result, the debate and the dialogue will enhance students' understanding of the principles. On the other hand, he recorded skill-based knowledge, such as "*how to use a financial calculator*," as videos, and placed them online as resources. The face-to-face contact time may include classroom seminars, laboratory work, field trips, and time spent working on case studies. There is an expectation with this type of delivery that the students will have prepared for their study prior to attending the classes by taking advantage of the rich online resources available to them prior to the scheduled classroom contact time, and will focus on interactions with other students and lecturers during the classroom contact time. This is particularly important in the case of part-time courses, where students do not attend classes regularly, and where lecturers need to use the contact time to create interactive activities rather than using valuable time passing on general information.

Another advantage of different delivery methods, including the use of simulated work experiences, such as field trips, observations, and case studies, is that they are useful for enhancing students' practical knowledge. Blended learning is particularly suitable for subjects that require hands-on experience, such as teacher training, construction technology, and property development. This comment was made by the interviewees, in particular, Interviewees 2, 7, 8, and 9, who have had substantial involvement in this area. Interviewee 8 had had the most experience in using blended learning as a teaching method. He had used it for more than 20 years and was a tutor for pure distance learning courses. He reflected that the use of blended learning as a delivery method is a "*progressive*" journey. He has tried something new every year, has learned from the experience, and experimented with something different the next year. He suggested that it would be preferable to introduce new ideas gradually rather than rapidly. If ideas are introduced too rapidly and have not been tested or implemented before, failure can easily result. It is also difficult for students to accept and get used to substantial changes in a short period of time, which will adversely affect the students' learning experiences.

Students' Experiences and Perceptions of Blended Learning

The student participants had had relatively little previous experience with blended learning, with only 17% of the respondents reporting they had had previous blended learning experience.

More than 40% of respondents were not sure about what a blended learning teaching method was because it was not sufficiently explained in the module handbook. Possibly, students had not been made aware that they were being taught using blended learning because the tutors had not explicitly mentioned it. Notably, in terms of support for using blended learning, student respondents expressed the need to receive clearer guidance and a demonstration of how to use the online learning resources. This result is very much in line with what the literature says about the importance of skills training to facilitate the successful use of blended learning ([Beadle & Santy, 2008](#); [Harris et al., 2009](#)).

Regarding the comparison of blended learning with face-to-face learning, the majority of student respondents (57%) commented that the quality of feedback from blended learning courses was no different from that for traditional classroom teaching. The only comment made about feedback was that, "*we would prefer face-to-face feedback as it is more effective and more personal*," which reinforces the necessity for including face-to-face elements in blended learning approaches.

The majority of student respondents (more than 50%) did not see any difference in the amount and quality of interaction between students, or between students and staff, when comparing blended learning with face-to-face teaching. On the other hand, the majority of students (68% of respondents) commented

that there was a relationship between online and in-class learning, and that these delivery methods enhance and are relevant to each other. Student respondents perceived blended learning as a method that allowed them to study at their own pace and time, and encouraged them to become more independent in regard to their own learning. These comments parallel the findings from previous research, such as Chambers (1999), [Lebow \(1993\)](#), [Radford \(1997\)](#), and [Tam \(2000\)](#). [Sharpe et al. \(2006\)](#) summarize the benefits of blended learning arising from their study, stating:

We find that student response is overwhelmingly positive to the provision of online course information to supplement traditional teaching. Students make regular and frequent use of electronic resources with few reported problems of access. They particularly value flexible access both from home and on-campus (pp. 3-4).

The NTU students who participated in this research also identified blended learning as a flexible learning method that gave them the convenience of studying off campus. This was also reflected in their comments on rating the advantages of blended learning in the questionnaire. The top three advantages of blended learning chosen by students pertained to:

- 1) the flexibility of being able to complete assignments in any place/at any time;
- 2) the convenience of not having to come to campus as often;
- 3) the benefits of the online component when job responsibilities and other commitments make it difficult to attend face-to-face classes.

