

Pre-Service Teachers' Views about Effective Use of the Whatsapp Application in Online Classrooms

Dr. Fawzia Alubthane

Shaqra University, Saudi Arabia

falobethane@su.edu.sa

ORCID: <https://orcid.org/0000-0002-1952-6569>

Dr. Ibrahim ALYoussef

King Faisal University, Saudi Arabia

ialyoussef@kfu.edu.sa

ORCID: 0000-0002-5112-6813

ABSTRACT

This study applied a qualitative method to investigate Saudi students' perspectives on the effectiveness of using the WhatsApp application to support their learning and interaction in online courses. A purposive sample including eight Saudi pre-service teaching students (three males, five female) was selected from the College of Education at King Faisal University (KFU) in Saudi Arabia. These participants were interviewed face-to-face using a semi-structured interview technique. Member-checking and peer review strategies were used to check the trustworthiness of the findings. After the data was analyzed, two themes emerged: (1) the effectiveness of using the WhatsApp application and (2) the critical challenges involved in the usage of the WhatsApp application in an academic context. The effectiveness of using the WhatsApp application in this context includes (1) convenience and practice, (2) communication, (3) material sharing, (4) course information sharing, and (6) ease of use. The tendency for instructors to ignore student questions and a lack of interaction rules represent the critical challenges involved in the usage of WhatsApp in an educational context. Several recommendations were made based on the results of this study.

KEYWORD: Interaction, Qualitative method, Online group, King Faisal University (KFU), Saudi Arabia.

INTRODUCTION

Online learning has grown in recent years, as many universities have adapted this method of learning (Almala, 2007). Some studies have indicated that interaction has an important effect on the success of online learning. Specifically, Dennen, Darabi, and Smith (2007); Fisher (2010); King (2014); Kiriakidis (2011); Kuo, Walker, Belland, and Schroder (2013); Picciano (2002); Redmond, Devine, and Bassoon (2014); Ustati and Hassan (2013); and Vonderwell (2003) have evidenced the significance of using various tools to foster continuous communication and interaction between students and instructors in an online learning environment.

In addition, some studies have revealed that the use of various synchronous and asynchronous tools to enhance interactions between students plays a key role in community creation, increasing learner satisfaction, and supporting creative thinking (Ally, 2004; Andresen, 2009; Christopher, Thomas, & Tallent-Runnels, 2004; Dixon, Dixon, & Siragusa, 2007; Dziorny, 2012; Gannon-Leary & Fontainha, 2007; Kruger, 2006; Lee, 2005; Ma & Yuen, 2011; Pena-Shaff, Altman, & Stephenson, 2005; Swan & Shih, 2005; AlYoussef, 2020).

Web 2.0 technologies have added a new dimension to online learning by providing opportunities for students and instructors to collaborate and interact both synchronically and asynchronously (Susilo, 2014). Social media represents an interactive form of Web 2.0 application. Facebook and Twitter are the most popular social media tools suggested by some studies to support student learning and interaction (Borau, Ullrich, Feng, & Shen, 2009; Bosch, 2009; Deng & Tavares, 2013; Friedman & Friedman, 2013; Hsu & Ching, 2012; AlYoussef, Alamri, & Al-Rahmi, 2020; Kabilan, Ahmad, & Abidin, 2010; Reinhardt, Ebner, Beham, & Costa, 2009; Shih, 2011; Pauschenwein & Sfiri, 2010; Wright, 2010). In addition, mobile learning applications, such as WhatsApp, have been suggested as tools that could potentially support student interaction and learning (Amry, 2014; Barhoumi, 2015; Nirgude & Naik, 2017; Rambe & Bere, 2013; Susilo, 2014).

LITERATURE REVIEW

Social Media: Facebook and Twitter

The use of social media platforms, such as Facebook and Twitter, has been suggested by some studies as an effective tool to enhance student interaction and learning. Rutherford (2010) suggested that learners' social media use is positively related to their perception of their relationships with other learners and instructors and to their

self-reported learning experience quality. Friedman and Friedman (2013) suggested that social media use could effectively enrich several important skills, such as communication, collaboration, community, convergence, and creativity.

After conducting a qualitative study to investigate learners' use of Facebook at the University of Cape Town, Bosch (2009) indicated that using Facebook has some positive effect on the teaching and learning of developing educational micro-communities. Kabilan et al. (2010) surveyed 300 undergraduate students at Universiti Sains Malaysia to investigate students' views on the role of Facebook in supporting students' meaningful learning of the English language. The results showed that Facebook was capable of facilitating the learning of English and enhancing student motivation and confidence to communicate and write in English (Kabilan et al., 2010).

