ARTICLE

THE EFFECTIVE USE OF BLENDED LEARNING TOOLS THAT PROMOTE SUCCESS AMONG LOW PERFORMING SOUTH AFRICAN UNDERGRADUATE STUDENTS

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ABSTRACT

A major problem in higher education in South Africa is the low success rate and high dropout rate of undergraduate students. The high dropout rate could be the result of socio-economic factors, academic shortcomings or merely the fact that the current way of teaching does not meet the needs of the 21st century student. In this literature review paper, the aim was twofold. First, existing literature was reviewed to identify research conducted on blended learning tools that can promote student success and the relationship between the research conducted and practical applications of these blended learning tools were indicated. Second, five key success factors were selected and the role of blended learning, as well as its tools, were discussed in relation to the key success factors. The result and contribution is a list of proposed blended learning tools, with suggestions on its use, to address the factors that influence students' success by enhancing the learning process. It is recommended that

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further research be conducted to determine by means of a pilot approach, the extent to which the use of these blended learning tools is successful in enhancing student success.

Keywords: assessments; blended learning; blended learning tools; critical thinking; higher education; lack of prior knowledge; motivation; problem solving; student success; under-preparedness

INTRODUCTION

Higher education in South Africa is currently facing high student dropout rates (HESA 2009). HESA's working group suggested to the South African Parliament that the higher education sector find better ways of teaching and learning that could improve outputs (HESA 2011), as it is clear that the current teaching approaches are no longer effective.

For students living in the information age the current model of teaching, which involves direct transfer of knowledge from a lecturer to a student in a classroom setting, is no longer relevant (Aleksić and Ivanović 2013; Slabbert, de Kock and Hattingh 2011). Everything we do is influenced by information communication technology (ICT). Therefore, it is no longer feasible to use the current teaching and learning strategies only, but more interactive approaches are required.

Students are increasingly engaged in technology-related activities, except when they are in the classroom. According to Berk (2010, 4-7), Black (2010, 95-96), Howe and Strauss (2003, 2-3), and Reilly (2012, 4-5) the current generation's students flourish in situations that involve technology, that are visual, require rapid response and feedback, are flexible, connected, interactive and encourage collaboration. Traxler (2010, 153) has observed that the formal university system is currently not synchronised with the world that students experience and live in, and thus suggests that changes be considered to align the universities with the use of mobile technology.

Proulx (2012) mentions five ways in which technology could impact higher education. First, it could ensure that online learning would keep on growing in future. Second, technology can be used to provide information so that classroom time can be reserved for discussion and group exercises (flipped classroom). Third, the blended learning model, providing more flexibility to adult and working students, will be fully embraced by students. Fourth, a new instructional model is needed to create a more in-depth experience that will prepare students for the industry and personalize courses according to students' needs. Last, the cost of higher education might decrease if universities could find a new approach that incorporates online learning, flipped classrooms and new assessment models.

Therefore, new strategies for teaching need to be investigated and incorporated in our approach to teaching and learning. One of these teaching and learning strategies is blended learning, and the focus of this article is to answer the question *how blended learning tools can be used to promote success among low performing South African undergraduate students.*

METHODOLOGY

To answer this question, a literature review was done. According to Mouton (2001), a literature review study provides a good understanding of the research done in a specific field. Hart (1998) also mentions that the purpose of a literature review is to identify relationships between ideas and practice, relating ideas and theory to applications and to establish the context of a problem. In this literature review, literature and empirically based research studies that have been conducted on blended learning were identified by searching academic databases and the Internet. Keywords such as blended learning, blended learning tools, blended learning in higher education, motivation, critical thinking, under-preparedness, assessment, accounting research and higher education were entered into the search engines. These articles were then grouped according to identified success factors and analysed. To relate the research done with practical applications, blended learning tools were examined to determine whether they could assist in addressing the identified success rate factors either inside or outside the classroom. The result of this relationship between blended learning tools and success rate factors was tabled at the end of the discussion of each one of the success rate factors. This was done to indicate how blended learning tools could possibly promote student success.

BLENDED LEARNING AND BLENDED LEARNING TOOLS

While authors have various opinions on what the definition of blended learning is, Pankin, Roberts and Savio (2012) describe blended learning as learning opportunities that use more than one learning method, either inside or outside the classroom. Driscol (2001) mentions four variations of blended learning, namely (a) the combination of various web-based technologies, (b) the combination of various pedagogical approaches, (c) the combination of any form of instructional technology with face-to-face instruction, and (d) the combination of instructional technology with actual job tasks. Similarly, Staker and Horn (2012) describe blended learning as part online learning and part learning in a supervised environment where these two parts are connected to provide an integrated learning experience. Within the boundaries of this description, blended learning can be implemented in one of four models, namely:

1. rotation model
2. flex model
3. à la carte model
4. enriched virtual model

However, Graham (2004), Köse (2010, 2796) and Owston, Wideman and Murphy (2008) prefer to refer to blended learning as a combination of face-to-face instruction and online learning. Therefore, part of the delivery in a blended learning environment is

online so that students and lecturers as well as institutions become more productive, both academically and financially (Bailey, et al. 2013, 3). So, to establish a blended learning approach, lecturers need to redesign their courses and course material to integrate the use of technology with the traditional face-to-face model (Poon 2013, 41) of teaching and learning. Blended learning is defined here as the range of possibilities presented by combining the Internet and digital media with established classroom forms that require the physical co-presence of a lecturer and students (Friesen 2012), because blended learning is a combination of face-to-face teaching and e-learning that best employs both these approaches (Aleksić and Ivanović 2013).