The students' perception of the flexibility of blended learning was further reinforced by their open comments on the most effective aspect of the use of blended learning. One of the student respondents commented that the most effective aspect of blended learning is *"the use of different teaching methods makes the delivery easier to understand, as a result, we are more engaged to our study,"* which summarizes the overall purpose of using blended learning as a delivery method.

On the other hand, the student respondents also identified one of the least effective aspects of blended learning. A student respondent stated these additional comments in his returned questionnaire: *"blended learning is making lectures redundant as all information is online" and "there is less interactive/lack of direct communications with tutors."* One of the major concerns of using blended learning as a delivery method is the potential of reducing interaction between lecturers and students. This can be summarized in one of the students' suggestions for blended learning, which was *"blended learning is beneficial but it should still maintain the interaction and instant contacts with the tutors."*

The NTU students had a different perception of blended learning compared to that in the literature. The NTU students perceived blended learning simply as an online learning delivery method. This was possibly because the lecturers did not define and explain "blended learning" to the students. Therefore, they did not necessarily realize they were being taught using a blended learning approach.

Similarities and Differences between Academics' and Students' Views on Blended Learning

Based on the findings of the research, the first common view between the student and academic participants of the study was that blended learning provides flexibility for students. Both groups found the use of a broad range of teaching methods assisted students' learning. Students with different learning paces and styles benefited from using various learning methods in order to maximize their learning ability and potential. The NTU program leaders and students shared the same views as [Garrison and Kanuka \(2004\)](#) and [Owston et al. \(2008\)](#), that is, blended learning encourages flexibility. They also expressed the view that blended learning was a favorable delivery method, particularly for part-time or distance learning courses with students studying off site.

The major difference of view between academics and students who participated in the study related to the placement of teaching materials on the Internet. Academics saw posting such materials online prior to lectures as being convenient for students' study, but students felt it made lectures redundant because all of the information was already available online. They also expressed a view that it led to less interaction and a lack of direct communication between tutors and students, as well as among the students themselves. The final concern, which was solely raised by students, had to do with the importance of training, with students commenting that it was important to have enough training in order for them to fully utilize blended learning.

Discussion

Blended learning enhances students' learning experiences by creating opportunities for them to improve their understanding through their own exploration and research of certain issues and topics ([Sharpe et al.](#),

2006). It encourages student-led learning and allows students to learn at their own pace. It gives greater flexibility of learning for students, which in turn, improves students' learning experiences and achievement. However, blended learning must not be seen purely as an economic measure for teaching. This view is supported by comments from the interviewees in this research who emphasize the significance of investment for successful implementation of blended learning. In addition, careful consideration must be given to the use of information and communication technology (ICT). The purpose of using ICT is to aid students' learning, not to use it to replace the valuable interaction between academics and students. This echoes O'Toole and Absalom's (2003) and López-Pérez et al.'s (2011) findings that the use of ICT alone does not enhance students' experiences, and that only the appropriate use of ICT and interactive strategy will enhance students' learning experiences.

Blended learning cannot totally replace face-to-face contact with students, who require reassurance and ongoing support from lecturers. Students who responded to this survey voiced this opinion strongly. It was reflected in their comments that they prefer face-to-face interaction instead of online communications only, as they require the personal interactions with the tutors. The successful examples of blended learning ensure a good mix of delivery methods that are able to suit individual dispositions of the learners, such as part-time or off-campus students. It linked back to Academic 5's comment on using a face-to-face mode for teaching material that has a philosophical focus, and an online mode for skills-based knowledge. In order to develop blended learning successfully, institutional support is vital. Universities must be prepared to invest time and resources in developing and maintaining a successful blended learning environment. A substantial time commitment is needed at the startup phase and for continued maintenance throughout. Although technology is important, the most important element for successful development of blended learning is an understanding of the learners' preferred learning methods and the types of support they require, as evidenced in the interviewees' comments in the present study. It is crucial to take steps to respect and recognize students' "diverse talents and ways of learning," as advocated by the seventh of Chickering and Gamson's (1987) Seven Principles. Furthermore, the design of blended learning should demonstrate, via the online materials and activities, that the diverse talents and ways of learning are understood. It is also important to investigate how the delivery of blended learning at the module or unit level can support students' learning across an entire program.

