Teachers’ Conceptions and Approaches to Blended Learning: A Literature Review.

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ABSTRACT
Learning Management Systems (LMS) provide the opportunity to deliver blended learning approaches that combine a mix of Information and Communications Technology (ICT) with various learning resources and delivery methods. Blended learning is seen as a link between teachers, students and classrooms located in different places to enhance learning. The advantages of blended learning include a lack of dependence on the time constraints, time for reflections, meeting students’ different needs and learning styles, improved engagement and added flexibility in teaching and learning. This paper presents a critical review and synthesis of research literature exploring teachers’ conceptions of blended learning and their approaches to both design and teaching using Picciano’s Blending with Purpose Multimodal framework. In addition, this paper builds upon previous research on blended learning and conceptual framework by Picciano [1]. Research results suggest that teachers use multiple approaches including face-to-face methods and online technologies that address the learning needs of a variety of students from different generations, personality types and learning styles.

KEYWORDS
blended learning; blended learning environments; blended teaching; eLearning; hybrid learning; teachers’ perceptions; learning management systems

1. INTRODUCTION
Over the past two decades the introduction of the Internet and the use of Information and Communication Technology (ICT) that enhance knowledge and performance have been integrated into many university courses [2]. Within higher education, Kanuuka and Kelland [3] reflect that:

Higher education literature on e-learning technology is replete with research that tinkers with, and then tests the effects if, instrumental practices. The ultimate aim is to determine once and for all, what works and what does not – passing by the questions of why (p.61).

Most universities have incorporated learning management systems, such as Blackboard and Moodle, into their teaching practices [4, 5] to support teachers in delivering material to students. A learning management system is a software application used to design, deliver and build online learning environments for a course. Coates et al. [6] outline several key features of LMSs:
1. Asynchronous and synchronous communication between teacher-student and student-student (discussion boards, emails, live chats);
2. Content development and delivery (lecture notes, readings, practical activities);
3. Formative and summative assessment (submission of assignments, quizzes, collaborative work feedback, grades);
4. Class and user management (enrolling students, displaying timetable) (p. 20-21).

Coates, James and Baldwin [6] found that LMS studies focused on the economic and technical issues of LMS usage (p. 26). They are also critical of the "textual nature" of LMSs (p. 27). Similarly, Prendergast [7] argues:
Too often considerations about information technology have become the dominant factors in many strategies adopted by academic institutions. This has resulted in a rich information technological environment that fails to capture, motivate or retain learners.
Brabazon [8] supports this view, by stating that:

Teachers and teaching are being challenged and undermined through the Internet. Learning is not technologically dependent. It is reliant on commitment, interest and passion (p.17).

There are several reasons behind the drive to incorporate ICT into the educational process. First, pressure to utilise ICT at a university level comes from changes in the student demography. According to Concannon, Flynn and Campbell [9] the surge in “full time part time students is a phenomenon of recent years, where school leavers take part-time jobs whilst attending university” (p.502). For students who work full time, the flexible design accommodates their busy schedules. Without this flexibility, the students may not be able to pursue their degrees. Blended learning environments suit students who prefer face-to-face interaction in addition to students who prefer online learning.

Second, blended learning has the potential to promote lifelong learning in higher education [10]. In their qualitative study, Dzakiria, Wahab and Rahman investigated the learning experiences of a students undertaking studies at University Utara Malaysia. They found that blended learning’s “flexibility nature can promote lifelong learning anywhere, and anytime” [10]. This is supported by research carried out by Masalela [11] whose qualitative study examined factors that influenced fifteen faculty members’ decision to use blended learning and found that learners become self-directed, develop critical thinking skills and become independent thinkers through blended courses. In addition, develop lifelong skills to use when they leave the university.

Third, changes in the market for delivery of education comes from innovation in new technologies. In the case of University of Central Florida [12], a three hour classroom instruction was replaced with a two hour online instruction session. The university was able to operate multiple classes in one classroom using the technological infrastructure of the university. In addition, blended learning enables multi-university offerings [13] and facilitates elective courses [14]. Lastly, there is pressure from government for universities to increase participation and widen access to higher education [15].

