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Online chats: A strategy to enhance learning in large classes

 Muntuwenkosi Abraham Mtshali and  Suriamurthee Moonsamy Maistry

School of Education, University of KwaZulu-Natal, Edgewood Campus, South Africa
Mtshalim1@ukzn.ac.za

 Desmond Wesley Govender

Department of Computer Science Education, University of KwaZulu-Natal, Edgewood Campus, South Africa

Online-supported teaching and learning is a technological innovation in education that integrates face-to-face teaching in plenary lectures, with an online component using a learning management system. This extends opportunities to students to interact with one another via online chats in the process of transacting their learning. There is a need to understand how South African students experience these technologies, where many students encounter them for the first time at higher education level. We are yet to understand variations in students' experiences of online support and how it has influenced their learning. This article explores students' experiences of learning using online chats in Business Management Education. The qualitative component of this mixed-methods research draws on the tenets of phenomenography. Fifteen participants from a Business Management Education class of 156 students enrolled in a Bachelor of Education programme were sampled using phenomenographic approach. Qualitative data sources included personal reflective journals, focus group discussions and individual interviews, and questionnaires were circulated to the respondents. A quantitative component was subsequently implemented to validate the qualitative findings. Analysis of the data revealed that participants viewed online chats as learning contexts in qualitatively different ways.

Keywords: learning management system; online chats; online-supported teaching and learning

Introduction and Background

In the last few decades, South Africa's higher education system has made significant progress towards alleviating the inequalities emanating from the apartheid regime (Moloi, Mkwanazi & Bojabotseha, 2014). Currently, higher education in this country is under increasing pressure to bring about social transformation, while attempting to generate much needed skills in the process (Jaffer, Ng'ambi & Czerniewicz, 2007).

However, new challenges have emerged which pose a threat to higher education in a country where inequalities are a product of race, gender and division of society into classes (Moloi et al., 2014). These challenges include the uneven distribution of resources in the secondary education sector, rendering the vast majority of the output of this sector not ready for the challenging task that students entering university face. Another challenge manifests in the low number of students who complete their qualifications and graduate within the normal regulation time set for that particular qualification (Machika, Troskie-de Bruin & Albertyn, 2014).

The Higher Education Act 101 of 1997 (Department of Education, 2001) provides for the massification of higher education in South Africa, to address the constrained access to higher education that deprived the historically disadvantaged communities of study opportunities during apartheid. This has contributed to a multitude of students gaining entry into universities, giving rise to the challenge of how to conduct teaching and learning in overcrowded contexts without losing efficiency (Machika et al., 2014). Social transformation in education in South Africa has, as one of its guidelines, the increase in demographic representation among those completing their qualifications, and a narrowing of the demographic gap between student intake and graduate throughput (Jaffer et al., 2007).

Various studies (Godsk, 2014; Jaffer et al., 2007; Smith, D & Smith, K 2014) suggest that information and communication technologies (ICTs) in the form of an online learning management system (LMS) enable effective learning in classes of a large size. This article responds to the quest for modifying secondary and higher education in Africa and other emerging economies, which has led to the integration of ICTs and associated instructional techniques such as e-learning into schools (Olson, Codde, DeMaagd, Tarkleson, Sinclair, Yook & Egidio, 2011). Recent research conducted at Belgium's Ghent University (Montrieux, Vangestel, Raes, Matthys & Schellens, 2015) and at Australia's Adelaide University (Wanner & Palmer, 2015) have investigated and explored both students' and teachers' perceptions about the benefits of blended learning, with findings suggesting that students benefitted more than in traditional face-to-face lectures and purely online modes of teaching and learning.

Studies conducted at Australia's University of Sydney (Bluc, Ellis, Goodyear & Piggott, 2011) and at Spain's University of Granada (López-Pérez, Pérez-López & Rodríguez-Ariza, 2011) researched students' experiences of learning through a blend of face-to-face and online discussion in a foreign policy course and a general accounting course, respectively. The results suggested that students' academic performance as measured by their final course marks improved, while the dropout rates dwindled over time.

The research upon which this article is based was conducted at the teacher education institute of the University of KwaZulu-Natal (UKZN) in Durban, South Africa. UKZN in general, and its teacher education

institute in particular, have been experiencing growth in student numbers since its establishment in 2005, due to government policy on access to higher education. This prompted this study to consider more effective ways of engaging with students using the Moodle LMS to improve student-teacher consultation.