Conclusion, Recommendations, and Suggestions for Future Research

This paper has reported on a study investigating the use of blended learning to enhance students' learning experiences, from an institutional perspective. The application of blended learning at NTU, together with success factors and the advantages of the development of blended learning, were investigated in the study. Students' experiences and perceptions of blended learning as a delivery method were also examined. Furthermore, the study looked at similarities and differences between academics' and students' views on blended learning.

The reasons for using blended learning at NTU are based on the nature of the courses and programs delivered by the University and the University's business model, which are similar to those at other U.K. universities (Sharpe et al., 2006). The factors essential to the success of developing blended learning are appropriate resources, the suitability of the course, and support from the senior management of the University. In other words, the institutional factor plays a major part in the successful implementation of blended learning, as management support and allocation of resources are vital. The key advantage for students of using blended learning as a delivery method is that it provides flexibility of learning for students, which links back to another factor necessary for successful implementation, which is the suitability of the course. Blended learning works particularly well for courses that have a high proportion of part-time students, as flexibility is vital for them. The use of blended learning also addresses several of the educational principles introduced by Chickering and Gamson (1987), such as "encourage active learning," "give prompt feedback," and "respect diverse talents and ways of learning," which further reinforces the view that blended learning can enhance students' learning experiences. The students at NTU had had relatively limited experience of blended learning. However, they have accepted the delivery method well, which supports Sharpe et al.'s findings. Although the students at NTU do not see much difference between blended learning and face-to-face learning in terms of interaction between students and lecturers or among students, they stated clearly that they still want face-to-face interaction with the lecturers. The academics and students at NTU shared similar views on blended learning, both finding that its main advantage is flexibility. The main difference between their views centered around the issue of making lecture materials available on the Internet. While the academics believed this practice provided convenience for their students, students perceived it as making lectures redundant. It is therefore important for lecturers to carefully consider when and how to release their materials online.

Based on the findings of this study, several recommendations can be made on the use of blended learning as a teaching method. For colleagues who intend to use blended learning in the future, it is suggested that the teaching style should be kept simple, but that the individuals must be prepared to be experimental. Different modules and courses require different forms of blended learning to suit the course, the content, and the students' needs; therefore, having a flexible approach is important. Individuals must also attempt to understand how students access and use materials and resources in order to design a blended learning module that matches students' preferences and expectations. The findings from [Ginns and Ellis' \(2007\)](#) study indicate academics in blended learning contexts need to focus not only on the technical capacities and functions of online materials and activities, but must also seek to understand their students' perceptions of the blended learning environment, and identify how successfully it supports students' learning across the whole course. The other important aspect for developing blended learning that emerged from the present study was the importance of not making assumptions; an approach that works for one module may not work for another. Students in different disciplines may have dissimilar preferred learning styles in different modules, so they may require different teaching and learning methods. It is also important to provide sufficient training for the students and for academics who are new to blended learning.

The first suggestion for institutions that intend to implement blended learning is that they must be realistic about the investment of time, effort, and resources that are required for development and implementation. Institutions must create the necessary policy, planning, resources, scheduling, and support systems to ensure that blended learning initiatives are successful. The resources required are not restricted solely to the acquisition of equipment and technology, but also refer to the human resources used in developing and managing the implementation of blended learning. It is also important to provide technology training and support for the students as well as professional development for the academics who will be using blended learning. The development program should teach academics how to redesign their courses, the most effective way to deliver their courses online, and also the effective use of technology.

The major limitation of this study is that the research findings are based on the practice in a single institution, although they do cover a range of disciplines. A suggested future research area is to adopt the research methodology developed in this project to conduct research in several universities to obtain a broader picture of the use of blended learning in the sector. Another proposed research area is to conduct an extensive study on the use of blended learning in particular subject disciplines.