It has been widely argued in the literature that there are four main advantages while incorporating the blended learning approach into teaching practice: greater flexibility of time; lack of dependence on the time constraints of the teacher; time for reflection; and meeting different needs and learning styles. The younger generations according to Prensky’s [16] “digital natives” use online technologies for their social and informational activities whilst older generations use these technologies less so. Furthermore, students engage in ways they prefer according to their preferences, interests or abilities.

In sum, the current environment of higher education requires a careful consideration of the role of blended learning in addressing a number of issues related to teaching and learning such as generational differences, personality types and learning styles. The goal of this review is to present an investigation of the research currently available on teachers’ conceptions of blended learning and their approaches to both design and teaching in higher education using Picciano’s Blending with Purpose Multimodal framework. This proposes that teachers consider their objectives and understand how to apply the technologies and approaches that will work best for their students. This paper contributes to the field of blended learning by exploring how objectives from Picciano’s framework (content, socially and emotionally, dialectic/questioning, collaboration, synthesis/evaluation and reflection) affect teachers’ approach to both design and teaching in face-to-face and online settings.

Structurally, this paper consists of five thematic sections with relevant sub-sections. First, the author defines blended learning in this context. Second, the author describes the method for choosing the studies in this literature review. In the third section, Picciano’s Blend with Purpose Multimodal framework will be discussed. The fourth section of the article explores the literature available on teachers’ conceptions on blended learning and their approaches to both design and teaching in higher education. Last, I present...
findings and provide suggestions for how this literature review could help researchers approach and study teachers’ conceptions on blended learning environments in the future.

2. LITERATURE REVIEW

There are a few literature reviews on blended learning [17-20]. Apart from published texts [21-24] there are a small number of publications focusing on teachers’ conceptions using blended learning environments [25].

This section presents a critical review and synthesis of the research literature in the field being investigated by this paper: how teachers experience and perceive the blended learning approach in higher education. The literature review commences by defining blended learning. The advantages of blended learning approach are then discussed. This is followed by a review of the research literature on teachers’ conceptions of blended learning and their approaches to both design and teaching in higher education using Picciano’s Blending with Purpose Multimodal framework.

There are many definitions for blended learning.

2.1 Defining blended learning

Blended learning has been defined in a number of ways and a generally accepted definition does not exist. It is used interchangeably with distance learning, online learning, eLearning, blended teaching, e-teaching, blended e-learning, hybrid learning and flexible learning. The literature defines blended learning in many different ways according to instructional methods. The three most common definitions documented by Graham, Allen and Ure [26], are:

1. Combining instructional modalities (or delivery media). From a training perspective, Skill and Young [27] view blended learning as “a combination of in-class teaching and learning modalities with robust electronically mediated experiences” (p.25). Singh [28] sees blended learning as a combination of multiple delivery media designed to complement each other and promote meaningful learning.

2. Combining instructional methods. According to Welker and Berardino [29] blended learning is the use of electronic learning tools that supplement but do not replace face-to-face learning (p.33). Blended learning is an infusion of web-based technologies into face-to-face learning to create blended learning. Alternatively the combination of instructional methods is known as hybrid learning [30-32].

3. Combining online learning and face-to-face instruction [33-37].

Blended learning is also noted as “blended e-learning system” that “refers to an instructional system that combines multiple delivery methods, including most often face-to-face classroom with asynchronous and/or synchronous online learning. It is characterised as maximising the best advantages of face-to-face and online education.” [38] This view is supported by Littlejohn and Pegler [23].

A significant amount of blended learning research has already been done from the learning context of face-to-face activities and to which an online or web-based activity had been added. Skill and Young [27] stated that “blended learning moves well beyond the concept of bolting a Website onto a traditional classroom-based course” (p.25). Furthermore, Graham [39] defined blended learning as “the combination of the instruction from two historically separate models of teaching and learning: traditional face-to-face learning systems and distributed learning systems” (p.5) with an emphasis on the role of computer-based technologies. However, in a criticism of blended learning, Oliver and Trigwell [40] argued that blended learning is really concerned with the process of blending media, teaching processes and presentation, rather than student’s learning. They suggested that blended learning could be redeemed “by a closer analysis of the critical aspects of the subject matter that are in variation in the act of using blended learning” (p.24).

