

BLENDED TEACHING AND LEARNING: EXPLORING THE CONCEPT, BARRIERS TO IMPLEMENTATION AND DESIGNING OF LEARNING RESOURCES

E. D. Janse van Rensburg*

<https://orcid.org/0000-0001-8943-5833>

J. W. Oguttu*

<http://orcid.org/0000-0001-6810-4437>

*Department of Agriculture and Animal Health

University of South Africa

Pretoria, South Africa

ABSTRACT

With the advent of the coronavirus disease 2019 (COVID-19), several institutions worldwide have adopted the blended mode of teaching and learning. However, literature on this concept in South Africa and on the African continent is scarce. This scoping review explores the concept of blended approach to training and how to design resources for the blended teaching and learning approach. In addition, the review investigates barriers to the implementation of blended learning. The findings of this study demonstrate that the understanding of the concept of blended teaching and learning is not homogenous and is often left to individual academics to decide on the approach. The review identified several hurdles that need to be addressed for successful implementation of blended teaching and learning, however these are not specific to South African institutions. Available literature on studies done elsewhere and in South African, suggest that some of the identified barriers to adoption of blended teaching and learning are real, while others are perceived or imagined. Lastly, the authors observed that there are several approaches to designing learning resources for the blended mode of teaching and learning. The choice of approach is dependent on the intended purpose for which the specific design is adopted. There is a need for studies that specifically investigate blended learning in Universities in South Africa and on the continent to help identify barriers to adopting blended teaching and learning among institutions that are specific to the South African and African context. Institutions adopting the blended teaching and learning mode of delivery, need to be unambiguous in their philosophy of blending teaching and learning and not leave it to the implementing academics. Policymakers can use the information generated in this review to recommend minimum requirements for a blended delivery mode in public institutions of higher learning.

Keywords: e-learning, distance education, web-based learning, face-to-face instructional mode

INTRODUCTION

Since 2000, technology has rapidly changed, and increasingly a number of institutions have begun to see the benefits of combining several teaching and learning methodologies with the traditional way of teaching. This is what has come to be known as blended learning. This is consistent with a view held by Winstead (2017), who believes that the blended instructional mode can consist of several approaches to educational instruction in combination with e-learning. However, according to several authors, a method of teaching and learning qualifies to be called blended learning only if it involves a meaningful and purposeful combination of two or more learning systems (Cheung et al. 2010; Ellis, Steeds, and Applebee 2006; Muñoz, García, and Valenzuela 2011; Neumeier 2005; Jowsey et al. 2020; Albiladi and Alshareef 2019; Bowyer and Chambers 2017; Medina 2018).

According to Castro (2019), digital technologies such as video capsules and intelligent tutoring systems have the potential to enhance learning and teaching activities. For example, by providing access to more students, facilitating self-paced online learning and advancing the individualised path of learning for each student, blended teaching and learning mode has the potential to improve out-of-class activities and feedback. Furthermore, the capabilities of educational technologies provide harmonised insights into the best approach when aligning learning goals in technology-based approaches (Castro 2019). Therefore, when educational technologies are adopted to manage and support distance education, blended learning can positively impact and influence especially students' achievements (Jowsey et al. 2020).

In view of this, it is not surprising that as e-learning systems have developed, higher education institutions worldwide, have increasingly embraced these systems as a fundamental part of student learning. The driving forces behind this development are expectations of improved professionalism in teaching and learning by students and employers, and the need to make the most of e-learning.

Furthermore, following the outbreak of the coronavirus disease 2019 (COVID-19) pandemic caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus, it has become more important than ever to explore the use of blended teaching and learning. As a result, internationally, there has been a move towards blended teaching and learning in the majority of tertiary institutions (Jowsey et al. 2020; Zimba, Khosa, and Pillay 2021). However, the focus seems to be mainly on combining digital technology for teaching and learning with conventional teaching approaches (Castro 2019; Jowsey et al. 2020; Zimba et al. 2021). Given that education is a multifaceted system that requires various perspectives and analysis levels to understand its contexts, dynamics and interaction of actors, specifically regarding technological novelties (Castro 2019), there is a need to explore questions such as: "What is the blended mode

of teaching and learning, how should learning material be designed and developed, and what are some of the barriers to implementation of blended learning?" These questions are very pertinent, especially in the South African and African contexts, given the inherent shortage of resources experienced by countries on the African continent.