Tayebinik and Puteh (2012,103,108) have reviewed the literature on the advantages of blended learning in comparison with pure on-line or face-to-face instruction. They suggested that blended learning improves communication, provides a sense of community, improves academic performance, allows for collaborative tasks, creates opportunities for active participation, enables adequate feedback, and constitutes a fun and practical way of teaching and learning.

The positive effect of blended learning on teaching and learning has been reported by various authors. For example, studies by Bawaneh (2011, 1, 48), Delaney, McManus and Chew (2010) and Hiralaal (2012, 316) have revealed that the availability of online learning material in addition to face-to-face classroom sessions in a blended learning environment resulted in improved exam results, led to a deeper understanding of learning material, and improved the comprehension of subject knowledge, procedures, terms and principles. In the blended learning environment, additional material is available online to everyone through hyperlinks to various websites (Hiraal 2012, 316), which increased flexibility in terms of learning (Dziuban, Hartman and Moskal 2004, 3, 5).

In addition to better examination results in some cases, the levels of motivation and attitude of students towards the subject also improved when learning occurred in a blended learning environment (Delaney et al. 2010; Hiralaal 2012, 316; Sucaromana 2013, 141; Tseng and Walsh 2016, 50). Students were also satisfied with the learning climate, which resulted in significantly higher levels of intrinsic motivation (Sucaromana 2013, 141).

Dziuban et al. (2004, 3,5) and McKenzie, et al. (2013, 116) state that the use of repeated online formative assessments results in significantly higher summative assessment scores. Although the systematic use of formative assessment would have a positive effect on summative assessment, the use of blended learning probably facilitates more frequent and different forms of formative assessment. With online assessments, students also receive immediate feedback (Delaney et al. 2010; Hiraal 2012, 316).

Students need to be actively involved to develop critical thinking skills. Dziuban et al. (2004, 3, 5), and Hiraal (2012, 316) have found that students show increased interaction among themselves as well as with lecturers when working in a blended learning environment. The use of a wiki (website where a group of people work together to add and edit content) in a blended learning environment was investigated by Snodgrass (2011, 576). Snodgrass (2011, 576) found that combining the wiki with face-

to-face activities could improve collaboration between students, which further enhances their ability to apply critical thinking skills and reasoning.

To give students exposure to a real-life example of the subject matter being studied, Siegel, Omer and Agrawal (1997, 217) experimented with a series of videos. These videos were created to provide students with an indication of what actually happens in a real-life audit. Siegel et al. (1997, 224) reported that the students' performance improved after they had watched the video in class.

Based on the case presented above, it appears that students benefit from a blended learning environment. They have access to additional material, are more motivated, and are encouraged to collaborate and gain a better understanding of the workplace. Moreover, they have repeated access to online assessments, with the outcome of better examination results.

While blended learning is seen as the combination of classroom teaching, the Internet and digital media (Friesen 2012), instructors of the Intel corporation believe that blended learning cannot be established without online technology tools (Intel corporation 2012, 1). Based on the work of Devedzic and Jovanovic (2015, 603), Gwaltney (2012), LaBanca, et al., Lesser (2016, 44–46), Staker (2011), Tenkely (n.d.), Thomson (2014), Walsh (2012) and researchers at Intel corporation (2012), the authors drew up the list of possible blended learning tools shown in Table 1 below.

Table 1: Examples of blended learning tools

Category	Blended learning tool	Use
Learning management system (LMS)	Blackboard Moodle Edmodo	Upload course content like study guides, exercises, memorandums and videos Create online assessments Create discussion forums/blogs Share files
Cloud storage	DropBox Google Drive 4Shared	Host course content and share files
Social media tools and networks	Schoology – social network for learning Facebook WordPress Twitter	Discussions Upload information Feedback Reflection

Category	Blended learning tool	Use
Video and audio creation	VoiceThread Audacity Camtasia Screencast-O-Matic ShowMe PowerPoint animated slideshows Educreation Flicker	Produce instructional videos and podcasts Record a presentation, voice and audio Record whiteboard Record slideshow
Existing video platforms	YouTube Education TED Khan Academy Academic Earth	Provide videos on large variety of topics
Interaction	Kahoot Socrative Clickers Survey Monkey Blackboard Mentimeter	Voting or polling tool, audience response system (asynchronous or synchronous)
Collaboration	Wikispaces Classroom Google docs Skype ProofHub MindMeister	Work together to create and edit documents Communicate online Share files Live chat feature
Slide shows	PowerPoint Prezi	Create multimedia or animated slideshows
Video and web conferencing	Blackboard Collaborate Skype PalBee Scribblar Twiddla BigMarker	Bring human resources into the class Discussions
Back channel	TodaysMeet Twitter	Students post questions while lecture is online
Access to existing courses	MOOC	Students can access training courses of other institutions
Electronic incentives	Class Badges Mozilla Open Badges Open Badges	Students can be rewarded for sections completed

In view of the positive results of blended learning research and the various uses of blended learning tools, the question arises how these blended learning tools can be used to promote success among low performing South African undergraduate students; specifically to address the key factors identified that influence student success. This paper

could not begin to address all the identified success factors, and therefore only focuses on a few that can be accommodated within the teaching and learning environment of accountancy education in a developing country.