References

- Baldwin-Evans, K. (2006). Key steps to implementing a successful blended learning strategy. *Industrial and Commercial Training*, 38(3), 156-163. doi:10.1108/00197850610659427
- Banks, J. (2001). *From boring to "Blackboarding": Building participation through VLE group work*. Retrieved from http://cebe.cf.ac.uk/learning/casestudies/case_pdf/jbanks.pdf
- Beadle, M., & Santy, J. (2008). The early benefits of a problem-based approach to teaching social inclusion using an online virtual town. *Nurse Education in Practice*, 8(3), 190-196. doi:10.1016/j.nepr.2007.07.004
- Biggs, J., & Tang, C. (2011). *Teaching for quality learning at university* (4th ed.). Maidenhead, UK: Open University Press.
- Bliuc, A. M., Goodyear, P., & Ellis, R. A. (2007). Research focus and methodological choices in studies into students' experiences of blended learning in higher education. *The Internet and Higher Education*, 10(4), 231-244. doi:10.1016/j.iheduc.2007.08.001
- Boyle, T., Bradley, C., Chalk, P., Jones, R., & Pickard, P. (2003). Using blended learning to improve student success rates in learning to program. *Journal of Educational Media*, 28(2-3), 165-178. doi:10.1080/1358165032000153160
- Chambers, M. (1999). The efficacy and ethics of using digital multimedia for educational purposes. In A. Tait & R. Mills (Eds.), *The convergence of distance and conventional education: Patterns of flexibility for the individual learner* (pp. 5-16). New York, NY: Routledge.
- Chickering, A. W., & Ehrmann, S. C. (1996). Implementing the Seven Principles: Technology as lever. *AAHE Bulletin*, 49(2), 3-6.
- Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin*, 39(7), 3-7.

- Childs, S., Blenkinsopp, E., Hall, A., & Walton, G. (2005). Effective e-learning for health professionals and students – barriers and their solutions. A systematic review of the literature – findings from the HeXL project. *Health Information and Libraries Journal*, 22(Suppl. 2), 20-32. doi:10.1111/j.1470-3327.2005.00614.x
- Donnelly, R. (2010). Harmonizing technology with interaction in blended problem-based learning. *Computers & Education*, 54(2), 350-359. doi:10.1016/j.compedu.2009.08.012
- Driscoll, M. (2002). *Blended learning: Let's get beyond the hype*. Retrieved from http://www-07.ibm.com/services/pdf/blended_learning.pdf
- Dziuban, C., Hartman, J., Juge, F., Moskal, P., & Sorg, S. (2006). Blended learning enters the mainstream. In C. J. Bonk & C. R. Graham (Eds.), *Handbook of blended learning: Global perspectives, local designs* (pp. 195-208). San Francisco, CA: Pfeiffer.
- Dziuban, C., & Moskal, P. (2013). *Distributed learning impact evaluation*. Retrieved from <http://cdl.ucf.edu/research/rite/dl-impact-evaluation/>
- Entwistle, N., McCune, V., & Hounsell, J. (2002). *Approaches to study and perceptions of university teaching-learning environments: Concepts, measures and preliminary findings*. Edinburgh, UK: Enhancing Teaching-Learning Environments in Undergraduate Courses Project, University of Edinburgh, Coventry University, and Durham University. Retrieved from <http://www.etl.tla.ed.ac.uk/docs/ETLreport1.pdf>
- Entwistle, N., & Ramsden, P. (1983). *Understanding student learning*. London, UK: Croom Helm.
- Garnham, C., & Kaleta, R. (2002). Introduction to hybrid courses. *Teaching with Technology Today*, 8(6). Retrieved from <http://www.uwsa.edu/ttt/articles/garnham.htm>
- Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education*, 7(2), 95-105. doi:10.1016/j.iheduc.2004.02.001
- Garrison, D. R., & Vaughan, N. D. (2008). *Blended learning in higher education: Framework, principles, and guidelines*. San Francisco, CA: Jossey-Bass.
- Giins, R., & Ellis, R. (2007). Quality in blended learning: Exploring the relationships between on-line and face-to-face teaching and learning. *The Internet and Higher Education*, 10(1), 53-64. doi:10.1016/j.iheduc.2006.10.003
- Graham, C. R. (2006). Blended learning systems: Definition, current trends, and future directions. In C. J. Bonk & C. R. Graham (Eds.), *Handbook of blended learning: Global perspectives, local designs* (pp. 3-21). San Francisco, CA: Pfeiffer.
- Green, S. M., Weaver, M., Voegeli, D., Fitzsimmons, D., Knowles, J., Harrison, M., & Shephard, K. (2006). The development and evaluation of the use of a virtual learning environment (Blackboard 5) to support the learning of pre-qualifying nursing students undertaking a human anatomy and physiology module. *Nurse Education Today*, 26(5), 388-395. doi:10.1016/j.nedt.2005.11.008
- Halverson, L. R., Graham, C. R., Spring, K. J., & Drysdale, J. S. (2012). An analysis of high impact scholarship and publication trends in blended learning. *Distance Education*, 33(3), 381-413. doi:10.1080/01587919.2012.723166
- Hara, N. (2000). Student distress in a web-based distance education course. *Information, Communication & Society*, 3(4), 557-579. doi:10.1080/13691180010002297
- Hara, N., & Kling, R. (1999). Students' frustrations with a web-based distance education course. *First Monday*, 4(12). Retrieved from <http://www.firstmonday.org/article/view/710/620>
- Harris, P., Connolly, J., & Feeney, L. (2009). Blended learning: Overview and recommendations for successful implementation. *Industrial and Commercial Training*, 41(3), 155-163. doi:10.1108/00197850910950961
- Johnson, J. (2002). Reflections on teaching a large enrollment course using a hybrid format. *Teaching with Technology Today*, 8(6). Retrieved from <http://www.uwsa.edu/ttt/articles/jjohnson.htm>