In this article, we endeavour to offer a detailed description of blended learning and how blended learning compares with other approaches to teaching and learning. We also discuss the designs of different resources for the blended instructional mode, and the barriers to the uptake of this mode of teaching and learning.

METHODS AND MATERIALS

A study was undertaken using a scoping review methodology to investigate blended teaching and learning studies, assess the type and scope of research undertaken, and identify areas for further research. Sources, such as electronic reference lists, policies and textbooks, were utilised to identify relevant resources. Due to the high cost of translation, only works published in English were considered. Initially, all pertinent articles were identified using keywords. This yielded numerous articles, some of which were irrelevant. Subsequent screening identified 278 papers that did not meet the inclusion criterion, leaving 30 papers, one book, two policy papers and two Acts that were included in this scoping review.

RESULTS AND DISCUSSION

Blended learning as a concept

The term blended learning is increasingly being used in both academia and corporate circles. With increasing popularity, several authors have thus attempted to define the concept of blended learning. However, the definitions are varied and include the following:

Staker and Horn (2012) define blended learning as:

“a formal education programme in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path and/or pace; and at least in part at a supervised brick-and-mortar location away from home.”

According to Bonk and Graham (2006), there are three variations of blended teaching and learning, and these include:

- Blended learning is a mixture of instructional modalities (or delivery media).
- Blended learning is a combination of instructional methods.

- Blended learning is a fusion of online and face-to-face approaches.

In view of the above definitions by Bonk and Graham (2006) and Staker and Horn (2012), blended learning is a broad concept that includes all learning systems. This is consistent with the definition by Whitelock and Jelfs (2003), who take into consideration the historical emergencies of blended learning and thus define blended learning in the following three ways:

- Blended learning integrates traditional teaching and learning with web-based online approaches.
- Blended learning uses a combination of media tools in an e-learning environment.
- Blended learning combines several pedagogic approaches, regardless of whether learning technology is employed or not.

Meanwhile, Oliver and Trigwell (2005) have put forward the following definitions of blended learning:

- Blended learning is a combination of web-based technologies used to achieve an educational goal.
- Blended learning is a combination of pedagogical approaches, such as behaviourism, constructivism and cognitivism, with the aim of producing optimal learning outcomes irrespective of whether instructional technology is adopted or not.
- Blended learning combines instructional technology (irrespective of form) with face-to-face instructor-led training.
- Blended learning combines instructional technology with work-integrated tasks.
- Blended learning is skills-driven learning that integrates self-paced learning with an instructor or facilitator of teaching.
- Blended learning is attitude-driven learning aimed at promoting specific behaviour by combining various events and delivery media.
- Blended learning is competency-driven learning aimed at developing workplace competencies by making use of performance support tools, knowledge management resources and mentoring.

The Open Distance Learning Policy of the University of South Africa (Unisa 2008) defines blended learning as follows:

“blended learning is accomplished by using multiple teaching and learning strategies, a range of technologies in combination with face-to-face interaction and the deployment of both physical and virtual resources.”

Therefore, in what looks like a departure from the other authors who have defined blended learning, the definition provided by Unisa suggests that blended learning should not only consist of a combination of different technologies with face-to-face teaching and learning modes of delivery but should also consider different pedagogies. In light of this definition, several approaches to delivering the blended mode of learning and teaching are possible.

Although Oliver and Trigwell (2005) suggest that the generally accepted view of blended learning is the merging and/or integration of the traditional instructional mode with web-based online approaches to learning, as shown in the preceding paragraphs, this is just one aspect of blended mode of teaching and learning. In fact, there is no single accepted definition among writers, teachers and learners of the meaning of blended learning. This poses a problem to institutions wishing to adopt the blended mode of teaching and learning. For example, the definition of blended learning, as articulated in Unisa’s Open Distance Learning Policy, suggests that the institution is open to various blended teaching and learning modes. The implication of this, is that the institution leaves it to the implementer to decide on the approach to the blended mode to be adopted. The authors of the present study are of the view that this might be the case across all other institutions of higher learning in South Africa that have had to adopt blended learning in the advent of the outbreak of COVID-19 and the eventual closure of their campuses. While this allows for flexibility in adoption of the blended mode of teaching and learning, the problem that arises due to this approach is how institutions ensure that a meaningful and purposeful combination of two or more learning systems is implemented each time.