In a major review of blended e-learning in the UK, Sharpe [41] concluded that while the term “blended learning” was unclear, it remained a
practical term, because it could mean different things to different people. The term ‘blended learning’ is used in this paper to describe learning activities that involve a combination of face-to-face interactions and technologically mediated interactions between students, teachers and learning resources [19].

As described above, there are many variations in defining blended learning and different institutions implement blended learning approaches in different ways [42].

2.2 Advantages of the Blended Learning Approach

In blended learning teachers who use a learning management system can share course materials, syllabus, opinions and online assessments as well as use e-mail, discussion boards, calendars, blogs, journals, along with traditional face-to-face activities such as lectures and tutorials. Several researchers support blended learning [9, 41].

It has been widely argued in the literature that there are four main advantages while incorporating the blended learning approach into teaching practice:

1. Greater flexibility of time. Freedom for students to decide when each online lesson will be learned [43, 44];
2. Lack of dependence on the time constraints of the teacher [45, 46];
3. Time for reflection. Freedom for students to express thoughts, and ask questions, without limitations [47, 48];
4. Meeting different needs and learning styles [49].

Research literature elsewhere indicates that blended learning can bring teachers and students closer together [50, 51]. Aspden and Helm [51] explored student engagement and interaction with students in the context of a blended learning situation and argue that the blended learning approach can help bring teachers and students together by making appropriate use of a mix of technologies students can feel increased connectivity with both their fellow students and university staff. Furthermore, Garrison and Anderson [52] argue that access to information is an important part of learning however student’s learning is largely achieved through engagement and interaction with other students. Chen and Looi [53] also indicated that online discussion contains more opportunities for the practice of in depth clarification and inference skills.

To increase the likelihood of positive student learning outcomes using the blended learning approach teachers must adopt new technologies [54]. Simply placing existing material online does not serve the students. Gerbic [25] refers to this as “juxtaposition of two pedagogical settings” (p.222). Instead, the focus should be on recognising the potential of the blended learning approach to enhance student’s learning outcomes. Garrison and Vaughan [55] state that blended courses require these elements:

1. In-class activities that link the online assignments so as to reinforce the intent of activities outside the classroom;
2. Shift from teacher-centred to learner-centred activities in class as well as online;
3. Focus on student responsibility for navigating online resources and conducting online research and
4. Evaluation instruments that provide frequent feedback.

Teachers publish their learning resources on the learning management website and students participate through computer networks. A positive attitude towards computers and the Internet, for example, where teaching staff are not afraid of the complexity of using computers, will result in effective learners in a blended learning environment [54]. Research results suggested that applying online technology in the classroom enhances students’ achievement [11]. Those tasks such as capturing student’s accomplishment through an electronic grade book, reviewing course materials and communicating with teachers can be carried out more efficiently. In their quantitative study Amrein-Beardsley, Foulger and Toth [56] investigated nine instructors perceptions of their students’ and their own experiences with hybrid courses. From the questionnaires they concluded that students found the online grade book and announcements most useful. Students appreciated instructors who graded assignments and posted them in the grade...
book in a timely and efficient manner. Students found the course document downloads, Internet sites and links sent to them from the instructors equally useful in terms of technology tools that enhanced their learning.

Blended learning environments can provide access to online learning materials for different styles of student learning and engage learners interactively [9, 41]. Motteram [57] found that the blended learning approach enhanced the learning experience as the course structure enabled them to deal with topics in their own time and to organise themselves better around the tasks in their own time. In two studies, one in the UK and one in Australia, the use of blended learning environments together with access to online learning materials were found to be determining factors behind increased student engagement and motivation [9, 58]. Rodriguez and Anicete [59] state that learning management systems, such as Modular Object Oriented Dynamic Learning Environment (MOODLE), can support students to develop more responsibility for their learning. This view is supported by Masalela [11]. In keeping with Motteram observations, [57] Rodriguez and Anicete [59] found that the blended learning approach enhanced the learning experience as the course structure enabled students to deal with topics in their own time and to organise themselves better around the tasks in their own time. However, other authors found that blended learning environments had both positive and negative outcomes, and there was the possibility of negative effects such as innovation fatigue amongst staff and students [40].