Use of the LMS converted the mode of delivery from face-to-face to a blended mode that combines face-to-face and an online component. The online component of learning in this course required students to consult with the lecturer, access course material, receive announcements, engage with learning through online chats and discussion forums, and complete and submit assignments online. Students were required to participate in online chats, where case studies related to the course content were analysed and discussed.

While online chats have been conducted in other course offerings that use online and blended delivery modes (Marttunen & Laurinen, 2007; McInnerney & Roberts, 2004), to enhance collaboration, we sought to explore how students experience and react to the use of online chats in the domain of Business Management Education (BME).

Literature Review

Synchronous communication in the form of online chats enables learners to comment on new work as they progress with curriculum content, where most learners appreciate new posts and are happy to share curriculum content and views with each other (Carrington & Robinson, 2009). Online chats are considered to be commonplace, where people meet and engage in learning activities that require their collective participation to confront problems affecting them (McInnerney & Roberts, 2004). Moreover, online chatting activities and collaborative knowledge building are known to have enabled students to develop ideas around a contemporary societal topic relating to course content (Marttunen & Laurinen, 2007).

Existing research suggests that online synchronous chat conversations in virtual learning environments improve students' thinking processes and self-reflection through cooperative learning and peer mentoring (Krüger, 2006). Furthermore, the type of interaction that online chat rooms nurture enriches and illuminates the information gathered through asynchronous interactions (McInnerney & Roberts, 2004). These chat rooms allow participants to assume diverse ways of thinking that enables students to view learning from a broader perspective, rather than just examining one aspect of it (Krüger, 2006). Recent research acknowledges the developing significance of the collaboration, teamwork and collaborative intelligence that online chats have inculcated in students (Smith, D & Smith, K 2014).

Through online chats students acquire knowledge from each other by offering and obtaining help, noticing conflicts between their own and other students' views, pursuing new insight to reconcile these conflicting views, and forming new meaning from them (Marttunen & Laurinen, 2007). This happened when, in their quest to deliberate understanding on their own without being guided by the teacher, students corrected each other during a synchronous text chat (Tare, Golonka, Vatz, Bonilla, Crooks & Strong, 2014). Students learn to articulate, support and assess the views posted by their peers through debates conducted via the medium of online chats, when cases relating to content are studied (Marttunen & Laurinen, 2007). Furthermore, students learn from others about an instructional offering and learn how to negotiate access to and use online chats by observing others interacting in the chat rooms (Smith, D & Smith, K 2014).

The utilisation of synchronous chat rooms is an attempt to enhance consultation and interaction between lecturers and students in online-mediated course offerings (McInnerney & Roberts, 2004). This interaction is enhanced through the flexibility that comes with use of online chats, allowing tutors and students from any geographical setting to be in contact in a way that could essentially 'scaffold' learning (Bowler, 2009). This enforces a feeling of connection between student and tutor, extending the prospect for people separated by distance to feel interpersonally close to one another and less isolated (McInnerney & Roberts, 2004).

The problem of isolation - a feeling of lonesomeness that can affect both distance and on-campus students - can be minimised, if not eradicated, by engaging students who are taking an online course in online chats (McInnerney & Roberts, 2004). Owing to immediate feedback and expanded rates of student interaction, participation and inspiration, online chats generate a sense of commitment to the communication process and minimise isolation (Bowler, 2009). This suggests that designing online courses along the practices of synchronous chat discussions should be considered an option to prevent students who are participating in online courses from being negatively influenced by the issue of isolation (McInnerney & Roberts, 2004).

Current research also indicates that text-based online chats have a stimulating effect on shy or less assertive students participating in online courses (Tare et al., 2014). Use of online chats extends advantages to students who are less confident about expressing themselves in class during face-to-face discussions (Bowler, 2009). Online chats therefore extend a 'voice' to these students, who are then enabled to articulate their opinions and ask questions that they otherwise would have not asked in front of their peers, if learning was limited to face-

to-face communication in the lecture hall (Krüger, 2006). Online chats also inspire a greater amount of interactivity and social inclusion in the online setting, because less assertive students feel comfortable sharing their views with others and contribute to the ongoing discourse (Bowler, 2009).