KEY FACTORS THAT INFLUENCE STUDENT SUCCESS

A plethora of international and national study findings are available on the factors influencing academic success. Scholarly literature on this topic contains common factors such as attitudes, problem-solving skills, values, emotional intelligence, socio-economic status, ethnicity, community support, interest in the course, cognitive competencies, time management, language and communication skills, previous academic performance, quality of teaching, cultural expectations, peer culture, status of residential area, access to technology, interaction between students and the academic and social systems of the university, and financial support (Gardiner 1994; Greg 2009; Kim, et al. 2010; Radford 2010; De Clercq and Venter 2009, 59; de Hart, et al. 2005; Foxcroft and Stumpf 2005; Roos 2009, 49; Ngidi 2007, 718; van Eeden, de Beer and Coetzee 2001; Zewotir, North and Murray 2011).

Under-performance, especially in South Africa with its history of unequal schooling, often reflects the negative impact of educational shortcomings, rather than a student's potential to succeed in higher education. Therefore, this article focuses on success factors which lecturers and students in developing countries deemed important. In a study conducted by Sadler and Erasmus (2005) on distance learning for Accounting Honours students, the students provided these factors in order of priority: timeous and regular examination preparation, logical reasoning, consistent effort, and effective examination techniques. In a similar study on success factors, Steenkamp, Baard and Fick (2009, 113) have found that poor class attendance, a lack of accounting knowledge, insufficient time and a lack of English instruction are the main contributing factors that lead to poor student performance.

Another challenge for higher education is that employer expectations have changed considerably over the years and students do not always meet these expectations. Kavanagh and Drennan (2008, 295), have found that employers expect students to have problem-solving skills, real-life experience of the business world and basic accounting skills. Polyacskó (2009) has also found that the skills most lacking in many graduates are language proficiency, the ability to apply knowledge in practice, and individual motivation. Furthermore, their motivational levels and commitment seem questionable, and influence their attitude to their work. Polyacskó (2009) also mentions the relation between motivation and attitude.

For the purposes of this paper, the following five key factors were identified as the most prominent:

1. Understanding basic accounting principles
2. Attitude and motivation of students towards teaching and learning

3. Additional exposure to pretesting and preparations for examinations
4. Critical thinking skills (applying knowledge, problem-solving and logical reasoning skills)
5. Applying theory and authentic work experience

These five factors will now be discussed in relation to blended learning tools that could positively influence these factors.

BLENDED LEARNING TOOLS THAT CAN POSITIVELY INFLUENCE THE KEY SUCCESS FACTORS

For each of the five factors, blended learning tools will be identified from the literature. Furthermore, examples will be provided of how blended learning tools could be used to assist lecturers and students in these activities.

Understanding Basic Accounting Principles

One of the most commonly identified indicators of the low success rate of students in tertiary institutions is under-preparedness, which is caused by a mismatch between students' skills and academic background, and what the university expects from students. Research studies over the past 30 years indicate that under-preparedness is not a new phenomenon worldwide, and South Africa is no exception (Council on Higher Education 2013, 17; Conley 2010, 2). Pitts, White and Harrison (1999, 343) state that under-preparedness is a dilemma facing universities and lecturers and that many lecturers do not know what individual skills and knowledge their students have. Moreover, they often lack relevant strategies and support to handle the challenges embedded in under-preparedness.

Du (2011, 1) developed a blended learning introductory course to introduce basic accounting principles. Students need to work through the content before they come to class so that the limited class time can be used for more complicated discussions. Du (2011, 1) found that this course improved students' final performance through in-depth class activities. Since the majority of the first-year students grow up with technology and prefer multimedia above printed media, blended learning tools can be used to address the lack of knowledge in basic accounting principles (Berk 2010). To give all the students access to the same information and to address the possible lack of knowledge without sacrificing class time, a list of tools is provided (Table 2). These tools can be used to host course content, share files and create online activities using digital media.

Table 2: Blended learning tools that could assist students to better understand accounting principles

Lecturer and/or student activity	Use of blended learning tool
Lecturer makes content/information available for student use. (Tip: Short, manageable chunks of information.)	Use a learning management system (LMS) to upload information such as accounting basics or assumed knowledge, activities, or case studies. Use cloud storage to save information that students can access from any device. Use social media to share announcements and information. Use existing video platforms to identify videos that students can watch. Use video creation software to create short videos about key concepts in accounting. Create slide shows to present the necessary information. Create electronic incentives (badges) to reward students for sections completed.
Students interact or engage with content before, during and after class.	Let students create videos on how to do examples of practical work and new examples. Online quizzes can be created to test knowledge. Online quizzes and/or clickers can also be used as an engagement tool during class. Blogs can be used to discuss topics of the day, or as a platform where students can ask questions. Students can use collaboration software to create a wiki where they work together in developing the content of a topic.

By using blended learning tools, additional information can be made available to students which can be read, discussed, and with which they can engage. In the next section, blended learning tools in relation with attitude and motivation of students towards teaching and learning will be discussed.

Attitude and Motivation of Students regarding Teaching and Learning

Student retention and success are major concerns, because student populations have become more diversified and non-traditional in nature and are generally less prepared for higher education studies (Jeffrey 2009, 195; Visser and van Zyl 2013, 330). Literature identified attitude and motivation as prominent success factors.

At the University of Winchester (Marriot 2009, 239), a lecturer implemented a series of Online Summative Assessments in a first-year financial accounting module with the aim of soliciting student engagement, facilitating evaluation, feedback and

motivation, and providing both the lecturer and the student with performance indicators. Marriot (2009, 239) concluded that students perceived a beneficial impact on learning, motivation and engagement. Another study was conducted in Hungary, where it was also found that one of the skills most lacking in many graduates is motivation (Polyzcskó 2009).