In addition, blended learning courses can support students and prove to be very useful in improving teachers’ abilities to respond a wide range of students’ needs. Ho [49] states that blended learning courses result in lower dropout rates compared to fully online courses. This view is supported by Dzuibian and Moskal [12] who reported that students’ withdrawal rates were reduced in blended learning courses.

Despite these advantages for blended learning, simply putting technology in classrooms will have little impact on students if teachers are not supported in learning how to use the technology. Salmon [60] stated that uploading PowerPoint slides into the learning management system is not enough to create good quality online learning materials. This view is supported by Heinze and Proctor’s action research study that examined staff opinions regarding the delivery of a program at the University of Salford using blended learning. Heinze and Proctor [61] found that simply using a learning management system instead of web pages to deliver handouts and presentations and combining it with discussion boards resulted in staff stating that they were not really doing any e-learning on the course.

Picciano’s Blending with Purpose Multimodal model was derived from discussions above on blending learning environments, generations, personality types and learning styles.

2.3 Blending with Purpose: The Multimodal Model

The organization of this paper is based on Picciano’s Blending with Purpose Multimodal framework (see Figure 1 below). Picciano [1] Blending with Purpose Multimodal framework recognises that because students represent different generations, different personality types, and different learning styles, teachers should seek to use multiple approaches including face-to-face methods and online technologies to meet the needs of a wide spectrum of students.

![Blending with Purpose: The Multimodal Model](image)

Figure 1: Blending with Purpose: The Multimodal Model. Source: Picciano [1] (p.11)

The most important feature of this model is that teachers need to carefully consider their objectives and understand how to apply the
technologies and approaches that will work best for their students. There are six pedagogical objectives used in the model above: content, social/emotional contexts, dialectic/questioning activities, synthesis/evaluation tools, collaboration/student-generated content, and reflection opportunities. Learning management systems and other online tools provide a number of mechanisms for assisting teachers meet these objectives.

2.4 Teachers’ Conceptions of Blended Learning

Considerable research has been carried out into teachers’ conceptions of face-to-face teaching [62-64] and what impact this may have on the way university teachers carry out their teaching. Entwistle [65] suggests that there are relationships between teachers’ conceptions of teaching (including their beliefs about teaching) and their approaches to teaching. An understanding of teachers’ conceptions is therefore likely to help in the process of understanding and improving teaching [66]. Kember and Kwan [67] identified two main approaches to teaching: ‘content centred’, in which teachers focus on the content to be taught; and ‘learner centred’ where teachers focus on the learning process.

As this literature review shows, there are thirteen studies focussed on teachers’ conceptions, beliefs and experiences of blended learning and their approaches to both design and teaching in face-to-face and online settings. Teachers’ conceptions of blended learning have been investigated with five studies reported research into teaching with e-learning [5, 68-71]. From these five studies, one had been conducted in a ‘distance education’ setting [68] and one reported conceptions of blended teaching [5]. A couple of studies have investigated teachers’ “beliefs”, which are considered different from “conceptions” according to the literature [72, 73]. The six remaining studies focussed on teachers’ conceptions and experiences of working with learning management systems [74-79].

Picciano’s [1] Blended with Purpose Multimodal framework comprises of six objectives (content, socially and emotionally, dialectic/questioning, collaboration, synthesis/evaluation and reflection) that affect teachers’ approach to both design and teaching in face-to-face and online settings. Much of the research in one objective impacts the other objectives.

First, the Blending with Purpose Multimodal framework suggests that delivering content is one of the main objectives of teaching and there are many ways in which content can be delivered and presented to students. Blended learning allows teachers an ongoing opportunity to experiment with new approaches to learning and new types of educational technology such as the Web and learning management systems. Learning management systems enable the delivery of a variety of media including text, video and audio. In providing and presenting content, the Blending with Purpose Multimodal framework suggests that multiple technologies and media be utilised. Research results suggest the teachers’ conceptions of blended learning as a way to provide information to students by way of lecture notes, online learning resources and links to external websites [70, 71, 80].