A mixed method study conducted by Shih (2011) showed that integrating peer assessment through Facebook into English learning could improve student motivation as well as students' English writing skills, knowledge, and cooperative learning. Deng and Tavares (2013) stated that students preferred Facebook over Moodle because "their interaction on Facebook was instant, spontaneous and organic, thus largely fostering their sense of community" (p. 174). However, Wang, Woo, Quek, Yang, and Liu (2012) suggested that although students were satisfied with the Facebook group as a learning management system, it had some limitations in terms of privacy concerns, file format, and organization of discussion threads. Madge, Wellens, and Hooley (2009) noted that although students sometimes utilize Facebook informally for learning purposes. Students also believe that Facebook is mostly useful for social purposes. DeSchryver, Mishra, Koehler, and Francis (2009) investigated the impact of using Facebook for discussions in an online course and found no differences between students using Facebook and students using Moodle.

Twitter is another popular social media platform that could be used to support learning and interaction in an online learning environment. Approximately 70% of the students that participated in a study by Borau et al. (2009) suggested that using Twitter makes it easier for them to communicate. Borau et al. (2009) showed that these participants believed the Twitter project improved their sense of community and allowed for better community development in their class.

Hsu and Ching (2012) applied a mixed method study to examine the effect of mobile microblogging, including Twitter, on learner participation in authentic learning in online courses. The students in this study properly used Twitter to critique examples; this helped them to apply and co-construct their knowledge. In addition, the participants in this study held positive views toward mobile microblogging activities.

In a study of Twitter use in conferences, Reinhardt et al. (2009) suggested that Twitter can improve the knowledge and communication of various online audiences. Pauschenwein and Sfiru (2010) revealed that using Twitter for the purpose of informal exchange "contributed to the motivation of learners during their participation in the online course. The participants extended their relatedness within the group, reflected their personal growth and supported others via acknowledging their inputs in a certain extent" (p. 22).

In a case study, Wright (2010) investigated the use of Twitter to improve the self-reflection of education students during a teaching practicum. The participants in this study regularly used Twitter to share their thoughts regarding their teaching practices. The results showed that these participants appreciated the role of constant contact with others in improving their interaction and sense of community.

Mobile Instant Messaging (MIM): WhatsApp

Mobile instant messaging (MIM) is a widely used communications tool that works through the Internet and allows people to interact and chat in real time (Dourando, Parker, & de la Harpe, 2007). Sharples and Vavoula (2010) suggested that MIM provides an opportunity to create contextual, unbounded communities and establish conversations between students in both real and virtual environments.

"WhatsApp (from the English phrase 'What's up?', meaning 'What's new?') is an instant messaging application for smartphones. It allows users to exchange images, videos, and audio or written messages using their Internet connection" (Barhoumi, 2015, p. 222). WhatsApp has some advantages that could be beneficial to online learning. Barhoumi (2015, p. 222) summarized the benefits of WhatsApp in the context of blended learning as follows:

- The tool facilitates online discussions and collaboration from school or home in a blended mobile lecture.
- In a blended mobile lecture, online students can easily discuss different topics related to the course taught face-to-face in the classroom.
- The tool facilitates the creation of a class publication that students can edit and publish by engaging in collaborative and cooperative online activities related to the course taught in the classroom.
- It encourages students to insert text and messages to easily share information and knowledge related to the

course taught face-to-face in a blended mobile lecture.

- WhatsApp learning technologies can help students integrate videos, podcasts, messages, texts, images, and audio files in the blended mobile learning process.

Rambe and Bere (2013) reported that “WhatsApp’s anonymous, asynchronous collaborative learning allowed shy, less confident students to engage more productively” (p. 560). Furthermore, Rambe and Bere (2013) proposed that WhatsApp could help in fostering social constructivist environments, transferring the lecturer’s role from that of an instructor to that of a facilitator, and transferring student roles from those of information receivers to those of information generators, collaborators, information seekers/givers, and critical thinkers.

Nirgude and Naik (2017) noted that although WhatsApp could be an effective tool for flipped classrooms and student interaction via discussions, feedback, and information sharing, it has some limitations in terms of file size and Internet availability. In the same context, Susilo (2014) suggested that Facebook and WhatsApp groups could be used as online tutorial supplements because “they have pedagogical, social and technological affordances, which allow putting up announcements, sharing ideas and resources, and implementing online discussions” (p. 10).