The finding that students often lack motivation, is supported by Sucaromana (2013, 142) who also concludes that motivation is an important part of learning. Motivation determines how involved students will be in their learning as well as the effort they are willing to put in to achieve their goals. Al-Ani (2013, 105) claims that there is a positive correlation between student achievements and their learning motivation when implementing blended learning. These students indicate that the use of blended learning approaches helps them to maintain a positive attitude towards their learning because they can follow lecturer notes and do additional reading. Malinina (2013, 244) found that because the use of web-related technologies allows the students to personalise their studies (for example, students can learn at their own pace, whenever and wherever they want to), students are more motivated and encouraged to study. In addition to the above, Malinina (2013, 244) observed that activities that are more relevant to the real world give students an additional incentive to study.

To summarise, as indicated by the above research, to be motivated and have a positive attitude, students need to have assessments, experience achievement, have access to learning material, use technology to personalise their studies and the examples they use must be relevant (discussed in more detail later). To assist with these summarised factors, a list of blended learning tools that can be used is suggested in Table 3.

Table 3: Blended learning tools and motivation

Lecturer and/or student activity	Use of blended learning tool
Lecturer creates regular online summative assessments.	Use an LMS assessment option to create regular online assessments.
Students see and track their achievements and have a choice to improve achievements.	The use of LMS provides options for immediate feedback, therefore students can track their progress, redo assignments and be aware of their achievements. Use badges to reward students on completion of tasks/ tests.
Lecturer makes notes and additional reading available online.	Use software to create Documents (MS Word); Slide shows (PowerPoint, Prezi); and Videos of your lecture and upload these on an LMS On the LMS, upload links to websites where students can get additional information. Use a QR code generator to embed links in QR format so that students can access it from a mobile device or print it and they can scan it.

Lecturer and/or student activity	Use of blended learning tool
Students can personalise their studies.	LMSs allow students to work through the weekly topics that are uploaded. This is done at their own pace at any time anywhere.
Lecturer provides relevant examples.	Complement the course with customised videos that you make for class of real-life examples or applications of your subject matter. Use existing videos from other universities (University of Cape Town) or the Internet to show students the real-life scenarios. Arrange video conferencing sessions with people in the industry/other universities.

The table above illustrates how blended learning tools such as videos, badges and video conferencing can assist in addressing students' attitude and motivation. In the next section, the use of blended learning tools to increase opportunities for additional tests as well as assist students in examination preparation, will be discussed.

Additional Exposure to Pretesting and Preparation for Examinations

Balduf's (2009) study reveals that first-year students find themselves under-prepared for examinations in higher education because high school success requires less effort and they have never been taught how to work through challenging issues. Students tend to have poor time management skills, and they do not know how to pace their studies and prepare in advance for assessments. Francis and Shannon (2013, 359) found that the integration of student engagement and online activities such as assessments positively correlates with improved student learning outcomes. Therefore, blended learning can also be used to increase students' access to questions before examinations.

To engage students in class, Caldwell (2007) and Wang, Chung and Yang (2014, 1) have used audience response systems. Audience response systems permit students to answer anonymously and immediately see how their response compares to those of the rest of the class. Caldwell (2007) and Wang et al. (2014, 1) have found not only that the use of these audience response systems result in better test scores, but also that these systems motivate students to study topics in greater detail before coming to class so that they can participate in discussions in class.

Hadsell (2009) has created online quizzes and suggests that timely, consistent completion of online quizzes in an introductory finance course increases exam scores. However, these quizzes were only available in class, and to gain access students needed to attend classes. Therefore, online quizzes were not only used as preparation for exams, but also as a way to increase class attendance. In addition to the above research Baleni (2015, 234) claims that the repetitive nature of online assessments gives students the

opportunity to study numerous times, which brings about good results, especially under low achievers.

To engage students, expose them to pretesting and address factors affecting students' performance before and during tests and examinations, various blended learning tools can be used. A list of some of these tools is provided in Table 4.

Table 4: Blended learning tools that enable pretesting and preparation for examinations

Lecturer and/or student activity	Use of blended learning tool
Lecturers create mock examination questions.	Use an LMS to upload mock examination questions. Provide a forum like a discussion board to discuss student questions that arise from the mock examination questions.
Lecturers create online quizzes. (Tip: Can be answered repeatedly.)	Use an LMS to create online quizzes that are marked automatically. Use the online quizzes for pretesting or after testing, in or outside the class. Use the online quizzes as an engagement tool during the lesson.
Lecturer sets up questions to be used with an audience response system.	Use audio response systems such as Clickers or others that use a mobile device to do quizzes in class and actively involve students.
Lecturer creates assignments	Upload these assignments on the LMS. Create an assignment link on the LMS where students can upload scanned answers or PDF versions of their work wherever they are. Discuss answers using a discussion forum.

As indicated above, learning management systems and clickers can be used successfully for continuous assessment to give immediate feedback to the lecturer and students regarding their knowledge levels. In the next section, the use of blended learning tools to allow students to apply knowledge and practise problem-solving and logical reasoning skills, will be discussed.

Critical Thinking Skills (Applying Knowledge, Problem-Solving and Logical Reasoning Skills)

Problem-solving skills were identified as one of the top three skills expected by employers from accounting students (Kavanagh and Drennan 2008, 294). An extensive literature review by these authors indicates that critical thinking skills that involve the

ability to apply knowledge in order to solve problems are essential in the accounting profession and that these skills should be developed with the assistance of accounting educators. There is, however, a lack of agreement on the methods to be used to best incorporate and assess critical thinking in the curricula (Wolcott et al. 2002, 85-103).

Educational research suggests that active learning strategies must be used to develop critical thinking skills, as the current classroom setting, where only passive learning takes place, is not a conducive environment (Cunningham 1996, 44-46). One of the active learning techniques that Young and Warren (2011, 859-881) suggest is that students should be allowed to apply acquired accounting knowledge to business scenarios and to solve unfamiliar business problems.