Barriers to the uptake of blended teaching and learning

Despite the increasing use of web-based distance learning and its potential to revolutionise higher education, the uptake of blended learning by institutions in the past has been very slow (Cheung et al. 2010). This has been attributed to instructors not being familiar with how to design courses in the blended instructional environment. This is in addition to the various barriers to uptake of blended teaching and learning. Powell et al. (2015) identify the following barriers to the implementation of blended learning:

- Barriers related to technology, such as access, infrastructure, hardware and software

issues.

- Difficulty in finding high-quality content and software programs that can be integrated well in the curriculum.
- A lack of universally adaptable data that educators can use to develop blending learning
- Difficulty in identifying or building proper learning management systems to support personalised pathways, proficiency-based grading and instruction, multiple forms of student evidence, and the integration of different content providers for seamless reporting.
- Financial limitations.
- The problem of effective communication.

On the other hand, Winstead (2017) identified the following six disadvantages to blended learning, which could also act as impediments to the adoption of blended learning:

- Lack of technical infrastructure, which may be expensive to acquire
- Information Technology (IT) literacy or lack thereof
- Pace barriers (lessoning to recording may cause delay)
- High workload for educators who end up being overworked
- Cognitive overload
- Plagiarism and credibility problems.

According to Klein and Noe (2006), other barriers to implementing blended learning are student-perceived barriers. Often these barriers are not actual barriers, but they occur when students think that they will not reach their goals due to an occurrence. A perceived barrier can be something like: “There are no face-to-face classes”; “I will not be able to communicate effectively with the lecturer”; “I am not good with computers”; or “I will not be able to hand in my assignments correctly”. Despite all the possible benefits of blended learning, Cheung et al. (2010) suggest that it is not uncommon for students to have a more negative attitude towards the blended instructional mode, and e-learning as compared to face-to-face learning. This may be attributed to the ineffective instructional design and/or students’ perception that the face-to-face instructional mode of teaching and learning is superior to blended or e-learning (Cheung et al. 2010).

There are also perceived barriers experienced by academic staff, and among these are issues pertaining to policies, support for academic staff by management, computer skills of student and staff as well as students’ ability to access required study material. Absence of proper

policies regarding blended teaching and learning and inadequate support from management regarding implementation of blended teaching and learning, hinder successful implementation of blended learning. In addition, inadequate computer equipment, large classes and lack of teaching staff can also impede implementation of blended learning (Tshabalala, Ndeya-Ndereya, and Van der Merwe 2014). Tekane, Pilcher, and Potgieter (2020) explored the response of students at the University of Pretoria to the shift towards blended learning due to the COVID-19 pandemic. It was observed that students valued the face-to-face component more highly. The reason for students placing a higher value on face-to-face component as compared to other web based components, is attributed to the opportunity the face-to-face mode of delivery offers to ask questions and get answers to questions in real time as opposed to the e-Learning mode of delivery. In the same study, it was noted that students found the discussion boards to be the least helpful due to the overwhelming number of postings and the pressure to participate.

The uptake of blended learning relates to the security of course content and personal information of students (Kritzinger and Von Solms 2006). If information is not protected, it could lead to financial losses on the part of the institution due to the material becoming freely available. At the same time, legislation in South Africa requires educational institutions to protect personal information and may not make it public (Government South Africa 2008; Petrocelli 2006; Government South Africa 2013). This creates a dilemma with respect to how institutions in South Africa can implement blended learning while ensuring that students' private information is not made public.

According to Bruggeman et al. (2021), lecturers who have a favourable attitude towards teaching and learning centredness, student-centred pedagogical beliefs, a realisation of the need to change (i.e., the pedagogical wake-up call), liking for experimentation, speaking out disposition, critical self-reflection and ability to link technologies to the learning processes (i.e., creative professionals), are best suited to implement blended learning and teaching. In contrast, lecturers who prioritise other responsibilities over teaching, prefer an instructor at the epicentre, regard blended as blurred learning delivery mode in need of a clear understanding and feel apprehensive about using technology, do not readily adapt to blended learning.

Without good computer skills or opportunities to develop such skills, it is impossible to foster independent, meaningful integration of e-learning into blended learning. Therefore, educators need to be aware of this to be able to select, use, assess, perfect, create or recreate teaching strategies that are effective in an e-learning and consequently the blended learning environment (Muñoz et al. 2011; García-Valcárcel and Tejedor 2009). In most universities, it is not a requirement to have a teaching qualification when applying for an academic vacancy.