- Jonas, D., & Burns, B. (2010). The transition to blended e-learning. Changing the focus of educational delivery in children's pain management. *Nurse Education in Practice* 10(1), 1-7. [doi:10.1016/j.nepr.2009.01.015](https://doi.org/10.1016/j.nepr.2009.01.015)
- King, K. P. (2002). Identifying success in online teacher education and professional development. *The Internet and Higher Education*, 5(3), 231-246. [doi:10.1016/S1096-7516\(02\)00104-5](https://doi.org/10.1016/S1096-7516(02)00104-5)
- Laurillard, D. (2002). *Rethinking university teaching: A conversational framework for the effective use of learning technologies* (2nd ed.). London, UK: RoutledgeFalmer.
- Lebow, D. (1993). Constructivist values for instructional systems design: Five principles toward a new mindset. *Educational Technology Research & Development*, 41(3), 4-16. [doi:10.1007/BF02297354](https://doi.org/10.1007/BF02297354)
- Lim, D. H., & Morris, M. L. (2009). Learner and instructional factors influencing learning outcomes within a blended learning environment. *Educational Technology & Society*, 12(4), 282-293. Retrieved from http://www.ifets.info/journals/12_4/24.pdf
- Littlejohn, A., & Pegler, C. (2007). *Preparing for blended e-learning*. Abingdon, UK: Routledge.
- Lizzio, A., Wilson, K., & Simons, R. (2002). University students' perceptions of the learning environment and academic outcomes: Implications for theory and practice. *Studies in Higher Education*, 27(1), 27-52. [doi:10.1080/03075070120099359](https://doi.org/10.1080/03075070120099359)
- López-Pérez, M. V., Pérez-López, M. C., & Rodríguez-Ariza, L. (2011). Blended learning in higher education: Students' perceptions and their relation to outcomes. *Computers & Education*, 56(3), 818-826. [doi:10.1016/j.compedu.2010.10.023](https://doi.org/10.1016/j.compedu.2010.10.023)
- Marsh, D., Pountney, R., & Prigg, R. (2008). *C-SAP scoping survey on the use of e-learning in the social sciences*. Birmingham, UK: Higher Education Academy Centre for Sociology, Anthropology and Politics.
- Marton, F., & Säljö, R. (1976a). On qualitative differences in learning: I – outcome and process. *British Journal of Educational Psychology*, 46(1), 4-11. [doi:10.1111/j.2044-8279.1976.tb02980.x](https://doi.org/10.1111/j.2044-8279.1976.tb02980.x)
- Marton, F., & Säljö, R. (1976b). On qualitative differences in learning: II – outcome as a function of the learner's conception of the task. *British Journal of Educational Psychology*, 46(2), 115-127. [doi:10.1111/j.2044-8279.1976.tb02304.x](https://doi.org/10.1111/j.2044-8279.1976.tb02304.x)
- Mason, R., & Rennie, F. (2006). *E-learning: The key concepts*. Abingdon, UK: Routledge.
- Mitchell, A., & Honore, S. (2007). Criteria for successful blended learning. *Industrial and Commercial Training*, 39(3), 143-149. [doi:10.1108/00197850710742243](https://doi.org/10.1108/00197850710742243)
- Nottingham Trent University. (2010). *Nottingham Trent University (NTU) Strategic Plan 2010-2015*. Retrieved from http://www.ntu.ac.uk/about_ntu/document_uploads/102081.pdf
- Nunan, T., George, R., & McCausland, H. (2000). Rethinking the ways in which teaching and learning are supported: The Flexible Learning Centre at the University of South Australia. *Journal of Higher Education Policy and Management*, 22(1), 85-98. [doi:10.1080/713678130](https://doi.org/10.1080/713678130)
- Oliver, M., & Trigwell, K. (2005). Can "blended learning" be redeemed? *E-Learning*, 2(1), 17-26. [doi:10.2304/elea.2005.2.1.17](https://doi.org/10.2304/elea.2005.2.1.17)
- Osguthorpe, T. R., & Graham, C. R. (2003). Blended learning environments: Definitions and directions. *Quarterly Review of Distance Education*, 4(3), 227-233.
- O'Toole, J. M., & Absalom, D. J. (2003). The impact of blended learning on student outcomes: Is there room on the horse for two? *Journal of Educational Media*, 28(2-3), 179-190. [doi:10.1080/1358165032000165680](https://doi.org/10.1080/1358165032000165680)
- Owston, R., Wideman, H., Murphy, J., & Lupshenyuk, D. (2008). Blended teacher professional development: A synthesis of three program evaluations. *The Internet and Higher Education*, 11(3-4), 201-210. [doi:10.1016/j.iheduc.2008.07.003](https://doi.org/10.1016/j.iheduc.2008.07.003)
- Poon, J., Royston, P., & Fuchs, W. (2010, September). *An examination of the critical factors for developing a successful blended learning teaching method for RICS and CIOB accredited courses*.