Weill, McGuigan and Kern (2011, 237-251), explored the value of case study online discussion forums in an intermediate accounting course. They found that students perceived the use of case studies to improve their ability to "identify the relevant data in the case" and "to think critically about issues", amongst others. In addition to the above, MaKinster et al. (2006, 543-579) point out that the use of online discussion forums creates an opportunity to socially construct knowledge. To create real-world experiences, Stanley (2012) explores the use of videos. He has found that using videos to simulate real-world experiences is an exciting way to teach students high-level thinking skills (Stanley 2012).

Totten et al. (1991) and Bruner (1985, 21-34) state that students working in a group setting are confronted with different interpretations of a given situation. While the students engage in discussion they improve their problem-solving skills and eventually become critical thinkers (Totten et al. 1991; Bruner 1985, 21-34). Gokhale (1995) agrees with the above and has found that students who participated in collaborative learning performed significantly better in a test taken to assess critical thinking skills than students who worked individually.

Jou, Lin and Wu (2016, 1141) found that when interactive technologies were used, students' critical thinking skills improved. They further proposed a blended learning environment to encourage critical thinking skills amongst students (Jou, Lin and Wu 2016, 1144). To address the development of critical thinking skills, a number of blended learning tools were identified, as shown in Table 5.

Table 5: Blended learning tools to develop critical thinking skills

Lecturer and/or student activity	Use of blended learning tool
Students need to apply knowledge to business scenarios to solve problems.	Use an LMS to upload examples of case studies, articles about real-life cases or existing videos. Let the students continue with the in-class discussions online, either individually or in groups, through a blog or reflective journal, discussion forum or social media. Use these discussions as starting point in the next class.
Students need to construct their own knowledge.	Create and upload case studies on the LMS and let students discuss them on discussion forums. After discussions, let them reflect and then submit their ideas online. This could help the lecturer to find new discussion topics for the next class. Use, for example, Wikispaces Classroom or Google docs for students to share their problems and find solutions together to solve problems based on their case studies, articles, or what they have learned.
Students need to participate in collaborative settings.	Group work can either be done purely online or after the work done in class. Students can collaborate through Skype sessions or Blackboard Collaborate with students in other environments to solve given business problems. Case studies and real-life problems can be uploaded on LMS so that solutions can be found in the group setup and discussed through blogs, discussion forums or social media.
Lecturers need to expose students to real-world learning.	Record videos of real-life issues or scenarios that can either be discussed in class or online. Use Skype or other video-conferencing software to show real-life examples, or use live streaming of business settings. Use existing videos from other universities or videos published on YouTube or TedTalk to expose students to real-life examples.

The table above indicates how blended learning tools can also assist with developing critical thinking skills. In the next section, the use of blended learning tools to show students how to apply theory to real-life situations, will be discussed.

APPLYING THEORY AND AUTHENTIC WORK EXPERIENCE

According to Kolb (1984, 38), learning is the process whereby knowledge is created through the transformation of experience. The emphasis is on adaptation and learning in contrast to content and outcome, and therefore it requires the immersion of a learner in real-life experiences, solving real-life challenges. In a study conducted in Hungary, the researcher claims that people's inability to apply knowledge is a result of the overly theoretical nature of their education (Polyacskó 2009).

A pilot study in South Africa showed similar results. In the study conducted by Griesel and Parker (2009), it was found that graduates' understanding of the economic and business world did not meet employers' expectations and that they lacked the ability to learn quickly from workplace experience. Employers claimed that higher education did not prepare the students sufficiently to apply their knowledge in the workplace or to meet employer expectations (Griesel and Parker 2009).

Slabbert et al. (2011) suggest that students should get practical exposure rather than only theoretical and second-hand knowledge, which can leave students overwhelmed and without contextual and conceptual understanding of the work. But how can we marry these two concepts: learning in the classroom vs. work-integrated learning, especially when lecturers are challenged by teaching large classes?

Rowe, Frantz and Bozalek (2010, 216) have conducted a literature review to determine the impact of blended learning on the teaching of practical courses. They found that blended learning can bridge the gap between theory and practice, and also improve reflective skills, reasoning and clinical competencies. To bridge this gap between theory and practice, a video project was initiated at the University of Cape Town after it had been established that many under-prepared learners did not have a frame of reference for the examples mentioned in large classes when explaining accounting concepts, and consequently a blended learning approach was adopted (Jawitz and Perez 2014). This resource material made a significant contribution to enhancing both students' experience and their engagement with the business environment (Jawitz and Perez 2014, 13).

Blended learning tools can also assist students to gain real-life experience in the workplace. Additional blended learning tools that can expose students to real-life experience in the workplace are listed in Table 6.

Table 6: Practical/workplace examples and blended learning tools

Lecturer and/or student activity	Use of blended learning tools
Lecturer provides opportunities to experience real-life scenarios.	Video-conferencing tools can be used to listen to board meetings or "live" real-life business interactions, and experience them at firsthand.
Lecturer creates real-life challenges that students need to solve.	Videos uploaded on the Internet can be identified and accessed and then discussed. Case studies can be uploaded on the LMS and discussed on blogs or discussion forums. Videos can be created that simulate real-life challenges and solutions discussed on LMS.

Work-integrated learning does not form part of all courses, and if it does it is usually during the last year of the qualification, which limits students' exposure to the real-life workplace. Blended learning tools such as videos could play a major role in filling this gap.

