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Facebook in tertiary education: The impact of social media in e-Learning

Abstract

The present study provides insights on the impact of using Facebook in e-learning higher education postgraduate programs. More specifically, the study (1) presents the status quo of Facebook in higher education, (2) explores the nature of Facebook in e-learning, and (3) investigates the effects of Facebook on learning community, focusing on their viewpoints. The findings reveal that the majority of the students think favorably of Facebook groups as they conveniently supplement Learning Management Systems (LMS). The survey also indicates that there was an interactive learning element to the use of Facebook that made it more appealing than their university's Course Management System (CMS) to use during the course.

Keywords

Facebook, e-learning, tertiary education, student engagement, digital pedagogy

Cover Page Footnote

I would like to thank the MA students who participated in the study and offered their input so willingly.

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Introduction

Education in the 21st century has endured a considerable amount of growth. One very significant development has been the implementation of e-learning programs in higher education, which includes using technology outside the classroom. An increasing number of universities internationally are providing courses of quality and flexibility to meet university students' needs (O'Neill et al. 2004). Such programs are expected to deliver tailored courses to suit differing educational aspirations, and demand fundamental change in how university modules are delivered to accommodate the learning styles of students who have been accustomed to the privileges of the digital age.

Traditionally, university students attend their classes "powered-up" and wired with the newest technologies available to them. Nonetheless, not all aspects of their studies embrace the use of new technologies. The most recent example of a potential disconnect between tools preferred among students and those used by instructors are social-networking sites (SNSes). It has been argued that the use of SNSes, such as Facebook, are likely to lead younger generations of students to readily embrace e-learning in formal education (Baran 2010). Among the many SNSes that can be found online, Facebook is the social site many educators use to prompt students to become more involved in their courses. There is currently a growing body of evidence (see Cheung & Lee 2010) that suggests that Web 2.0 and social networking can increase social connectedness and engagement, given that young people spend on average more than six hours a day online (Pasek, More & Hargittai 2009). Social networking acts as a social domain and a communication tool for university students (Darwish & Lakhataria 2011). It may also be argued that e-learning platforms can be enhanced, and learning may become more effective, if Facebook is integrated into distance learning, not only as "social glue" (Madge et al. 2009), but as a means to enhance the academic aspects of the students' university experience (Giannikas 2017).

The present study focuses on the use of Facebook in e-learning university programs. It involved postgraduates studying Computer Assisted Language Learning (CALL) at Cyprus University of Technology. The present article provides the reader with insights on the use of Facebook in the online course and discusses:

1) the ability of Facebook tools to support e-learning from the students' perspective,

2) students' evaluation of their academic involvement on Facebook and Learning Management Systems (LMS), and

3) the effects of communication via Facebook for the needs of the course.

Review of the literature

Social media enables connectivity, interaction and collaboration. A Facebook user can send and receive "friend requests" and if the request is accepted, each individual is listed as a "friend" on each other's Facebook profile (Kolek & Saunders 2008). According to Nardi et al. (2000), Facebook users can become group members or "like" pages of topics of their interest, and create their own groups and pages. Groups have a "notification" function where the program sends the user notices of new posts or group updates. Games and applications available through Facebook can also serve as a source of entertainment. There are a number of ways to communicate via Facebook. For example, instant messaging is a text- or video-based communication tool that

allows for synchronous interaction between two or more individuals (Nardi et al. 2000), with messages being received instantly. Facebook's version is through Facebook itself or a separate application. Facebook users may also choose a more public route when communicating with others, through a friend's or their own "timeline", a space on the user's profile that resembles a notice board or a public forum where one can post messages or share photographs, files or music or video clips (West et al. 2009).

Facebook is widespread and has had a massive impact on communication and interaction (Amedie 2015); nonetheless, the integration of Facebook in higher education is still developing (Callaghan & Fribbance 2016). This could be considered a disadvantage, since university students are increasingly becoming tech-savvy and tech-dependent (Giannikas 2017). One key issue identified is the notion of changing boundaries in higher education. More specifically, Armstrong and Franklin, (2008, p. 2), write:

> The historically more certain boundaries where information and communications were controlled by universities is being lost and institutions are struggling to make sense of how to operate in this changed and permeable space. The mind sets and frameworks of reference that we have used hitherto are no longer adequate. Many boundaries have blurred: virtual and physical localities, professional and social lives, formal and informal learning, knowledge consumption and production.

Wang et al. (2011) writes that Facebook is the overwhelming favourite SNS among university students. This could mean that students' participation on Facebook may lead to positive learning outcomes, and could support the goal of retention and engagement in a university setting, especially within the e-learning context. More specifically, de Villiers (2010) studied the potential of Facebook groups and discussion facilities for focused academic use. A study of 35 postgraduate students who were encouraged to join an optional Facebook group found that the students benefitted from contact with fellow online counterparts as shown by higher participation and quality of work as they researched beyond the assigned study materials made personal contributions.

E-learning tools provide higher education with powerful mechanisms to alter the passivity that students may sometimes feel with in-person learning at a physical campus. On the other hand, there have been concerns that Facebook is a form of distraction and can negatively influence students' performance (Kirschner & Karpinski 2010). There is conflicting evidence on the impact of Facebook in higher education and on dedicated study time: some researchers suggest that Facebook users (i.e. students) spend less time studying and achieve lower academic results than students who do not use Facebook (Kirschner & Karpinski 2010), but other authors have not found this association (Kabre & Brown 2011). The limitation of these studies is that they have explored the impact of Facebook on individual academic performance, not focusing on the broader academic potential and educational benefits for students (Irwin et al. 2012).