- Paper presented at the RICS Foundation Construction and Building Research Conference (COBRA 2010), Paris, France.
- Prosser, M., & Trigwell, K. (1999). *Understanding learning and teaching: The experience in higher education*. Buckingham, UK: Buckingham, UK: The Society for Research into Higher Education and Open University Press.
- Radford, A. (1997). The future of multimedia in education. *First Monday*, 2(11). Retrieved from <http://www.firstmonday.org/article/view/560/481>
- Ramsden, P. (2003). *Learning to teach in higher education* (2nd ed.). Abingdon, UK: RoutledgeFalmer.
- Saltzberg, S., & Polyson, S. (1995). Distributed learning on the World Wide Web. *Syllabus*, 9(1), 10-12.
- Sharpe, R., Benfield, G., Roberts, G., & Francis, R. (2006). *The undergraduate experience of blended e-learning: A review of UK literature and practice*. York, UK: The Higher Education Academy. Retrieved from http://www.heacademy.ac.uk/assets/documents/teachingandresearch/Sharpe_Benfield_Roberts_Francis.pdf
- Singh, H. (2003). Building effective blended learning programs. *Educational Technology*, 43(6), 51-54.
- Slovan, M. (2007). Making sense of blended learning. *Industrial and Commercial Training*, 39(6), 315-318. doi:10.1108/00197850710816782
- Smyth, S., Houghton, C., Cooney, A., & Casey, D. (2012). Students' experiences of blended learning across a range of postgraduate programmes. *Nurse Education Today*, 32(4), 464-468. doi:10.1016/j.nedt.2011.05.014
- Stacey, E., & Gerbic, P. (2008). Success factors for blended learning. In R. Atkinson & C. McBeath (Eds.), *Hello! Where are you in the landscape of educational technology? Proceedings of the 25th ASCILITE Conference* (pp. 964-968). Melbourne, Australia: Deakin University. Retrieved from <http://www.ascilite.org.au/conferences/melbourne08/procs/stacey.pdf>
- Stewart, J. M. (2002). A blended e-learning approach to intercultural training. *Industrial and Commercial Training*, 34(7), 269-271. doi:10.1108/00197850210447264
- Tabor, S. W. (2007). Narrowing the distance: Implementing a hybrid learning model for information security education. *Quarterly Review of Distance Education*, 8(1), 47-57.
- Tam, M. (2000). Constructivism, instructional design, and technology: Implications for transforming distance learning. *Educational Technology & Society*, 3(2), 50-60. Retrieved from http://www.ifets.info/journals/3_2/tam.html
- Trasler, J. (2002). Effective learning depends on the blend. *Industrial and Commercial Training*, 34(5), 191-195. doi:10.1108/00197850210437111
- Twigg, C. A. (2003a). *Improving learning and reducing costs: Lessons learned from Round 1 of the Pew grant program in course redesign*. Troy, NY: Center for Academic Transformation. Retrieved from <http://www.thencat.org/PCR/R1Lessons.html>
- Twigg, C. A. (2003b). Improving learning and reducing costs: New models for online learning. *EDUCAUSE Review*, 38(5), 28-38. Retrieved from <http://net.educause.edu/ir/library/pdf/ERM0352.pdf>
- Vaughan, N. D. (2007). Perspectives on blended learning in higher education. *International Journal on E-Learning*, 6(1), 81-94. Retrieved from [EDITLib Digital Library](#). (6310)
- Voos, R. (2003). Blended learning – what is it and where might it take us? *Sloan-C View*, 2(1), 3-5. Retrieved from <http://www.sloan-c.org/publications/view/v2n1/blended1.htm>
- Wall, J., & Ahmed, V. (2008). Lessons learned from a case study in deploying blended learning continuing professional development. *Engineering, Construction and Architectural Management*, 15(2), 185-202. doi:10.1108/09699980810852691
- Wang, M., Shen, R., Novak, D., & Pan, X. (2009). The impact of mobile learning on students' learning behaviours and performance: Report from a large blended classroom. *British Journal of Educational Technology*, 40(4), 673-695. doi:10.1111/j.1467-8535.2008.00846.x