McConnell and Zhao [70] research examined the ways in which Chinese higher education teachers think about e-learning and e-teaching, and the ways in which they implement e-learning in a qualitative study. From twenty-four interviews they found a set of categories of conceptions:

1. The centrality of the learner (p.516);
2. Online co-operative learning (p.517);
3. Network learning (p.518);
4. Student learning (p.518);
5. Infrastructure and access (p.519).

Their research findings suggest that face-to-face instruction using lectures were the preferred method of teaching with each teacher acknowledging the “sheer power of the lecture in the Chinese higher education system” (p.519). These results are supported by another study that examined faculty involvement in blended instruction and their attitudes towards the instructional method. Oh’s [80] quantitative study involved one hundred and fifty-one universities classified by the Carnegie Foundation. One hundred and thirty-three faculty members completed a survey and reported that
the most commonly selected instructional delivery format used by faculty was “face-to-face instruction with supplementary online instructional components” (p.333). These results suggest that e-learning is conceived by teachers as not a good way to deliver course content to students with teachers preferring face-to-face methods.

In addition, Robert’s [71] phenomenographic study investigated the use of e-learning for teaching and the extent and nature of Web use for teaching and learning in a Scottish university. From a Web-based survey and interviews with seventeen teachers three conceptions of teaching using the Web were discovered, as well as a set of strategies to describe the approaches taken by lecturers. Conceptions of teaching using the web that were discovered are:

1. The web as a source of subject information (p.145): in this conception the Web is used the medium used to distribute information to students. Teachers upload learning materials such as lecture notes and direct students to websites to retrieve information.
2. The web is used for individual and independent self-paced learning (p.146): students use the Web to complete subject activities.
3. The web is used for group analysis, decision making and dialogue (p.147): the Web is used for students to interact with one another and create communities of inquiry [81].

These conceptions are consistent with McConnell and Zhao [70] definition of networked learning and Picciano’s definition of content [1] where teachers place material online and students are expected to learn at their own pace. At the University of Central Florida, learning to use technology to modify their teaching methods was cited as one of the outcomes that faculty liked most about teaching on the Web [12]. The fundamental principles underlying networked learning are learner-centred where the learning is outcome-focused and requires engagement, group collaboration and the creation of communities of inquiry [81].

Research results from this study are consistent with previous research outcomes from Kember and Khan [67] who suggested that teachers rely on ‘content-centred’ approaches to transmit information to students. Like Roberts and McConnell and Zhao, Gonzalez also found teachers’ conceptions focused on access to learning materials and information transfer. Gonzalez’s [68] phenomenographic study investigated what university teachers think eLearning is good for in their teaching. From interviews with seven teachers from the Faculty of Health Sciences three conceptions using eLearning were identified:

1. For individual access to learning materials and information, and for individual assessment (p.312);
2. For learning-related communication (p.312);
3. For networked learning (p.312).

Gonzalez [68] found that university teachers “having a ‘content-centred’ approach to teaching can be defined as ‘informative-individual learning focused’; while those university teachers having a ‘transitional or learner-centred’ approach can be defined as ‘communicative-networked learning focused’” [68].

Similar to the content-centred conceptions found in the above studies, outcomes from Lameras, Paraskakis and Levy [82] showed that teachers conceived eLearning as a way to transfer information to students where learning resources were uploaded for students to use on their own. This enables students to learn at their own pace. Lameras, Paraskasis and Levy [82] qualitative study investigated Greek university teachers’ conceptions of and approaches to teaching using digital technology in blended settings. Their interviews with twenty-five Computer Science teachers identified four categories that describe the use of virtual learning environments as a means of supporting:

1. Information transfer (p.145);
2. Application and clarification of concepts (p.145);
3. Exchange and development of ideas, and resource exploration and sharing (p.145);
4. Collaborative knowledge-creation, and development of process awareness and skills (p.145).
The first and second category of conceptions support the content-centred approaches of the virtual management system and are supported by research carried out by McConnell and Zhao as well as Roberts [70, 71]. The third and fourth category of conceptions support the learner-centred of the virtual management system and are supported by research carried out by Ellis, Steed and Applebee as well as McConnell and Zhao [5, 70].