Therefore, a lot of lecturers do not have the skills and training needed to execute teaching and learning effectively. This makes it even harder for institutions to implement blended learning in a meaningful way. However, to address this problem, universities have implemented training programs for newly appointed lecturers (Bhukuvhani, Chiparausha, and Zuvalinyenga 2012; Kubrushko and Nazarova 2013; Husband 2015; Florensa et al. 2017). The question that remains though is if these training programmes touch on the institutions' philosophy of the blended instructional mode. Research is needed in this area especially with respect to institutions in South Africa and on the continent.

Access to the internet has also been identified as an impediment to uptake of blended teaching and learning that involves integration of web-based learning. According to a study by Prinsloo and Van Rooyen (2007) on how second-year Unisa accounting students approach blended learning, online material not being readily accessible to students due to a lack of internet connectivity was among the factors identified that impede the adoption of learning in the blended environment. Prinsloo and Van Rooyen (2007) thus recommended that the use of portable electronic storage systems be adopted instead of computers housed in one venue. The same authors are of the view that this could enhance blended learning. This view presupposes that majority of students have access to computers with CD-ROMs or ports that gives them access to information stored on portable storage devices without necessarily having to access the internet. However, with CD-ROMs being phased out in modern computers, and thus most modern computers not having CD-ROM players anymore, the alternative is to use USB drives in the place of CD-ROMS.

Maboe (2017) observed that although Unisa 3rd year students benefitted from the online interactivity, they tended to experience more challenges than benefits from the online portion of the blended teaching and learning system. Moreover, the main challenges were of academic, institutional, and administrative origin. The administrative issues included computer illiteracy, computer shortages, dysfunctional computer laboratories, lack or poor internet connectivity, incompetent distance education setting technicians and network unavailability. The students in the study complained that the lecturers either did not respond or delayed to respond to queries via emails and discussion forums. Baloyi (2013) also found that Unisa students and lecturers in the Department of Adult Basic Education and Training experienced internet and network problems, which prevented them from experiencing effective learning and teaching. Kleinveldt, Schutte, and Stilwell (2016) in a study at the Cape Peninsula University of Technology (CPUT) on the blackboard learning management system (LMS), found that students and staff mainly experienced two difficulties namely: logging into and registering on the system.

Despite the numerous challenges to adoption of blended learning and teaching identified

in the preceding paragraphs, several authors have identified a number of advantages of implementing the blended mode of teaching and learning approach. For example, a study on blended teaching and learning of social work educators in nine South African contact universities, noted that learning in and out of the classroom could be promoted by adopting principles for enhanced student engagement via blended teaching and learning. The study specifically found that discussion forums, YouTube, Facebook, Podcast, WhatsApp and blogs were meaningful for student engagement (Zimba et al. 2021).

Furthermore, Tekane et al. (2020) explored the response of students at the University of Pretoria to the shift towards blended learning following the COVID-19 pandemic outbreak, and noted that students viewed the online component as being flexible and offered infinite opportunities to practice or revisit concepts. Lastly, Kleinveldt et al. (2016) in a study at the Cape Peninsula University of Technology (CPUT) on the blackboard LMS, found that the LMS was ideal for handling assignments, communicating with students and made marking easier.

In conclusion, there are numerous barriers with potential to impede the implementation of blended teaching and learning, specifically the e-learning aspect, that range from financial limitations, perceived barriers to poor infrastructure. It is clear though that the main barriers observed in the literature are mainly software and hardware issues, with high costs, low or poor computer literacy, lack of guideline regarding implementation and design, workload of staff, plagiarism and credibility problems, and internet and network issues also contributing to the slow uptake of blended learning.

Meanwhile, the main disadvantages to blended teaching and learning with potential to impede uptake of blended learning by institutions relates to the technology components of the methods with technical issues, connectivity and network issues being the main aspects. Whereas the main advantages of blended teaching and learning with potential to enhance uptake of the delivery mode, relates to flexibility and availability of the online materials.