- Welker, J., & Berardino, L., (2005-2006). Blended learning: Understanding the middle ground between traditional classroom and fully online instruction. *Journal of Educational Technology Systems*, 34(1), 33-55. [doi:10.2190/67FX-B7P8-PYUX-TDUP](https://doi.org/10.2190/67FX-B7P8-PYUX-TDUP)
- Williams, N. A., Bland, W., & Christie, G. (2008). Improving student achievement and satisfaction by adopting a blended learning approach to inorganic chemistry. *Chemistry Education Research and Practice*, 9(1), 43-50. [doi:10.1039/B801290N](https://doi.org/10.1039/B801290N)
- Woltering, V., Herrler, A., Spitzer, K., & Spreckelsen, C. (2009). Blended learning positively affects students' satisfaction and the role of the tutor in the problem-based learning process: Results of a mixed-method evaluation. *Advances in Health Sciences Education*, 14(5), 725-738. [doi:10.1007/s10459-009-9154-6](https://doi.org/10.1007/s10459-009-9154-6)
- Yen, J.-C., & Lee, C.-Y. (2011). Exploring problem solving patterns and their impact on learning achievement in a blended learning environment. *Computers & Education*, 56(1), 138-145. [doi:10.1016/j.compedu.2010.08.012](https://doi.org/10.1016/j.compedu.2010.08.012)