Second, the Blended with Purpose Multimodal framework suggests that email and electronic communications enable collaboration between students. Research results indicate teachers’ conceptions of ‘E-Learning as a way to engage in communication-collaboration-knowledge building’ [83] and seen to engage students in discussion, developing understanding and building knowledge [5]. In addition, blended learning is conceived as a way of engaging students in learning activities that may lead to higher-level learning experiences [33].

In their qualitative study, Ellis, Steed and Applebee [5] investigated the conceptions of blended learning and teaching by teachers in two campus-based Australian universities, and the relationships between these conceptions to their approaches to integrating online and face-to-face environments. From their interviews with twenty-two teachers they identified four conceptions of blended teaching:

1. Blended teaching as helping students develop and apply new concepts (p.324);
2. Blended teaching as developing student understanding through aligning media to intended learning outcomes (p.324);
3. Blended teaching as providing students with information (p.325);
4. Blended teaching as replacing part of the responsibility of being a teacher (p.326).

The researchers found that teachers recognised a connection between students achieving their learning outcomes and the role of technology in blended settings helping students develop higher order thinking. Garrison and Kanuka [33] argued that blended environments can support and transform universities by building a Community of Inquiry [81] and develop higher order thinking.

Third, the Blending with Purpose Multimodal framework suggests that the social and emotional needs of students should be considered by teachers when designing blended learning courses [72, 74]. Stacey and Weisenberg [72] study investigated teachers’ beliefs about teaching face-to-face and online in two case studies of ten Australian and twelve Canadian university teachers. From an online open-ended questionnaire about teaching philosophies and approaches together with the Teaching Perspective Inventory which measures teachers’ beliefs. They found that twenty-two teachers regarded themselves as more teacher-centred in face-to-face settings and more learner-centred in online settings. The Australian teachers had a preference for teaching face-to-face because they believed that it enabled them to build better relationships with their students. In contrast, the Canadian teachers had a stronger preference for teaching online because they believed the mode could support multiple perspectives.

These conceptions are supported by research carried out by McShane’s [74] case study that investigated the personal experiences of five Australian lecturers who teach using an online learning management system (Web CT or Top Class) to organise the online components of their subjects. Five themes emerged across the individual case studies:

1. Enhanced relationships with students (p.8);
2. Planning and teaching becomes very conscious tasks (p.9);
3. Expansion, extension, augmentation (time and space) (p.10);
4. Scrutiny and reflexivity (p.11);
5. The centrality of learning (p.12).

McShane [74] found that university teachers perceived their teaching approaches where no different when they were teaching face-to-face to when they were teaching online. These findings were inconsistent with studies identified in this literature that show that teachers’ approaches can differ considerably when changing modes of teaching.

The fourth objective from the Blending with Purpose Multimodal framework suggests that dialectic/questioning is an important activity that
allows faculty to explore what students know and to refine their knowledge. For dialectic and questioning activities, a well-organised discussion board activity generally seeks to present a topic or issue and have students respond to questions, provide their own perspectives while also evaluating and responding to the opinions of others [73]. Research results indicate that teachers are advised to take deliberate action once courses begin towards creating a community of inquiry [81] such as monitoring and responding to online discussion board postings [84].

Steel [73] investigated the relationship between teacher beliefs and their learning designs for learning management systems in large undergraduate classes in her qualitative study. Three award winning university teachers from an Australian university were interviewed. The research identified “strong affective components” (p.414) of the teachers’ belief systems that demonstrate a commitment to engage with their students, build learning communities and use technologies to support social justice and equity. Faculty who have taught blended learning courses have observed that students do a better job of writing, learning course material, mastering concepts, and applying what they have learned compared to traditional face-to-face courses [85]. This viewpoint is captured in a comment from a faculty member at the University of Wisconsin who teaches blended courses, “My students have done better that I have ever seen; they are motivated, enthused and doing their best work” (p.3).