While scheduled chat sessions are useful for the discussion of course content with participants (Oztok, Zingaro, Brett & Hewitt, 2013), online chats are also used to illuminate case studies that reflect on general knowledge of the world which students acquire outside the classroom (Marttunen & Laurinen, 2007). Existing literature suggests that synchronous online chats are well suited for discussion of current events that stimulates normal debate or passion around course content (Schwier & Balbar, 2002). This suggests that application of knowledge of the world in relation to the knowledge embedded in the course content is in harmony with the goal of learning using online chats, as this allows for the construction of knowledge from sources inside and outside the school and curriculum (Marttunen & Laurinen, 2007).

Methodology

Research Question

Phenomenography considers the experience of learning as something to be viewed through the “how” aspect and the “what” aspect of a given experience (Stamouli & Huggard, 2007:182). This makes it appropriate for the study to pursue the following question: What are students’ experiences of learning using online chats in BME?

Design

A mixed-methods approach was used to explore learning using online support. A sequential, exploratory design was adopted, because the collection and analysis of qualitative data preceded the generation and analysis of quantitative data (Creswell & Zhang, 2009). The design was more qualitative than quantitative, since three out of the four data collection methods were qualitative.

Sampling

Phenomenography as an approach to qualitative research guided the sampling, collection and analysis of qualitative data for the research upon which this article is based, and is described as follows (Marton, 1986:31): “...a research method adapted for mapping the qualitatively different ways in which people experience, conceptualize [sic], perceive, and understand various aspects of, and phenomena in, the world around them”.

Using phenomenographic sampling for purposeful variation, a sample of 15 participants was selected from a BME class of 156 students enrolled in a Bachelor of Education programme, who had experience of learning using online support. The sample was varied according to race, gender, age

and cultural and economic background (Marton, 1986; Stamouli & Huggard, 2007) to be representative of the population being studied. It was also varied according to level of regularity of engagement with online learning, as five participants were selected from regular, five from moderate, and another five from irregular users of the LMS. The purpose was to elicit varied experiences from the participants. While sampling in quantitative research seeks to choose individuals who are representative of a population so that the results can be generalised to a particular population (Creswell & Plano Clark, 2007), the research on which this article reports was not intended to be generalised to a wider population. It sought to gain a better understanding of an aspect of the world. Hence, sampling was non-random and purposeful for the quantitative component of the study. This allowed the researcher to circulate the questionnaire to the whole group of students from the second-year BME cohort of 2012 (Patton, 1990).

Collection and Analysis of Research Data

Qualitative data were collected using personal reflective journals that were completed by the whole group before 15 participants were selected for the focus group discussion (FGD) and interviews. These were analysed using phenomenographic analysis to ascertain that participants’ conceptions of an experience and subsequent categories of description emerged from the data, and were not imposed onto the data from an abstract theoretical framework. Since reflective journals were also analysed by the researcher using the approach described above, the analysed transcripts had to be presented in a PhD cohort seminar for critical review by a panel of supervisors and co-students to ascertain whether the researcher remained true to the data or not.

The phenomenographic approach to data analysis is a process of ‘discovery’ as well as of ‘construction’ (Mann, Dall’Alba & Radcliffe, 2007), seeking to develop a descriptive framework based on the two elements of meaning and structure (Bruce, Buckingham, Hynd, McMahon, Roggenkamp & Stoodley, 2004). Quantitative data that were collected by circulating questionnaires to the 127 respondents who agreed and completed these questionnaires (though 34 of these were declared inappropriately completed and could not be used for analysis), were analysed using the Statistical Package for Social Sciences, and the services of a specialist statistician were solicited for development of quantitative and descriptive statistics. The statistics comprised numerical representations that either confirmed or conflicted with qualitative themes (Creswell, 2003), while analysis and interpretations of the conceptions indicated whether the quantitative findings supported or opposed qualitative themes.

Given that this article reports on a PhD study conducted by one of the researchers, the tables that form part of the presentation of data are part of the researcher's work, hence, no permission was required for the citing of these in the following section and the subsequent replication of these in this article.

Findings

For the purposes of this article, one finding that emerged from the study will be presented and discussed to illuminate some of the varied experiences of participants who engaged with learning using online chats in BME.

Online Chats as Learning Contexts

Qualitative data that emerged from personal reflective journals, the FGD and interviews suggested that online chats served as repositories of knowledge that students could use at a later stage. The conceptions outlined below are consistent with claims made by students in these data sources.

Online chats as repositories of learning activities

The participants' view of online chats as a repository of learning activities featured across the data sources. This is evident in what emerged from online reflective journals, where one participant indicated that they were able to revisit previous chat activities. In the following case, the participant was uncertain about something that was disputed during the course of an online chat: "I have learnt a few things from reviewing the discussion with my fellow colleagues in the chat room" (J37). Another expressed this view with regard to the learning space being a repository of learning activities: "...online chats enabled me to catch up with the lectures that I have missed when I engaged in online discussions that were conducted during the semester" (J38).