In an experimental Saudi Arabian context, Amry (2014) found that using WhatsApp positively influenced the achievement and attitudes of female students. Amry (2014) also indicated that WhatsApp groups help students to interact, create learning communities, and share knowledge through instant messaging. In a similar experimental study, Barhoumi (2015) examined the effectiveness of using WhatsApp to support a blended learning course containing 70% face-to-face coursework and 30% WhatsApp discussions. The outcomes revealed that this blended learning course had a positive impact of using WhatsApp to support a blended learning course. In addition, the students in the experimental group showed positive attitudes toward blended learning.

Using a quasi-experimental method, Alsaleem (2013) studied the effects of WhatsApp electronic journaling on the vocabulary word choice and voice of undergraduate Saudi students’ writing. The findings showed that WhatsApp had a positive effect on the students’ writing skills, particularly on their voice and vocabulary word choice. Alshahrani and Al-Shehri (2012) emphasized that youth in Saudi Arabia have become more digitally savvy and increasingly connected via social media platforms, such as Twitter, Facebook, and WhatsApp. Therefore, university instructors should consider using such applications to reach students in teaching and learning processes.

However, the conclusions of a study by Alsurehi and Youbi (2014) revealed that although social networking applications are used widely by major universities in Saudi Arabia, their utilization seems to be limited to popular social media platforms, such as Facebook. This study also revealed that the use of social networking applications as collaboration and educational instruments seems to be limited by Saudi students. Alsurehi and Youbi (2014) noted that less popular applications, such as WhatsApp, are not broadly used or applied in Saudi Arabian universities. Alsaleem (2013) emphasized that while WhatsApp messages are widely used by undergraduate students, there are two different views regarding the effects of WhatsApp use on student learning. There is a need for more studies addressing the effects of using the WhatsApp application to support student interaction and learning in online courses. The present study was carried out to fill this gap by examining students’ views regarding the effects of WhatsApp use on learner interactions and learning in online courses.

RESEARCH QUESTIONS

This study aimed to examine Saudi students’ perspectives on the effects of using the WhatsApp application to support their learning and interaction in online courses. To fulfill this purpose, this study investigated the following questions:

- How could the WhatsApp application be effective from a student viewpoint?
- What are the main problems raised by students with regard to the use of the WhatsApp application in an academic context?

RESEARCH METHOD

A qualitative approach was used in this study to gain insight into how Saudi pre-service teaching students value the use of the WhatsApp application to support their learning and interaction in online courses. Using a phenomenological approach, this study sought to understand the advantages and problems involved in using the WhatsApp application in an academic context through the experiences of the students themselves. According to Patton (2002), phenomenological inquiry allows researchers to discover people’s experiences with regard to a particular situation (or phenomenon) and how they may interpret those experiences.

In order to obtain an in-depth understanding of the phenomenon, eight Saudi pre-service teaching students (three males, five female) were selected for this study using a purposive sampling technique. Purposive sampling

facilitates the selection of individuals who will allow the researcher to discover, understand, and gain insight into the central phenomenon of the study (Creswell, 2007; Patton, 2002). The participants were selected from the College of Education at King Faisal University (KFU) in Saudi Arabia. The researchers chose this sample because it was generally very well-educated. Further, these pre-service teaching students had knowledge and several skills relating to the use of social media technology, especially the WhatsApp application. To ensure confidentiality and anonymity, the participants were given pseudonyms. Further, all the participants were asked for their permission to have the interviews recorded.

Data were collected through audiotaped interviews with the participants. These interviews were conducted face-to-face with students of the College of Education at KFU and through WhatsApp recordings with the female students. Semi-structured interviews were used in this study. This technique was used mainly to answer the study questions and explore other related information that may have helped the researchers to meet the objectives of this study. All interviews were conducted in person and lasted for 14–18 minutes. The interview data were analyzed using interpretative phenomenological analysis (IPA). This technique allowed the researchers to find and understand the live experience of the studied situation (or phenomenon). Based on that, the researchers developed the emerging themes by coding data and studying the relationships between them.

Two key strategies were utilized to establish the trustworthiness of the findings of the present study. First, a member-checking technique was used to elucidate any areas of uncertainty in the data as well as any issues arising out of ongoing analysis. The second strategy was peer review. Both researchers analyzed the transcripts and then met to compare and discuss the initial notes assigned to the data and the emerging themes. This technique helps researchers to check the data analysis process and discover any issues that are missing in the data (Creswell, 2007; Patton, 2002).

FINDINGS

The purpose of this study was to examine Saudi students' perspectives on the use of the WhatsApp application to support their learning and interaction in online courses. The findings of this research were grouped into two clusters: (1) the effectiveness of using the WhatsApp application and (2) the critical challenges involved in the use of the WhatsApp application in an academic context.