The fifth objective from the Blending with Purpose Multimodal framework suggests that students receive feedback from teachers regarding their academic progress. Learning management systems provide a number of mechanisms for assisting teachers to assess their student’s learning and provide feedback. Major methods include electronic tests, assignments and portfolios [75-77]. In sum, learning management systems provides an on-going record that can be referred to over and over again by both students and teachers. Gedik, Kiraz and Ozden [76] qualitative study investigated instructor experiences relating to the design, development and implementation processes of a blended course. They found several themes emerged:

- arousal of student’s interest and participation,
- flexibility, time conservation, improvement of interaction, collaboration and communication opportunities and the ability to track student’s progress.

In another qualitative study, King and Arnold [75] explored five professors who teach in blended learning environments and examined whether course preparation and design, communication and motivation are taken into consideration when designing their courses. All the professors used a learning management system for the online component. From a survey and interviews with five professors from the college of education at a Mid-western research university, four factors were found to contribute to the success of blended learning courses:

1. Course preparation (p.51): The professors prepared their blended courses in various ways and used technology, such as Skype, wikis and blogs in addition to the learning management system.
2. Course design (p.52): The professors used the content feature of the learning management system to post course documents and assignments which support the content-centred approach of teaching [67].
3. Communication (p.53): The importance of communicating with students in a timely manner is consistent with research findings in blended learning Ho, Lu and Thurmaier [49]. The professors used the discussion board in various ways. One professor required the students to complete weekly journals that were viewed by student and professor only enabling a confidential dialogue and the student’s time to reflect on what they had learnt.
4. Motivation (p.53). These results are supported by research carried out by Aycock, Garnham and Kaleta [85].

Research results indicate that professors “preparing for a blended learning course requires more discipline and preparation time than a traditional face-to-face course” [75]. The literature records challenges to the use of blended learning environments in other studies. The commonly found issues were increased time
commitment and workload [46, 75, 76, 78]. The increased time commitment involved in designing a blended course is regarded as the number one challenge by faculty [12]. This view is echoed in Napier [78] research (discussed below) where several success factors for teaching and designing blended learning courses were identified:

1. Play to your strengths;
2. Utilize technology;
3. Build a classroom without walls;
4. Provide tutoring and on-line support;
5. Creatively manage out-of-class time.

Napier [78] examined the perceptions of instructors teaching blended learning courses at a small public liberal arts college and found that instructors invest more time becoming familiar with available technology, creating in-class activities and reflecting on course structure. These results are also supported by research carried out by Edginton and Holbrook [46] who found that teachers teaching blended learning courses can expect to invest more time becoming familiar with available technology and creating in-class activities. These research results contradict Garrison and Vaughan’s [55] argument. They argued that, blended learning environments can ease the workload. Similarly, all faculty members involved in a blended learning program at the University of Wisconsin, Milwaukee stated that they will continue to teach blended learning courses as they believe that their time was wisely invested in improving the learning environment for both students and faculty members [85].

Jokinen and Mikkonen [77] qualitative study described teachers’ experiences of planning and implementing teaching and learning in a blended learning based nursing programme. Nine themes emerged from the data including: collaborative planning; integration; student group; face-to-face teaching; online learning; learning activities; teaching and learning methods; learning in and about work; and confirming competences [77].

These researchers found that teachers experienced the blended learning approach positively despite challenges from the viewpoint of planning and design. According to the study careful planning is required by teachers to ensure the combination of face-to-face learning and learning in practice with technology-mediated learning activities. These findings are supported by previous studies of Salmon [60] as well as Heinze and Proctor [61]. Moreover, while planning for blended learning, teachers should include a variety of learning activities to meet the needs of different learners [1].

Lastly, the Blending with Purpose Multimodal framework suggests that the ability to share one’s reflection with others can be most beneficial however this objective is the least researched objective. Pedagogical activities that require students to reflect on what they are learning and to share their reflection with their teachers and fellow students are viewed very positively. Blogs and blogging, whether as group activities or for individual journaling activities, are appropriate tools for students reflecting on what is being learned. Ocak [79] qualitative study examined problems and challenges faculty members encountered in blended learning environments and found class discussions that take place on discussion boards or blogs and provide teachers with an electronic record that can be reviewed over and over again to examine how students have participated and progressed over time.