A participant in the FGD articulated her view on the use of online chats for learning as follows:

"...even after the chat, we can go back there and

view the whole activity so, if you had entered the chat late [...] you can go there and try to, like read, understand and analyse the chat and learn something..."

There was variation in manner of experience of online chats as repositories of learning activities: the first participant experienced reviewing the discussion in the chat room as enabling her to learn a few things, the second experienced online chats as enabling him to catch up with what was done in lectures during his absence, and the third participant emphasised the capacity of online chats to enable students to revisit the chat to apprise themselves of what was done before they entered the chat room. Interviews conducted by the researcher also hinted at this, as the following case suggests in response to the question 'how do you seek and find the clarity you have mentioned during the run of the chat?':

Nosy: "After the chat I would on my own seek help and then go back to the chat and make sense of what was going on: 'why did they answer this that way' and 'why did you say this answer was right?', ja" [sic].

Independent interviews also indicated that students benefitted from the capacity of the online space to keep permanent copies of activities conducted there, as the response to the following question, 'why would you say you have benefitted or not benefitted from discussing tasks online in Business Management Education?' suggests:

Sthe: "...I can copy the whole discussion after the chat and re-read it again when I am alone [...] most of the time everyone was posting their responses at the same time so, sometimes you miss what some others are saying..." [sic].

Considering that responses to the questions posted by the lecturer during the ongoing chat often arrived at the same time, participants had very little time to evaluate each response objectively. However, after the chat, they had time to do this. The chat room served as a permanent repository of learning activities. This view is also evident in the descriptive statistics that emerged from analysis of the questionnaire (Table 1).

Table 1 Number of students who indicated that they could revisit the chat

If I missed the chat session, I could go back to previous chats and I could learn from questions and answers that were discussed in the chat

	Frequency	%	Valid %	Cumulative %
Valid Strongly disagree	7	7.5	7.5	7.5
Disagree	8	8.6	8.6	16.1
Neutral	8	8.6	8.6	24.7
Agree	37	39.8	39.8	64.5
Strongly agree	33	35.5	35.5	100.0
Total	93	100.0	100.0	

Online chats as nurturing interactive learning

Interactive case-based discussions facilitated by the lecturer were not conducted in face-to-face lectures, since there was not enough time for both the

presentation of the lecture and facilitating discussion and analysis of cases. The latter were conducted as online chats. Extracts from qualitative data were used to explore how this happened in the context of

BME, as students depicted varied experiences of engaging with online chats. Online reflective journals confirmed this conception, as participants made remarks relating to different things they did in various online spaces, such as “I used the chat room to converse with my lecturer...” (J43), and “the us[e] of online support has been useful in such a way that we had a synchronous chat, where we discussed about assignments, tests and we share our views as students” (J41).

The variation in the ways participants experience online chats, as quoted from the reflective journals, is embedded in what participants did in the chat room, and with whom. The first participant experienced online chats as having enabled her to converse with the lecturer, while the second experienced online chats as enabling her to share views with fellow students. When asked during the FGD ‘Why do students, especially those who did not log into the system regularly, not use all the forums the LMS placed at their disposal?’, one participant said: “as an irregular logger, I only participated in the chat activity, because it is the only time I have to be in the LAN as per arrangement by the teacher”.

Interviews conducted by the researcher indicate that participants acknowledged the use of online chats for learning with the teacher and fellow students. The following participant was asked ‘what do the tasks that you have conducted online entail?’, and responded as follows:

Snowy: “...case studies are posted prior to the chat [...] and then the very same case study will then be discussed in the chat room [...] and then that’s

where we get to interact with the teacher, the whole class online” [sic].

Independent interviews also indicated that students used the online space to engage with online chats, as inferred from the following participant’s response to the question ‘why would you say online-supported learning offered or did not offer you a platform for clarifying learning problems with your teacher or fellow students as compared to face-to-face learning in class?’:

Sihle: “...in the chat room you can ask a question. While in the chat room we get time to participate, we are able to say our answers; besides looking at other students, who were gonna [sic] judge you sometimes”.