The effectiveness of using the WhatsApp application in an academic context.

The findings presented in this section led to the identification of the most critical factors affecting the successful usage of the WhatsApp application in an academic context. The respondents stated that the most critical factors that should be addressed and taken into account in future plans concern (1) convenience and practicality, (2) communication, (3) material sharing, (4) course information sharing, and (6) ease of use.

(1) Convenience and practicality

Convenience and practicality were the main themes of this study. All the interviewees stated that they used the WhatsApp application because it is much more convenient and practical than university communication tools, such as e-mail. For example, Participant #3 shared that he joined the WhatsApp application group for one of his courses and stated that “using WhatsApp application in [his] class [was] more convenient and practical than using university’s email.” Another participant added that “students who WhatsApp application group could log into the group course at any time when they [were] available and get their answer from other students. It is better than email.” “One benefit of WhatsApp application is that you don’t have to worry about trying to find time to meet your classmate and ask them about assignment, exam, and deadline of homework.”

(2) Communication

Educational uses of the WhatsApp application for communication purposes include enabling communication among students and their instructors; facilitating class discussions; following announcements concerning classes, courses, departments, and schools; delivering homework and assignments; and providing resources and links related to course content. For example, Participant #1 shared that “using WhatsApp application in [their] class gave [them] the ability to communicate with [their] instructor easily.” Participant #5 added “[his] instructor created WhatsApp application group for [his] course to share with [him] any announcements about classes, such as rules about class, time and day about exam and assignment, final day of project.” Participant #6 found that “using WhatsApp application group in course is very important because students can discuss assignments with teacher or with classmate.”

(3) Material sharing

Educational uses of the WhatsApp application for resource and material sharing include activities such as exchanging multimedia resources and documents. All interviewees stated that they used the WhatsApp application

because it was the best way to share study materials, assignments, past examination papers, coursework results, and course timetables in the forms of documents and links. For example, Participant #1 reported “using WhatsApp application in [their] class to exchange course links and documents.” Participant #4 stated that they could “share video to the group for explaining difficult information.” Participant #7 stated that “through WhatsApp group, [they] requested [their] classmate to send the lecture material and examination papers they undertook... [their] classmate helped [them] through this application and [shared] all resource and material on one click and the same time.”

(4) Course information sharing (collaboration)

As the WhatsApp application contains different categorical groups and communities, it provides opportunities for students to join new group for collaborative learning. Students can exchange ideas, share information, and work together with others sharing common interests, ideas, and needs. Educational uses of the WhatsApp application for collaboration include allowing students to join academic groups related to their schools, departments, or classes and carrying out group works by sharing homework, projects, and ideas. Participant #1 expressed the idea that “through the work of groups (cooperative learning) in the distribution of tasks either as assignments or projects.” Participant #6 added that “there many of using WhatsApp application in classroom, including the exchange of important information in the subject lessons between students, sharing some important points are hidden by some students.” The students indicated that they used WhatsApp application to help each other. Participant #8 shared that they “save[d] time and effort in terms of meeting students in at the university and asking them to help... in assignments or exams.”

(5) Ease of use

Ease of use has been defined as “the degree to which a person believes that using a particular system would be free of effort” (Davis, 1989). In the present study, we defined the ease of use of the WhatsApp application as the ability to “easily and manage the overall system content without much effort.” All the interviewees stated that they used the WhatsApp application because it was easier to use than the university’s email. Participant #3 shared that “all Saudi students use the WhatsApp application in their daily time because it is easy to use.” Participant #5 stated that “currently, WhatsApp is the only application that brought together all students and faculties of the course in one place and time because it is easier than university’s email or online discussion board in learning management systems.” Further, Participant #1 stated that “the [WhatsApp] application has become very easy and not complicated to use in education.”

Critical challenges involved in the usage of the WhatsApp application in an academic context.

The findings discussed in this section led to the identification of critical challenges involved in the usage of the WhatsApp application in an academic context. In the interviews, the respondents stated that these critical factors include (1) the tendency for instructors to ignore student questions and (2) a lack of group policies.