CONCLUSION AND FURTHER RECOMMENDATIONS

A primary problem currently encountered in South Africa's tertiary education system is students' low success rate and high dropout rate. In some cases current teaching methods are no longer relevant because they have not kept up with modern times. We need a change in our (current) teaching approach. This paper is the result of a review of previous research on how a blended learning approach and tools could contribute to the improvement of the success rate of undergraduate accountancy students in South Africa.

Based on this review, we argue that a blended learning approach, through the use of various tools, could address the key success factors identified in this paper. With blended learning tools, one could address the lack of basic accounting knowledge, motivate students to participate, allow students to test and retest their knowledge, apply critical thinking skills, and bring real-life examples and scenarios into the class.

It is important to realise that technology should not only be used as a means of teaching, but should form an essential part of the learning process itself, established within the current classroom environment with the physical co-presence of the lecturer and students. The tools that have been suggested here could assist with student interaction, engagement in the classroom, discussions and reflection, all of which form part of a student-centred learning process. Blended learning tools could provide students with access to information for further reading, additional exercises, case studies, videos and web links that could improve their contextual and conceptual understanding. It should also be noted that the blended learning tools mentioned in this paper are not the only available tools and devices. However, they could act as a springboard for the use and further development of blended learning in higher education. Because a literature review cannot produce new empirical insights (Mouton 2001, 180), it is recommended

that further research be conducted to determine by means of a pilot approach, the extent to which the use of these blended learning tools is successful in promoting student success.

REFERENCES

Al-Ani, W. T. 2013. Blended Learning Approach using Moodle and Students' Achievement at Sultan Qaboos University in Oman. *Journal of Education and Learning* 2 (3): 96-110.

Aleksić, V. and M. Ivanović. 2013. *Blended Learning in Tertiary Education: A Case Study.* Thessaloniki s.n.: 96-103.

Bailey, J., S. Ellis, C. Schneider and T. van der Ark. 2013. *Blended Learning Implementation Guide.* 1-43. https://net.educause.edu/ir/library/pdf/CSD6190.pdf (accessed November 3, 2016).

Balduf, M. 2009. Underachievement Among College Students. *Journal of Advanced Academics* 20 (2): 274-294.

Baleni, Z. 2015. Online Formative Assessment in Higher Education: Its Pros and Cons. *Electronic Journal of e-Learning* 13 (4): 228-236.

Bawaneh, S. S. 2011. The Effects of Blended Learning Approach on Students' Performance: Evidence from a Computerized Accounting Course. *Interdisciplinary Journal of Research in Business* 1 (4): 43-50.

Berk, R. A. 2010. How do you Leverage the Latest Technologies, Including Web 2.0 Tools, in your Classroom? *International Journal of Technology in Teaching and Learning* 6 (1): 1-13.

Black, A. 2010. Gen Y: Who They are and How they Learn. *Educational Horizons* 2010: 92-101.

Bruner, J. 1985. *Vygotsky: A Historical and Conceptual Perspective. Culture, Communication, and Cognition: Vygotskian Perspectives.* London: Cambridge University Press.

Caldwell, J. E. 2007. Clickers in the Large Classroom: Current Research and Best-Practice Tips. *CBE Life Sciences Education* 6 (11): 9-20.

Conley, D. T. 2010. *Replacing Remediation with Readiness*. Developmental Education Conference. National Center for Postsecondary Research. Columbia University, USA. September 23-24.

Council on Higher Education. 2013. *A Proposal for Undergraduate Curriculum Reforma in South Africa: The Case for a Flexible Curriculum Structure*. Pretoria: CHE.

Cunningham, B. M. 1996. How to Restructure an Accounting Course to enhance Creative and Critical Thinking. *Accounting Education* 1 (1): 46-66.

De Clercq, B. and J. M. P. Venter. 2009. Factors Influencing a Prospective Chartered Accountant's Level of Financial Literacy: An Exploratory Study. *Meditari Accounting Research* 17 (2): 47-60.

De Hart, K., E. Doussy, A. Swanepoel, M. van Dyk and J. Venter. 2011. Increasing Throughput: Factors Affecting the Academic Performance of Entry-Level Undergraduate Taxation Students at an ODL Institution in South Africa. *Progressio* 33 (1): 171-188.

Delaney, D., L. McManus and N. Chew. 2010. *A Blended Learning Approach to Teaching First Year Accounting*. Madrid ICERI2010.

Devedžić, V. and J. Jovanović. 2015. Developing Open Badges: A Comprehensive Approach. *Educational Technology Research and Development* 63:603-620.

Driscoll, M. 2001. *Blended Learning: Let's Get beyond the Hype.* http://www-07.ibm.com/services/pdf/blended_learning.pdf (Accessed August 24, 2013).

Du. C. 2011. A Comparison of Traditional and Blended Learning in Introductory Principles of Accounting Course. *American Journal of Business Education* 4 (9): 1-10.

Dziuban, C. D., J. L. Hartman and P. D. Moskal. 2004. Blended Learning. *Educause* 30 March, 2004 (7): 1-12.

Foxcroft, C. D. and R. Stumpf, R. 2005. *What is Matric for?* Papers and Presentations to the Umalusi and CHET Seminar on Matric: What is to be Done? June 23, Pretoria.

Francis, R. and S. Shannon. 2013. Engaging with Blended Learning to Improve Students' Learning outcomes. *European Journal of Engineering Education* 38 (4): 359-369.

Friesen, N. 2012. *Report: Defining Blended Learning.* http://learningspaces.org/papers/Defining_Blended_Learning_NF.pdf (Accessed April 29, 2014).

Gardiner, L. F. 1994. *Redesigning Higher Education: Producing Dramatic Gains in Student Learning.* Report No. 7. Washington DC: Graduate School of Education and Human Development: George Washington University.