Designing and implementing blending teaching and learning

According to Ellis et al. (2006), blended learning can be classified into four categories: A, B, C and D. From a structural perspective, this classification is based on two aspects: how the design influences the teaching and whether the design is deeply embedded or is surface unintegrated. There are two extremes of designs of blended learning and teaching based on this categorisation: Category A design is the type of design that reshapes approaches to teaching and is deeply embedded at the same time. In contrast, Category D design is the type that is unrelated to teaching and is also surface unintegrated.

Category A designates an in-depth approach to design. This category of design puts

emphasis on the improvement of student thinking. In this category, the inclusion of technological media into design is meant to augment understanding by students (Ellis et al. 2006).

Category B also demonstrates an in-depth approach to design. However, it is not as deep as Category A. But just like Category A, this category also integrates technological media into the design of courses. With this category, there is a gradual introduction of technological media, and there is an openness to new media (including trials and pilot programmes). Therefore Category B, gives the perception that time is required to integrate technological media and that some additional expertise or training is required (Ellis et al. 2006).

Category C has a surface approach to design. There is lack of familiarity with technological media incorporated into the design. This results in teachers getting overwhelmed to some degree (Ellis et al. 2006).

The last category, Category D, also shows a surface approach to design. There is a poor perception towards the time or effort involved in designing the course, and there is no significant link between design and approaches to teaching (Ellis et al. 2006).

According to Cheung et al. (2010), transitioning from pure, face-to-face to blended learning can be a painful process that takes more time to design than expected. As a result, mistakes are inevitable and may affect every step of the process, from acceptance to the implementation of new elements. Moreover, it has been observed that students find it challenging to accept blended learning; they tend to find it challenging to participate in the new elements of e-learning. Therefore, to facilitate a smooth transition to blended learning, the instructor must work as an instructional systems designer, technology expert and course coordinator. However, these roles are often not well defined and, as a result, the educators are not able to assist students effectively in transitioning to blended learning.

According to Cheung et al. (2010), designing blended learning starts with creating the course overview and re-designing the lesson plan to incorporate all the learning systems to be used in a meaningful way. To make the most of teaching in the blended learning mode that involves the use of supportive educational technologies, the lecturer needs to think of how online materials can be used to boost teaching. Lecturers must implement reflective discussions, cooperative involvement and active revision to the new learning environment (Neumeier 2005; Cheung et al. 2010). However, in contact universities, the instructional delivery method that is commonly adopted is the face-to-face method supplemented with online components, which at times is only cited but not integrated meaningfully. As a result, the procedures or tools considered appropriate or required for instructional design are minimal. Therefore, with the rushed implementation of blended learning as was observed in the South African institutions of

higher learning, necessitated by subsequent restrictions on gathering of people that followed the outbreak of the COVID-19 pandemic, raises questions about the standard of implementation of blended learning in many of the contact South African universities. The focus of blended learning should not be choosing the right, the best or the most-innovative method in place of the traditional instructional approach to teaching and learning. Instead, the focus should be designing a learning environment that functions as a whole by taking into account certain facets of both learners and teachers, such as their dispositions, aptitudes and attitudes (Neumeier 2005).

In most blended learning environments, one or two major teaching and learning modes tend to dominate the learning process and experience. It is therefore essential to select the main method of teaching and learning that will ensure that the course design (structure and layout) is appropriate. However, the choice of the main mode should only be made after the learning aims, students, lecturers and infrastructural resources have been carefully assessed (Neumeier 2005).

According to Cheung et al. (2010), traditional instructional design practices that are known to work well in face-to-face environments may not be useful in blended environments. Therefore, the instructional design for the two modes of delivery has to be approached differently. The recommended process of designing for blended learning, consists of the following: creating an overview for the course; re-designing the lesson material; preparing lesson material; doing research and preparing resources; incorporating these into the learning management system (LMS); and reviewing the created lessons and material. In addition, Bowyer and Chambers (2017) are of the view that for a blended learning programme to be successful, two things are essential: comprehensive teacher or tutor training and ongoing evaluation (teacher, tutor and students). Cheung et al. (2010) recommends following a pre-designed blended learning template that specifies which learning system elements will be used for learning. This is then followed by the development of the materials and resources to be used as learning objects. Once the development of learning material and resources is completed, they are launched onto the LMS adopted for blended learning. The authors of the present work noted that this is the approach adopted by Unisa (Unisa 2013). This was expected given that Unisa is traditionally a distance learning institution and has used blended learning in most of its courses. However, there is no evidence to suggest that this is the case in many contact universities in South Africa and elsewhere in light of the fact that implementation of blended learning was on short notice following the outbreak of COVID-19.