(1) Ignoring student questions

Interaction is an important factor in ensuring an effective learning environment. Many educators believe that this type of interaction is a very important component of the success of online educational programs. Interactions between learners and their instructors are intended to support the learners’ understanding of the material or clarify meanings. Such interactions can also help students to clarify vague points and reinforce correct interpretations of course information. All the interviewees reported that the tendency for instructors to ignore students’ questions in WhatsApp application groups was one of the most critical challenges involved in the usage of the WhatsApp application in an academic context. Participant #1 stated that “some faculty create WhatsApp group and ignore student questions” and wondered why this occurs. Participant #5 stated that “in online courses, faculty should be available to answer students’ questions and engage them to learn. In WhatsApp group, teachers may ignore the question/message sent by their students.” Participant #6 added that “[they lived] outside university campus” and that they “sometimes... [needed] the course teacher to answer special questions about the course. [They] used WhatsApp group rather than come to campus, but some teachers always [did] not always interact with [their] inquiries.”

(2) Lack of group policies

The purposes of WhatsApp application groups may not be achieved due to misuse by some students. The majority of the interviewees pointed out that some students posted irrelevant messages, which distracted their classmates’ attention. Participant #6 stated that “in course groups, some students do not take the subject seriously.” Further, Participant #3 shared that “a large number of posts distracted the learning process of students.” Participant #4 added that “some students add score of football game. This is not acceptable.”

DISCUSSION

The participants in the present study appeared to consider WhatsApp as an effective application for the purpose of supporting cooperation and discussion among students and faculty members. Therefore, the WhatsApp application could play an effective role in promoting social and academic interaction both among students and between students and their professors. The results of this study also indicated that WhatsApp is a convenient, practical, and easy-to-use program. In addition, this application helps students to communicate, share various materials and information, and collaborate with each other. These results are consistent with those of previous studies (e.g., Rambe & Bere, 2013; Nirgude & Naik, 2017; Susilo, 2014; Amry, 2014; Barhoumi, 2015; Alsaleem, 2013; Alshahrani & Al-Shehri, 2012; Mazana, 2018; Alubthne, 2018).

WhatsApp remains at the forefront of social networking programs. This application is widely used, especially in educational and social contexts, although there are a number of applications and programs that possess the same advantages and services. The popularity of this program can be attributed to many reasons. For example, it was one of the first programs to emerge in this field. It is also very flexible, and continuous updates have improved upon its services. Nevertheless, there are some challenges and caveats that should be considered when using WhatsApp in an online learning environment.

As indicated by the outcomes of this study, the tendency for instructors to ignore students' questions in WhatsApp application groups is one of the most critical challenges facing the effective usage of WhatsApp. This problem limits the quality of teacher-student interaction, which is one of the most important factors of the success of online learning courses, as students in these courses cannot meet their instructors in person on a daily basis. A study by Kiriakidis (2011) showed the importance and effectiveness of interactions between students and their instructors in helping them to learn and acquire feedback. Kuo et al. (2013) indicated that learner-instructor interaction is a significant predictor of student satisfaction. Further, Ustati and Hassan (2013) pointed out that students require more two-way interactions with their instructors.

The outcomes of this study also indicated that some students misuse WhatsApp course groups due to the absence of rules regulating students' interactions. This problem distracts students' attention and negatively affects the quality of required academic interactions. Similar results were found in a study by Mazana (2018), in which the participants considered the misuse of WhatsApp groups to be one of the most critical challenges affecting students' interactions through WhatsApp. In order to avoid distractions and problems created by useless or irrelevant messages, instructors should impose some rules, including principles and foundations, that students should adhere to in WhatsApp groups to organize their interactions and determine the features of messages to be sent. Additionally, students should be informed in advance as to the methods and rules that they should follow when responding to their colleges or instructors. Students' interactions and adherence to predetermined rules should be monitored by their instructors or supervisors appointed by their instructors. Yamagata-Lynch (2014) indicated that "ground rules helped identify formal rules that students could then interpret as a guide to identify how to behave appropriately in course related activities in both the synchronous and asynchronous platforms" (p. 198).

CONCLUSIONS

The findings of the present study suggest that WhatsApp is a practical, convenient, and easy-to-use application that is effective in enhancing interactions, discussions, collaboration, and communication both among students and between students and their instructors. WhatsApp can also allow students and instructors to share instructional materials and resources, ideas, and course-related news. Therefore, we recommend that instructors use WhatsApp to interact and communicate with students by creating groups and encouraging students to discuss and share ideas, resources, and appropriate educational sites.

Instructors should also monitor student interactions by supervising them and responding to their questions and inquiries in a timely fashion. Instructors can also use WhatsApp to post course-related announcements, follow up on group projects, and provide cooperative group feedback. Finally, instructors should consider setting rules to regulate group interactions. These rules should be included in course syllabi and posted in WhatsApp groups. Following up and monitoring, the students' commitment to these rules is necessary to keep group discussions and posts on the right path and achieve the goals for which these groups were created.