These predominantly qualitatively studies draw attention to the importance of teachers’ conceptions and beliefs of teaching in face-to-face and online settings.

3. METHOD

A comprehensive literature review was conducted to locate papers on teachers’ perceptions on blended learning using search engines and educational databases such as Academic Search Elite, ProQuest, ERIC (Education Resources Information Centre), and Google Scholar. The keywords used were blended learning, blended learning environments, blended teaching, online teaching, eLearning, teacher perceptions, teacher conceptions (as well as combinations of these). Literature related to teachers working across face-to-face and online environments were included in this review.
Selecting only those papers, which specifically focussed on blended learning in higher education, and reported the results of empirical research, further refined this search. Conference papers and dissertations were not included. References from the articles included in the review were examined in order to identify other relevant studies. Following this literature search a database including approximately eighty-seven titles was created using EndNote.

There are four published texts [21-24]; there were few publications, which directly discussed teacher’s perspectives on blended teaching.

4. DISCUSSION

Blended learning research on teachers’ conceptions, beliefs and experiences of teaching in face-to-face and online settings reflects all six objectives of the Blending with Purpose Multimodal framework but student-generated content and reflection were not used to their fullest capacity. Teachers focused mainly on content, social/emotional aspects of blended learning courses for their students, and synthesis/evaluation tools. The studies in this literature review contained faculty-driven rather than student-generated content, as was suggested by Picciano [1] as part of the design of the multimodal model. This literature review shows the importance of teachers’ conceptions, beliefs and experiences and their approaches to both designing and teaching in face-to-face and online settings including learning management systems. In addition, relationships between conceptions and approaches found in previous research have been confirmed. Research results indicate that teachers use multiple approaches including face-to-face methods and online technologies that address the learning needs of a variety of students from different generations, personality types and learning styles.

Even though these studies have been conducted in different settings and by different researchers, many similarities in research results can be seen. Research results indicate that teachers merge several objectives of the Blending with Purpose Multimodal framework together to create learning experiences. Teachers utilise multiple approaches and technologies as a way to transfer information to students. Learning resources are uploaded for students to use on their own and teachers provide information to students in the form of lecture notes, online resources and websites. This enables students to learn at their own pace. Teachers can engage in communications and learning activities with students including email, blogs and discussion boards. Electronic communications enable collaboration between students. Teachers develop pedagogical activities that require students to reflect on what they are learning and to share their reflection with their teachers and fellow students are viewed very positively. Teachers use discussion to present a topic or issue and have students respond to questions, provide their own perspectives while also evaluating and responding to the opinions of others.

The research in blended learning so far has focused more on what teachers need to know in order to integrate technology into their teaching [86] rather than on personal support tools to enable students to use blended learning environments effectively and to learn efficiently. Most studies have been conducted as case studies. Yin [87] argued that “a case study investigates a contemporary phenomenon within its real-life context” (p.13). Even though the case study has this advantage, this research area needs other research methods. The Blending with Purpose Multimodal framework used in this paper can be used as a conceptual framework to examine the effectiveness of blended learning courses. The Blending with Purpose Multimodal framework shows what objectives teachers should consider when designing blended learning courses.

As this literature review shows, teachers’ conceptions and approaches to both design and teaching using blended learning environments is still a developing issue. More research is also needed to gain a more comprehensive understanding of teachers’ perceptions and problems that these teachers face when integrating pedagogy and content knowledge into blended learning environments, the strategies they employ to address these problems, and how they use the blended learning tools (e.g., learning management systems) to overcome these challenges. Discovering what type of pedagogical
and technology changes are being made to blended learning courses, being able to identify design problems, and finding solutions to design and development issues are extremely important to blended learning. The Blending with Purpose Multimodal framework [1] should also be compared to other frameworks to discover to what extent pedagogical frameworks are helping teachers to integrate pedagogy and content knowledge into blended learning environments.
5. REFERENCES


15. Jones, N. and A.M.S. Lau, Blending learning: widening participation in higher education.