Appendix: Student Questionnaire

Background Information

- 1) Year of study
 - First year
 - Second year
 - Third year
 - Fourth year
 - Postgraduate
- 2) Student status
 - Full time
 - Part time
- 3) Age group
 - 18-24
 - 25-35
 - Over 35

Section 1: Experience of Using Blended Learning

- 1) Do you have knowledge or experience of using blended learning prior to attending this course/module?
 - Yes – *If Yes, please provide more details:*
 - No
- 2) Do you think you have sufficient training and guidance in the use of blended learning methods?
 - Yes
 - No – *If No, please state what type of training you would like to have:*
- 3) Blended learning teaching method is sufficiently explained in a module handbook.
 - Strongly agree
 - Agree
 - Not sure
 - Disagree
 - Strongly disagree
 - Not applicable
- 4) A module handbook provides sufficient resources for this specific blended learning module.
 - Strongly agree
 - Agree

- Not sure
- Disagree
- Strongly disagree
- Not applicable

Section 2: Overall Satisfaction with Blended Learning

- 1) Given the opportunity, I would take another blended learning module in the future.
 - Strongly agree
 - Agree
 - Not sure
 - Disagree
 - Strongly disagree
 - Not applicable
- 2) Overall, I am satisfied with the use of blended learning as a teaching method.
 - Strongly agree
 - Agree
 - Not sure
 - Disagree
 - Strongly disagree
 - Not applicable

Section 3: Comments on Blended Learning

- 1) In your what are the advantages of using blended learning as a teaching method? (Please identify up to THREE advantages.)
 - Convenience of not having to come to campus as often
 - Flexibility of being able to complete assignments any place/any time
 - It is a requirement for course/module
 - It was the only available option course that fitted into my timetable
 - Job responsibilities and other commitments make it difficult to attend face-to-face classes
 - I have a disability that makes travel inconvenient
 - Other – *Please specify:*
- 2) What was the MOST effective aspect of the use of blended learning as a teaching method?
- 3) What was the LEAST effective aspect of the use of blended learning as a teaching method?
- 4) What suggestions can you provide to help strengthen this blended learning module?

Section 4: Comparison of Blended Learning to Face-to-Face Learning

- 1) In comparison to the traditional classroom teaching, how would you describe the QUALITY OF FEEDBACK on coursework assessment that is received if the module is taught by blended learning?
 - Increased
 - Somewhat increased
 - No difference
 - Somewhat decreased
 - Decreased
 - Not applicable

- 2) In comparison to the interaction experienced with STUDENTS in other modules that do not use blended learning, how would you describe the AMOUNT of interaction experienced with other students?
 - Increased
 - Somewhat increased
 - No difference
 - Somewhat decreased
 - Decreased
 - Not applicable
- 3) In comparison to the interaction experienced with LECTURERS/TUTORS in other modules that do not use blended learning, how would you describe the AMOUNT of interaction experienced with the lecturer(s)/tutor(s) in this module?
 - Increased
 - Somewhat increased
 - No difference
 - Somewhat decreased
 - Decreased
 - Not applicable
- 4) In comparison to the interaction experienced with STUDENTS in other modules, how would you describe the QUALITY of interaction experienced with other students in this module?
 - Increased
 - Somewhat increased
 - No difference
 - Somewhat decreased
 - Decreased
 - Not applicable
- 5) In comparison to the interaction experienced with LECTURERS/TUTORS in other modules, how would you describe the QUALITY of interaction experienced with the lecturer(s)/tutor(s) in this module?
 - Increased
 - Somewhat increased
 - No difference
 - Somewhat decreased
 - Decreased
 - Not applicable
- 6) How would you describe the relationship between the online learning and in-class learning?
 - Online and in-class work enhanced each other
 - Online and in-class work were relevant to each other
 - The connection between the two was not always clear
 - There was no connection between the two

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