These tasks may impose an additional burden on already burdened instructors, especially in the context of online learning. Instructors of online courses must monitor student interactions, read student posts, watch posted material and resources, and answer many student questions. To reduce the burden on instructors, we recommend that instructors allocate some students to assistants. Student assistants can monitor students' compliance with group rules, supervise student posts, collect and organize student questions, and direct these questions to the instructor at a predetermined time so that the instructor can respond to student questions in a timely fashion.

REFERENCES

- Ally, M. (2004). Foundations of educational theory for online learning. *Theory and Practice of Online Learning*, 2, 15–44.
- Almala, A. (2007). Review of current issues in quality e-learning environments. *Distance Learning*, 4(3), 23–30.
- Alsaleem, B. I. A. (2013). The effect of "WhatsApp" electronic dialogue journaling on improving writing vocabulary word choice and voice of EFL undergraduate Saudi students. *Arab World English Journal*, 4(3) 213–225. Retrieved from <https://s3.amazonaws.com/academia.edu.documents/38800395/18.pdfh>
- Alshahrani, K., & Al-Shehri, S. (2012). Conceptions and responses to e-learning: The case of EFL teachers and students in a Saudi Arabian university. *Monash University Linguistics Papers*, 8(1), 21.
- Alsureshi, H. A., & Youbi, A. A. A. (2014). Towards applying social networking in higher education: Case study of Saudi universities. *International Journal of Academic Research*, 6(5), 221–229. Retrieved from <http://brisjast.com/wp-content/uploads/2015/06/July-01-2014.pdf>
- Alubthne, F. (2018). *Exploring the quality needs of Saudi electronic university students: A learner perspective* (Unpublished doctoral dissertation). Ohio University, Ohio. Retrieved from https://etd.ohiolink.edu/!etd.send_file?accession=ohiou1518699469954247&disposition=inline
- Alyoussef, I. (2020) An empirical investigation on students' acceptance of social media use for teaching and learning. *International Journal of Emerging Technologies in Learning*, 15(4), 158–178.
- Alyoussef, I., Alamri, M., & Al-Rahmi, W. (2019). Social media use (SMU) for teaching and learning in Saudi Arabia. *International Journal of Recent Technology and Engineering*, 8(4), 942–946.
- Amry, A. B. (2014). The impact of WhatsApp mobile social learning on the achievement and attitudes of female students compared with face to face learning in the classroom. *European Scientific Journal*, 10(22), 116–136. Retrieved from <http://eujournal.org/index.php/esj/article/viewFile/3909/3700>
- Andresen, M. A. (2009). Asynchronous discussion forums: Success factors, outcomes, assessments, and limitations. *Journal of Educational Technology & Society*, 12(1), 249–257.
- Barhoumi, C. (2015). The effectiveness of WhatsApp mobile learning activities guided by activity theory on students' knowledge management. *Contemporary Educational Technology*, 6(3), 221–238. Retrieved from <http://files.eric.ed.gov/fulltext/EJ1105764.pdf>
- Borau, K., Ullrich, C., Feng, J., & Shen, R. (2009). Microblogging for language learning: Using Twitter to train communicative and cultural competence. In M. Spaniol et al. (eds.), *Advances in Web Based Learning - ICWL 2009* (pp. 78–87). Heidelberg: Springer-Verlag. Retrieved from <http://etec.ctlt.ubc.ca/510wiki/images/a/ad/Can-we-use-Twitter-for-educational-activities.pdf>
- Bosch, T. E. (2009). Using online social networking for teaching and learning: Facebook use at the University of Cape Town. *Communicatio: South African Journal for Communication Theory and Research*, 35(2), 185–200. Retrieved from <https://www.researchgate.net>
- Christopher, M. M., Thomas, J. A., & Tallent-Runnels, M. K. (2004). Raising the bar: Encouraging high level thinking in online discussion forums. *Roeper Review*, 26(3), 166–171.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston: Pearson.
- Deng, L., & Tavares, N. J. (2013). From Moodle to Facebook: Exploring students' motivation and experiences in online communities. *Computers & Education*, 68, 167–176. Retrieved from <https://s3.amazonaws.com/academia.edu.documents/39664417/h>
- Dennen, V. P., Darabi, A. A., & Smith, L. J. (2007). Instructor-learner interaction in online courses: The relative perceived importance of particular instructor actions on performance and satisfaction. *Distance Education*, 28, 65–79.
- DeSchryver, M., Mishra, P., Koehler, M., & Francis, A. (2009). Moodle vs. Facebook: Does using Facebook for discussions in an online course enhance perceived social presence and student interaction? In *Society for Information Technology & Teacher Education International Conference, March 2, 2009, Charleston, SC, USA*.
- Dixon, R., Dixon, K., & Siragusa, L. (2007). Individuals' perceptions of online environments: What adult learners are telling us. In *Proceedings Ascilite Singapore. ICT: Providing choices for learners and learning* (pp. 207–218). Retrieved from <http://www.researchgate.net>
- Dourando, D., Parker, M. B., & de la Harpe, R. (2007). An investigation into the usage of mobile instant messaging in tertiary education. In *9th Annual Conference on World Wide Web Applications* (pp. 254–262). Johannesburg.
- Dziorny, M. (2012). Online Course Design Elements to Better Meet the Academic Needs of Students with Dyslexia in Higher Education. In P. Resta (Ed.), *Proceedings of SITE 2012--Society for Information Technology & Teacher Education International Conference* (pp. 332–337). Austin, Texas, USA: Association for the Advancement of Computing in Education (AACE). Retrieved August 4, 2020 from <https://www.learntechlib.org/primary/p/39585/>.