Gokhale, A. 1995. Collaborative Learning enhances Critical Thinking. *Journal of Technology Education* 7 (1), Fall 1995.

Graham, C. R. 2004. "Blended Learning Systems: Definition, Current Trends, and Future Directions." In *Handbook of Blended Learning: Global Perspectives, Local Designs*, eds. C. Bonk and C. Graham, San Francisco, CA: Pheiffer.

Greg, C. 2009. "Self-Determination, Culture and School Administration: A Phenomenological Study on Student Success." PhD. thesis, Phoenix: University of Phoenix.

Griesel, H. and B. Parker. 2009. *Graduate Attributes: A Baseline Study on South African Graduates from the Perspective of Employers.* Pretoria: Higher Education in South Africa and South African Qualifications Authority.

Gwaltney, M. 2012. *10 Tools to get Started with Blended Learning.* http://mikegwaltney.net/blog/my-top-10-tools-for-getting-started-with-blended-learning/ (Accessed February 9, 2015).

Hadsell, L. 2009. The Effect of Quiz Timing on Exam Performance. *Journal of Education for Business* 84 (3): 135-141.

Hart, C. 1998. *Doing a Literature Review*. London: Sage.

HESA. 2009. HESA Strategic Framework for the Next 10 Years. *Insight* October: 1-28.

HESA. 2011. *Access to Higher Education: Challenges: Higher Education SA briefing.* db3sqepoi5n3s.cloudfront.net/files/docs/110208hesa.ppt (Accessed April 25, 2014).

Hiralaal, A. 2012. Students' Experiences of Blended Learning in Accounting Education at the Durban University of Technology. *South African Journal of Higher Education* 26 (2): 316-328.

Howe, N. and W. Strauss. 2003. *Millennials go to College*. http://eubie.com/millennials.pdf (Accessed April 17, 2013).

Intel Corporation. 2012. *Blended Learning Toolkit.* http://www.intel.com/education/video/blend/resources/11_blended_learning_toolkit.pdf (Accessed February 9, 2015).

Jawitz, J. and T. Perez. 2014. *Managing Teaching Development Grants: Experiences from the Large Classes Project.* Report to the National Symposium - Council on Higher Education, April 8, 2014, Cape Town.

Jeffrey, L. 2009. Learning Orientations: Diversity in Higher Education. *Learning and Individual Differences* 9 (2): 195-208.

Jou, M., Y-T. Lin and D. W. Wu. 2016. Effect of a Blended Learning Environment on Student Critical Thinking and Knowledge Transformation. *Interactive Learning Environments* 24 (6): 1131-1147.

Kavanagh, M. H. and L. Drennan. 2008. What Skills and Attributes does an Accounting Graduate Need? Evidence from Student Perceptions and Employer Expectations. *Accounting and Finance* 48 (2008): 279-300.

Kim, E., F. B. Newton, R. G. Downey and S. L. Benton. 2010. Personal Factors Impacting College Student Success: Constructing College Learning Effectiveness Inventory (CLEI). *College Student Journal* 44 (1): 112-125.

Kolb, D. A. 1984. *Experiential Learning: Experience as the Source of Learning and Development.* London: Prentice-Hall.

Köse, U. 2010. A Blended Learning Model Supported with Web 2.0 Technologies. *Procedia Social and Behavioral Sciences* 2: 2794-2802.

LaBanca, F., M. Worwood, S. Schauss, J. LaSala and J. Donn. 2013. *Blended Instruction: Exploring Student Centered Pedagogical Strategies to Promote a Technology-Enhanced Learning Environment.* Litchfield: Education Connection.

Lesser, M. 2016. Why We Badge: The Potential for Digital Credentials. *Education Digest* 2016: 43-48.

MaKinster, J., S. Barab, W. Harwood and H. Andersen. 2006. The Effect of Social Context on the Reflective Practice of Preservice Science Teachers: Incorporating a Web-Supported Community of Teachers. *Journal of Technology and Teacher Education* 14: 543-579.

Malinina, I. 2013. Blended Learning as an Effective Means to Increase Motivation for Studying English as a Second Language. *International Journal for e-Learning Security* 3 (1): 244-249.

Marriot, P. 2009. Students' Evaluation of the Use of Online Summative Assessment on an Undergraduate Financial Accounting Module. *British Journal of Educational Technology* 40 (2): 237-254.

McKenzie, W. A., E. Perini, V. Rohlf, S. Toukhasati, R. Conduit and G. Sanson. 2013. A Blended Learning Lecture Delivery Model for Large and Diverse Undergraduate Cohorts. *Computers and Education* 64: 116-126.

Mouton, J. 2001. *How to Succeed in your Master's and Doctoral Studies*. Pretoria: Van Schaik.

Ngidi, D. P. 2007. An Exploration of Student Failure on an Undergraduate Programme of Study. *Accounting Education* 11: 93-107.

Owston, R., H. Wideman and J. Murphy. 2008. *Blended Learning for Professional Development in Diverse Urban Settings: Findings from Three Project Evaluations.* New York: American Educational Research Association.

Pankin, J., J. Roberts and M. Savio. 2012. *Blended Learning at MIT.* Blended Learning White Paper Sponsored by MIT Training Alignment Team.

Pitts, J. M., W. G. White, Jr. and A. B. Harrison. 1999. Student Academic Under-Preparedness: Effects on Faculty. *The Review of Higher Education* 22 (4): 343-365.

Polyacskó, O. 2009. *European Working Conditions Observatory.* http://www.eurofound.europa.eu/ewco/2008/11/HU0811019I.htm (Accessed April 29, 2014).