According to Bowyer and Chambers (2017), a well-designed blended learning environment improves outcomes, strategically uses classroom time and improves online discussion. A well-designed blended learning environment, therefore, requires coherent and co-

ordinated planning to be successful. This includes intentional planning of financial, technical and human resources, course scheduling, and tutor and student support (Bowyer and Chambers 2017).

CONCLUSION

Blended teaching and learning is the future of education in both face-to-face and distance learning institutions. However, the interpretation of blended learning is as diverse as there are authors and educators (teachers/lecturers) willing to implement the concept. Furthermore, blended learning has various designs that need to be considered by institutions intending to adopt the mode of delivery. However, in light of the rushed implementation of blended learning particularly by the traditional contact institutions, there is a need for studies that investigate the designs adopted by institutions in South Africa and on the continent. Such studies will also help identify barriers that are specific to institutions. The present study was able to identify general impediments to adoption of blended learning mode, and these include issues of connectivity, lack of or limited understanding of the benefits of blended teaching and learning by both academics and learners. Therefore, institutions need to implement measures to overcome these barriers including the perceived barriers. The findings reported in this study can be used to benchmark the blended teaching and learning approaches adopted by various institutions of higher learning in South Africa in terms of design, structure and implementation. Furthermore, the findings of the present study can also be used to assess the implementation process of blended teaching and learning approaches adopted by various higher education institutions in South Africa.

REFERENCES

- Albiladi, W. S. and K. K. Alshareef. 2019. "Blended Learning in English Teaching and Learning: A Review of the Current Literature." *Journal of Language Teaching and Research* 10: 232–238.
- Baloyi, G. P. 2013. "Learner support in context of open distance and e-learning for adult students using new technologies." *Journal of Communication* 5(2): 31–37.
- Bhukuvhani, C., B. Chiparausha, and D. Zuvalinyenga. 2012. "Effects of electronic information resources skills training for lecturers on pedagogical practices and research productivity." *Journal of Education and Development using Information and Communication Technology* 8: 16–28.
- Bonk, C. J. and C. R. Graham. 2006. *The handbook of blended learning environments: Global perspectives, local designs*. Jossey-Bass/Pfeiffer, San Francisco.
- Bowyer, J. and L. Chambers. 2017. "Evaluating blended learning: Bringing the elements." *Research Matters: A Cambridge Assessment publication* 23: 17–26.
- Bruggeman, B., J. Tondeur, K. Struyven, B. Pynoo, A. Garone, and S. Vanslambrouck. 2021. "Experts speaking: Crucial teacher attributes for implementing blended learning in higher education." *The Internet and Higher Education* 48: 1–11. <https://doi.org/10.1016/j.iheduc.2020.100772>.
- Castro, R. 2019. "Blended learning in higher education: Trends and capabilities."

Information Technologies 24: 2523–2546.