This points to the variations in the ways in which participants experienced learning, using online chats. The participant in the FGD experienced online chats as an online space occupied according to a schedule or arrangement, and not just at any time, while interviews portrayed a participant who experienced the chatroom as a context for discussing case studies. Independent interviews depicted a participant experiencing the chat room as a context where one could ask a question and participate without fear of judgement by fellow students.

Evidence from analysis of the questionnaire has indicated that respondents shared the same view with regard to online chats as nurturing interactive learning. While it does not explain how this happened, evidence suggests that students used the online space to learn, through online chats, as indicated in Table 2. Interacting with one another through online chats allowed them to help each other.

Table 2 Students who used the online space to conduct online chats

As students we helped each other by way of interacting with one another in the chat

		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	7	7.5	7.5	7.5
	Disagree	3	3.2	3.2	10.8
	Neutral	12	12.9	12.9	23.7
	Agree	44	47.3	47.3	71.0
	Strongly agree	27	29.0	29.0	100.0
	Total	93	100.0	100.0	

Online chats as emancipating shy students

The notion that some students felt too shy to express themselves in the presence of others suggests that students find it challenging to engage in social interaction with others in face-to-face contexts. Online reflective journals substantiated this perception, as the following participant acknowledged in their journal:

“Face-to-face learning [...] accommodates only the outspoken students, while shy students feel dominated by those students. This support [...] as the system allows the majority of potential students to freely state their concerns at any time...” (J47).

Another student shares a similar experience with regard to not all students being comfortable with expressing their views in face-to-face settings:

“Face-to-face is good to some students, because we are not the same; other students are shy, and do not participate in class, but when it comes to online support, it is where they get freedom and they even ask questions” [sic] (J30).

The statement by J47 shows the participant to be experiencing the partial nature of face-to-face learning, in the sense that it favoured eloquent students who enjoyed speaking on public platforms, to the exclusion of more timid students. J30’s

statement shows that this participant was aware of the restricting nature of face-to-face learning for shy students, who derived their inspiration to communicate with others from online chats. These experiences show that the preference for online chats rather than face-to-face communication was for a variety of reasons. An FGD participant had this to say in response to the question ‘what are your views on online chats extending opportunities for self-expression?’: ‘it also helps shy students to get the opportunity to say something because [...] some students are shy, they cannot say their answers in class’ [sic].

Interviews conducted by the researcher indicated that students were aware of this, as inferred from the following response to the question ‘why would you say this online support offered or did not offer a platform for clarifying learning problems with your teacher or fellow students as compared to face-to-face learning in class?’:

M’khaya: “many of us have questions, but we do not ask these during the Business Management Education lecture[s] as I may be shy to ask, but [...] using the online space [...] even those who were ashamed or shy to ask in the classroom are now answered automatically...” [sic].

Interviews conducted by the independent researcher also confirmed this view, as depicted in the follow-

ing response to the question ‘why would you say online support offered or did not offer you a platform for clarifying learning problems with your teacher or fellow students as compared to face-to-face learning in class?’:

Sihle: “I was, well I can say during our lecture I was quite shy to answer the questions, even though I knew the answer, but I wouldn’t – I, I, I wouldn’t come up with the answer [...] I was shy, you know. But using online chats, I was keen to participate” [sic].

The variation in participants’ experiences of the capacity of online chats to extend freedom of expression is embedded in the idea that participants in the FGD saw students who were often reluctant to speak in class taking advantage of the space by expressing their ideas through online chats. The interviews show the participants’ experiences of the capacity of online chats to inspire them to ask questions they could not ask in class; hence inquiry-based learning was inspired through online chats. The independent interviews portray the participants’ experiences of the capacity of online chats to enable them to participate in activities, something missed in face-to-face lectures, due to their shyness. Descriptive statistics from analysis of the questionnaire, as represented in Table 3, depict evidence in support of this.

Table 3 Students who felt too shy to comment during the face-to-face lectures

I feel shy to make comments during the face-to-face lectures

		Frequency	%	Valid %	Cumulative %
Valid	Strongly disagree	9	9.7	9.7	9.7
	Disagree	15	16.1	16.1	25.8
	Neutral	15	16.1	16.1	41.9
	Agree	30	32.3	32.3	74.2
	Strongly agree	24	25.8	25.8	100.0
	Total	93	100.0	100.0	

Discussion

Motivated by a call for academics in emerging economies to ‘put aside the chalk’ and embark on active learning, including use of the internet and instructive technology (Hogan & Kedrayate, 2010), the researcher’s response yielded the following significant finding: online chats as learning contexts. To view online chats as learning contexts suggests that online chats offered students in BME an additional context for learning. This context manifests in the variety of ways in which student learning was supported through online chats. The participants’ view of online chats as repositories of learning activities is consistent with the claim that online support serves as a repository of knowledge from which students draw the information necessary to support their learning (Carrington & Robinson, 2009). This happens because the chat room has the capacity to record the deliberations during the course of the chat, while simultaneously

saving this record, which is then available if and when needed in future. This suggests that higher education practitioners ought to create opportunities for students to learn in ways that engage the use of online chats as resources that make learning more convenient for students. Chats also enable students to locate previously accomplished activities from a knowledge repository.