Poon, J. 2013. An Examination of a Blended Learning Approach in the Teaching of Economics to Property and Construction Students. *Property Management* 31 (1): 39-54.

Proulx, C. 2012. *5 Ways Technology will Impact Higher Ed in 2013*. www.forbes.com/sites/groupthink/2012/12/11//5-ways-technology-will-impact-higher-ed-in-2013/ (Accessed: April 27, 2014).

Radford, M. 2010. *Understanding Diversity as a Framework for Improving Student Throughput.* Education for Health (20), Special Section on Poverty and Human Development. http://www.educationforhealth.net/ (Accessed April 18, 2013).

Reilly, P. 2012. Understanding and Teaching Generation Y. *English Teaching Forum* 2012 (1): 2-11.

Roos, S. 2009. Factors Affecting Southern African Students' Success in CIMA Examinations. *Meditari Accountancy Research* 17 (1): 49-67.

Rowe, M., J. Frantz and V. Bozalek. 2012. The Role of Blended Learning in the Clinical Education of Healthcare Students: A Systematic Review. *Medical Teacher* 34 (4): 216-221.

Sadler, E. and B. J. Erasmus. 2005. The Academic Success and Failure of Black Chartered Accounting Graduates in South Africa. *Meditari Accountancy Research* 13 (1): 29-50.

Siegel, P. H., K. Omar and S. P. Agrawal. 1997. Video Simulation of an Audit: An Experiment in Experiential Learning Theory. *Accounting Education: An International Journal* 6 (3): 217-230.

Slabbert, J. A., D. M. de Kock and A. Hattingh. 2011. *The Brave 'New' World of Education: Creating a Unique Professionalism*. Cape Town: Juta.

Snodgrass, S. 2011. Wiki Activities in Blended Learning for Health Professional Students: Enhancing Critical Thinking and Clinical Reasoning Skills. *Australasian Journal of Educational Technology* 27 (4): 563-580.

Staker, H. and M. Horn. 2012. *Classifying K-12 Blended Learning*. s.l.: Innosight Institute

Staker, H. 2011. *The Rise of K-12 Blended Learning*, s.l.: Innosight Institute.

Stanley, T. 2012. *How to Develop Critical Thinking Skills using PBL in the Online and Blended Learning Environment.* Accessed 14 February 2015. http://www.globaleducationconference.com/forum/topics/how-to-develop-critical-thinking-skills-using-pbl-in-the-online (Accessed February 14, 2015).

Steenkamp, L. P., R. S. Baard and B. L. Fick. 2009. Factors Influencing Success in First-Year Accounting at a South African University: A Compromise Comparison between Lecturers' Assumptions and Students' Perceptions. *South African Journal of Accounting Research* 23 (1): 113-140.

Sucaromana, U. 2013. The Effects of Blended Learning on Intrinsic Motivation of Thai EFL Students. *English Language Teaching* 6 (5): 141-147.

Tayebinik, M. and M. Puteh. 2012. Blended Learning or e-Learning? *IMACST* 3 (1), 103-110.

Tenkely, K. (n.d.). *12 Tools for Blended Learning.* http://teaching.monster.com/benefits/articles/9116-12-tools-for-blended-learning (Accessed February 9, 2015).

Thomson, S. 2014. 6 *Online Collaboration Tools and Strategies for Boosting Learning.* https://elearningindustry.com/6-online-collaboration-tools-and-strategies-boosting-learning (Accessed July 2, 2017).

Totten, S., T. Sills, A. Digby and P. Russ. 1991. *Cooperative Learning: A Guide to Research*. New York: Garland.

Traxler, J. 2010. Students and Mobile Devices. *ALT-J, Research in Learning Technology* 18 (2): 149-160.

Tseng, H. W. and E. J. Walsh. 2016. Blended versus Traditional Course Delivery. *Quarterly Review of Distance Education* 17 (10): 43-52.

Van Eeden, R., M. de Beer and C. H. Coetzee. 2001. Cognitive Ability, Learning Potential and Personality Traits as Predictors of Academic Achievement by Engineering and other Science and Technology Students. *South African Journal of Higher Education* 15 (1): 171-179.

Visser, H. and D. van Zyl. 2013. Assessment of Academic Readiness to Achieve Student Success and Retention. *South African Journal of Higher Education* 27 (2): 330-352.

Walsh, K. 2012. Seven Online Classrooms Teachers can use to Augment their Own. http://www.emergingedtech.com/2012/01/seven-online-classrooms-teachers-can-use-to-augment-their-own/ (Accessed February 9, 2015).

Wang, Y., C-J. Chung and L. Yang. 2014. Using Clickers to Enhance Student Learning in Mathematics. *International Education Studies* 7 (10): 1-13.

Weil, S., N. McGuigan and T. Kern. 2011. The Usage of an Online Discussion Forum for the Facilitation of Case-Based Learning in an Intermediate Accounting Course: A New Zealand Case. *Open Learning* 26 (3): 237-251.

Wolcott, S., C. P. Baril, B. M. Cunningham, D. R. Fordham and K. St. Pierre. 2002. Critical Thought on Critical Thinking Research. *Journal of Accounting Education* 20: 85-103.

Young, M. and D. L. Warren. 2011. Encouraging the Development of Critical Thinking Skills in the Introductory Accounting Courses Using the Challenge Problem Approach. *Issues in Accounting Education* 26 (4): 859-881.

Zewotir, T., D. North and M. Murray. 2011. Student Success in Entry Level Modules at the University of KwaZulu-Natal. *South African Journal of Higher Education* 25 (6): 1233-1244.