- Cheung, K. S., J. Lam, N. Lau, and C. Shim. 2010. "Instructional Design Practices for Blended Learning." *2010 International Conference on Computational Intelligence and Software Engineering*: 1–4. <https://doi.org/10.1109/CISE.2010.5676762>.
- Ellis, R. A., A. F. Steeds, and A. C. Applebee. 2006. "Teacher conceptions of blended learning, blended teaching and associations with approaches to design." *Australasian Journal of Educational Technology* 22: 312–335.
- Florensa, I., M. Bosch, J. Gascón, and N. Ruiz-Munzon. 2017. "Teaching didactics to lecturers: A challenging field." In *Proceedings of the Tenth Congress of the {E}uropean Society for Research in Mathematics Education (CERME 10)* 10: 2001–2008.
- García-Valcárcel, A. and F. J. Tejedor. 2009. "Training demands of the lecturers related to the use of ICT." *Procedia - Social and Behavioral Sciences* 1: 178–183. <https://doi.org/10.1016/j.sbspro.2009.01.033>.
- Government South Africa. 2008. *Consumer protection act, Act 68 of 2008*.
- Government South Africa. 2013. *Protection of personal information Act, Act 4 of 2013*.
- Husband, G. 2015. "The impact of lecturers' initial teacher training on continuing professional development needs for teaching and learning in post-compulsory education." *Research in Post-Compulsory Education* 20: 227–244. <https://doi.org/10.1080/13596748.2015.1030262>.
- Jowsey, T., G. Foster, P. Cooper-ioelu, and S. Jacobs. 2020. "Blended learning via distance in pre-registration nursing education: A scoping review." *Nurse Education in Practice* 44: 1–10. <https://doi.org/10.1016/j.nepr.2020.102775>.
- Klein, H. and R. Noe. 2006. "Motivation to learn and course outcomes: The impact of delivery mode, learning goal orientation, and perceived barriers and enablers." *Journal of Personnel Psychology* 59: 665–702. <https://doi.org/10.1111/j.1744-6570.2006.00050.x>.
- Kleinveldt, L. T., M. Schutte, and C. Stilwell. 2016. "Embedded librarianship and Blackboard usage to manage knowledge and support blended learning at a South African university of technology." *South African Journal of Libraries and Information Science* 82: 62–74. <https://doi.org/10.7553/82-1-1592>.
- Kritzinger, E. and S. Von Solms. 2006. "E-learning: Incorporating Information Security Governance." *Issues in Informing Science and Information Technology* 3: 319–325.
- Kubrushko, P. F. and L. I. Nazarova. 2013. "Professional development of technical university lecturers in field of innovation teaching." In *2013 International Conference on Interactive Collaborative Learning*, 467–469.
- Maboe, K. A. 2017. "Perspectives of distance higher education students on online interaction." *Progressio* 38: 17–32.
- Medina, L. C. 2018. "Blended learning: Deficits and prospects in higher education." *Australasian Journal of Educational Technology* 34: 42–56.
- Muñoz, F. I., P. S. García, and C. G. Valenzuela. 2011. "Teaching Skills in Virtual and Blended Learning Environments." *Comunicar* 18: 107–114. <https://doi.org/10.3916/C36-2011-03-01>.
- Neumeier, P. 2005. "A closer look at blended learning – parameters for designing a blended learning environment for language teaching and learning." *ReCALL* 17: 163. <https://doi.org/10.1017/S0958344005000224>.
- Oliver, M. and K. Trigwell. 2005. "Can 'Blended Learning' Be Redeemed?" *E-Learning* 2: 17–26. <https://doi.org/10.2304/elea.2005.2.1.17>.
- Petrocelli, T. D. 2006. *Data protection and information lifecycle management*. Prentice Hall Professional Technical Reference.
- Powell, A., J. Watson, P. Staley, S. Patrick, M. Horn, L. Fetzer, L. Hibbard, J. Oglesby, and S. Verma. 2015. "Blending learning: The evolution of online and face-to-face education from 2008–2015." *International Association for K-12 Online Learning*: 1–19.

- Prinsloo, P. and A. Van Rooyen. 2007. "Exploring a blended learning approach to improving student success in the teaching of second year accounting." *Meditari Accountancy Research* 15: 51–69.
- Staker, B. H. and M. B. Horn. 2012. *Classifying K–12 Blended Learning*. Innosight Institute, Inc.
- Tekane, R., L. A. Pilcher, and M. Potgieter. 2020. "Blended learning in a second year organic chemistry class: Students' perceptions and preferences of the learning support." *Chemistry Education Research and Practice Journal* 21: 24–36. <https://doi.org/10.1039/c9rp00099b>.
- Tshabalala, M., C. Ndeya-Ndereya, and T. Van Der Merwe. 2014. "Implementing blended learning at a developing university: Obstacles in the way." *Electronic Journal of e-Learning* 12: 101–110.
- Unisa see University of South Africa.
- University of South Africa. 2008. *Unisa Open Distance Learning Policy*.
- University of South Africa. 2013. *Framework for the implementation of a team approach to curriculum and learning development at UNISA*: 1–13.
- Whitelock, D. and A. Jelfs. 2003. "Editorial." *Journal of Educational Media* (Special Issue on Blended Learning) 28: 99–100.
- Winstead, S. 2017. *6 Disadvantages of Blended Learning You Have to Cope With*. Blog.
- Zimba, Z. F., P. Khosa, and R. Pillay. 2021. "Using blended learning in South African social work education to facilitate student engagement." *Journal of Social Work Education* 40: 263–278. <https://doi.org/10.1080/02615479.2020.1746261>.