- Fisher, C. (2010). Discussion, participation, and feedback in online courses. In *ISECON Proceedings: Vol. 27* (p. 1382).
- Friedman, L. W., & Friedman, H. H. (2013). Using social media technologies to enhance online learning. *Journal of Educators Online*, 10(1), 1–21. Retrieved from <http://files.eric.ed.gov/fulltext/EJ1004891.pdf>
- Gannon-Leary, P., & Fontainha, E. (2007). Communities of practice and virtual learning communities: Benefits, barriers and success factors. *eLearning Papers*, 5, 20–29. Retrieved from <http://nrl.northumbria.ac.uk>
- Glesne, C. (2011). *Becoming qualitative researchers: An introduction* (4th ed.). Boston: Pearson.
- Hsu, Y. C., & Ching, Y. H. (2012). Mobile microblogging: Using Twitter and mobile devices in an online course to promote learning in authentic contexts. *The International Review of Research in Open and Distributed Learning*, 13(4), 211–227.
- Kabilan, M. K., Ahmad, N., & Abidin, M. J. Z. (2010). Facebook: An online environment for learning of English in institutions of higher education? *The Internet and Higher Education*, 13(4), 179–187. Retrieved from <https://s3.amazonaws.com/academia.edu.documents/h>
- King, S. B. (2014). Graduate student perceptions of the use of online course tools to support engagement. *International Journal for the Scholarship of Teaching and Learning*, 8(1), 5.
- Kiriakidis, P. (2011). Online learner satisfaction: Learner-instructor discourse. *College Teaching Methods & Styles Journal*, 4(1), 11–18. Retrieved from <https://www.cluteinstitute.com/ojs/index.php/CTMS/article/view/5043/5134>
- Kruger, S. (2006). Students' experiences of e-learning: A virtual ethnography into blended online learning. In *The International Conference on Networked Learning*. Retrieved from <http://www.networkedlearningconference.org.uk>
- Kuo, Y. C., Walker, A. E., Belland, B. R., & Schroder, K. E. (2013). A predictive study of student satisfaction in online education programs. *The International Review of Research in Open and Distributed Learning*, 14(1), 16–39.
- Lee, L. (2005). Using web-based instruction to promote active learning: Learners' perspectives. *CALICO Journal*, 23(1), 139–156.
- Madge, C., Meek, J., Wellens, J., & Hooley, T. (2009). Facebook, social integration and informal learning at university: 'It is more for socialising and talking to friends about work than for actually doing work.' *Learning, Media and Technology*, 34(2), 141–155. Retrieved from <http://www.tandfonline.com/doi/full/10.1080/17439880902923606>
- Ma, W. W., & Yuen, A. H. (2011). Understanding online knowledge sharing: An interpersonal relationship perspective. *Computers & Education*, 56(1), 210–219.
- Mazana, M. Y. (2018). Social media in the classroom: WhatsApp a new communication tool for enhanced class interactions. *Business Education Journal*, 2(1), 1–8. Retrieved from <http://dspace.cbe.ac.tz:8080/xmlui/bitstream/handle/123456789/82/SOCIAL%20MEDIA%20IN%20THE%20CLASSROOM%20WHATSAPP.pdf?sequence=1&isAllowed=y>
- Nirgude, M., & Naik, A. (2017). WhatsApp application: An effective tool for out-of-class activity. *Journal of Engineering Education Transformations: Special Issue*. 1-5. Retrieved from <http://journaleet.org/index.php/jeet/article/viewFile/111759/78294>
- Pauschenwein, J., & Sfirri, A. (2010). Adult learner's motivation for the use of micro-blogging during online training courses. *International Journal of Emerging Technologies in Learning*, 5(1), 22–25. Retrieved from <http://www.anitacrawley.net/Resources/Articles/Pauschenwein%20microblogging.pdf>
- Pena-Shaff, J., Altman, W., & Stephenson, H. (2005). Asynchronous online discussions as a tool for learning: Students' attitudes, expectations, and perceptions. *Journal of Interactive Learning Research*, 16, 409–430.
- Picciano, A. G. (2002). Beyond student perceptions: Issues of interaction, presence, and performance in an online course. *Journal of Asynchronous Learning Networks*, 6(1), 21–40.
- Rambe, P., & Bere, A. (2013). Using mobile instant messaging to leverage learner participation and transform pedagogy at a South African University of Technology. *British Journal of Educational Technology*, 44(4), 544–561. Retrieved from https://www.researchgate.net/profile/Patient_Rambe/publication/264291696_Using_mobile_instant_messaging_to_leverage_learner_participation_and_transform_pedagogy_at_a_South_African_University_of_Technology/links/5440cfa30cf263745da61d9e.pdf
- Redmond, P., Devine, J., & Bassoon, M. (2014). Exploring discipline differentiation in online discussion participation. *Australasian Journal of Educational Technology*, 30(2), 122–135.
- Reinhardt, W., Ebner, M., Beham, G., & Costa, C. (2009). How people are using Twitter during conferences. In *Proceedings of the 5th EduMedia. Creativity and Innovation Competencies on the Web* (pp. 145–156). Retrieved from https://www.researchgate.net/profile/Martin_Ebner2/publication/216016002_How_people_are_using_T