In a context where a group of people meets, the exchange of ideas pertaining to a particular topic of societal interest promotes social interaction (Marttunen & Laurinen, 2007). In the research in this article, online chats were conducted to discuss and analyse case studies posted to students prior to the day of analysing these. This suggests the flipped nature of the online class, where an activity is posted in preparation of learning (Wanner & Palmer, 2015). Questions were asked by the lecturer, and answers were negotiated jointly among students as sense was made of the events described in each

case being studied; this suggests that students learned from each other as through an instructional offering (Smith, D & Smith, K 2014). As students began to question, challenge and agree with each other's ideas in an attempt to construct ideal answers to the lecturer's questions on the basis of the events described in the case, learning became interactive. This supports the idea that learning that is mediated online is socially constructed in a way that shows how individuals use online activities to promote collaboration, and portrays students as active co-constructors of knowledge (Carrington & Robinson, 2009). Claims that students learn through debates conducted in the chat room to articulate, support and assess the views of their peers on the basis of particular cases being studied, draw support from this idea (Marttunen & Laurinen, 2007).

Learning in the chat room opened up the dialogue among students and also with the lecturer, in a way that allowed all participants in the BME course to engage with the deliberations. Through open participation, online discussions created avenues for shared interactions in this inclusive environment. This manifested in the manner in which participants, who were mostly quiet in face-to-face lectures, suddenly became outspoken when deliberations were conducted via the medium of online chats. Student's attitudes towards learning became positive (López-Pérez et al., 2011) as they drew their inspiration from online chats to engage with co-constructed learning.

The merits of learning using online support included the benefit online chats offered to less assertive students, who felt too shy to participate in face-to-face lectures, and who found it more convenient to participate in this virtual space. People who find it uncomfortable to engage in social interaction with others and prefer to keep their views, opinions and feelings to themselves, may find their solace in the internet, and are referred to as introverts (Amichai-Hamburger, Wainapel & Fox, 2002). Online chats provide a space that can draw people into social interaction that would otherwise be reticent to participate in groups, and thus, may enhance their learning.

This discovery is important, especially for academics in emerging economies, where e-learning programmes are still in their infancy (Olson et al., 2011). It cannot be confirmed as to whether students who were assertive in face-to-face lectures were less active (or not) in the chat room. However, research found that students who were shy in face-to-face lectures found their emancipation when learning was negotiated via the medium of online chats.

Conclusion

While the main study explored students' experiences of learning in a face-to-face course supported by an online component, the findings presented in

this article foreground what participants did when learning was mediated via the medium of online chats. The relationship between student learning and case-based online chats conducted via the LMS, to link theoretical content of the course and the real world, manifests in students' experiences of learning in BME. This suggests that participants found discussing case studies in the chatroom to be worthwhile, as this offered them opportunities to co-construct knowledge.

Acknowledging the capacity of online chats to serve as knowledge repositories, indicates that these chats could be used both as a source of revision and also as a source of reference for future learning. Online chats also offered a context for students who were reluctant to express their thoughts and views in face-to-face discourse, owing to being shy. This further suggests that students found online chats to provide a space that promotes social interaction and inclusivity. This offers a useful explanation as to how a course offered through a mixed-delivery mode, that combines face-to-face learning and an online component, provides for students with different personalities and learning styles.

In conclusion, this study confirms existing research into blended teaching and learning, namely that likely outcomes include greater student engagement with learning (Wanner & Palmer, 2015), improved students' academic performance (Bliuc et al., 2011), reduced drop-out rates (López-Pérez et al., 2011), and more learning opportunities for students with diverse characteristics (Montrieux et al., 2015). However, this South African study also found that blended learning negotiated via online chats enables students to cope with 'shy' personalities as their interest is aroused, take advantage of knowledge repositories that enhance their revision and learning, and engage with interactive, co-constructed learning.

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