- twitter_during_conferences/links/00b4951cb19211c42c000000.pdf
- Rutherford, C. (2010). Using online social media to support preservice student engagement. *MERLOT Journal of Online Learning and Teaching*, 6(4), 703–711. Retrieved from http://jolt.merlot.org/vol6no4/rutherford_1210.htm
- Savin-Baden, M., & Major, C. (2012). *Qualitative research: The essential guide to theory and practice*. Oxon: Routledge.
- Sharples, M., Taylor, J., & Vavoula, G. (2010). A theory of learning for the mobile age. In *Medienbildung in neuen Kulturräumen* (pp. 87–99). VS Verlag für Sozialwissenschaften. Retrieved from https://hal.archives-ouvertes.fr/file/index/docid/190276/filename/Sharples_et_al_Theory_of_Mobile_Learning_preprint.pdf
- Shih, R. C. (2011). Can Web 2.0 technology assist college students in learning English writing? Integrating Facebook and peer assessment with blended learning. *Australasian Journal of Educational Technology*, 27(5), 829–845. Retrieved from <https://ajet.org.au/index.php/AJET/article/viewFile/934/211>
- Susilo, A. (2014). Exploring Facebook and Whatsapp as supporting social network applications for English learning in higher education. In *International Conference on Teacher Education: Teaching and Learning in the 21st Century*. 10-24. Retrieved from <http://repository.ut.ac.id/4930/1/Exploring%20Facebook%20and%20Whatsapp%20As%20Supporting%20Social%20Network%20Applications%20For%20English.pdf>
- Swan, K., & Shih, L. F. (2005). On the nature and development of social presence in online course discussions. *Journal of Asynchronous Learning Networks*, 9(3), 115–136.
- Ustati, R., & Hassan, S. S. S. (2013). Distance learning students' need: Evaluating interactions from Moore's theory of transactional distance. *Turkish Online Journal of Distance Education*, 14(2), 292–304. Retrieved from <http://dergipark.ulakbim.gov.tr/tojde/article/view/5000102225>
- Vonderwell, S. (2003). An examination of asynchronous communication experiences and perspectives of students in an online course: A case study. *The Internet and Higher Education*, 6(1), 77–90.
- Wang, Q., Woo, H. L., Quek, C. L., Yang, Y., & Liu, M. (2012). Using the Facebook group as a learning management system: An exploratory study. *British Journal of Educational Technology*, 43(3), 428–438. Retrieved from <http://ai2-s2-pdfs.s3.amazonaws.com/1719/aa40d501613c06f3c9a411e7bb928fb552b8.pdf>
- Wright, N. (2010). Twittering in teacher education: Reflecting on practicum experiences. *Open Learning*, 25(3), 259–265.
- Yamagata-Lynch, L. C. (2014). Blending online asynchronous and synchronous learning. *International Review of Research in Open and Distributed Learning*, 15(2), 189–212.