Studies have shown that Facebook has tools to support educational activities by facilitating interaction, collaboration, active participation and resource sharing in a critical-thinking environment (Ajjan & Hartshorne 2008). Students have begun to demand more autonomy, connectivity and socio-experiential learning opportunities in their learning contexts (McLoughlin & Lee 2007). The tools in question also try to promote interaction and to actively involve students in their own learning process (Alejandre et al. 2012).

University faculty may benefit from recognising the inherent value in blending learning-management systems (such as Moodle and Blackboard) and Facebook for the needs of an e-learning course. Qualitative and quantitative studies have indicated that students using either Moodle or Facebook as a learning platform had similar perceptions of teaching and cognitive presence. Nonetheless, Facebook users had a better social presence than their Moodle counterparts (Kazanidis et al. 2018). Davidotch and Belichenko (2018) further argue that Facebook, and, more specifically, Facebook groups, can facilitate communication between students and foster a positive social climate that can prompt dialogue and sharing of materials. More specifically, Nalbone et al. (2016), who conducted a two-year longitudinal study including 1,033 students in the US, found that Facebook encourages greater interaction between students and instructors. Furthermore, they argue that students adjust more easily to an academic environment and show higher retention rates when they use Facebook in their studies.

Integrating Facebook allows content to be more accessible and flexible, which may enhance the quality of learning (Irwin et al. 2012). It is vital for e-learning instructors to harness student engagement for activities that work in conjunction with their own pedagogical philosophies and learning aims (Ferdig 2007). There is no doubt that e-learning offers flexibility and variety to students; however, the interactive and communicative element can be compromised when a course is mostly built on asynchronous tasks (Giannikas 2017). The research shows that Facebook is increasingly being considered as a pedagogical tool in e-learning settings, as it is believed to greatly improve communication in a familiar locale and increase interactive learning in an otherwise isolating environment.

Research method and data analysis

The current study commenced in May 2017. Data collection and analysis was completed using systematic analysis, which helped streamline the process. Determining the use of Facebook tools and students' academic engagement and communication within the online peer-learning context required collecting data directly from the students. This was accomplished through an online survey, where the students answered questions regarding their use of Facebook both generally and during the online course, and the extent, meaningfulness and relevance of the online tools in each student's experience. A number of coding categories and sub-categories were identified within the context. The process of coding involved the manual allocation of categories to each response as well as the use of the analysis conducted using Google forms. Microsoft Excel was used to complete this section of data analysis, as well as to facilitate diagnostic analysis and graphic representations.

Background of participants and context

The students used the learning-management system Moodle to download course materials, submit assignments and access further readings for each module. Facebook worked as a supplementary learning platform for the Second Language Acquisition and Research Methodologies in Applied Linguistics modules. The postgraduate (Master of Arts) students who participated in the study (n=14) were also employed foreign-language teachers in either the private or public sector. According to the data, students' motives to complete the course were to contribute to their professional development and enhance their skills in the use of technology in the classroom.

All students were personally contacted and invited to participate in the study. Surveys were sent to all electronically and there was an 87.5% response rate. The majority of the students who participated were based in Cyprus, with only two being based abroad; these students did not share the same native language. The majority of the participants were female (75%, n= 10), and the age ranged from 25 to 60 years old (25-30 years: 41.7%, n= 6; 31-40 years: 50% n=7; 51-60 years: 8.3% n=1). All students were new to Moodle; however, none were new to Facebook and none required any additional assistance or guidance to execute the tasks on the private groups created for the modules.

Background of the Facebook groups used

The instructor/researcher created a Facebook group before each module commenced, one for the Fall Semester module (Second Language Acquisition) and one for the Spring Semester module (Research Methodologies in Applied Linguistics). The access mode of the group was first set to "open to public". Once all students had joined the module group, the instructor/researcher set the group to "closed" to prevent random access and posts being visible to the public. The activities carried out in the group included sharing module announcements, resources, activities and reminders of webinars; organising tutorial sessions; and conducting online discussions, including requesting and receiving feedback from other group members. Students' activities were reviewed and graded, and peer-feedback was also encouraged. Additionally, anyone could post to the group without the permission of the group administrator (the instructor).

Course materials in a variety of formats (including text files, PowerPoint presentations, Google Docs or PDFs) were published on the group and the e-learning platform. All Facebook activities were accompanied by a rubric to provide students with the criteria of their grading; Table 1 gives a sample rubric.

Table 1. Sample Facebook rubric (Texas Education Agency 2006)

Criteria	Weight	Exemplary	Effective	Minimal	Unsatisfactory
Level of engagement	50%	Contributes to discussion by offering quality ideas and asking appropriate questions on a regular basis. Actively engages others in the discussion by inviting their comments.	Contributes to the discussion by offering ideas and asking questions on a regular basis. Often engages others in the discussion by inviting their comments.	Occasionally contributes to the discussion by offering ideas and asking questions. Sometimes engages others in the discussion.	Fails to contribute to the discussion. Fails to invite comment/opinions from other students.
Relevance of contribution to topic under discussion	25%	Contributions are relevant and promote deeper analysis of the topic. Consistently positive, cooperative attitude.	Contributions are always relevant. Usually positive and cooperative.	Contributions are sometimes off-topic or distracting. Seldom actively participates in the discussion.	Contributions, when made, are off-topic or distract others from discussion. Rarely, if ever, participates in the discussion.
Attitude	25%	Always supportive of other students' ideas.	Often supportive of other students' ideas.	Sometimes supportive of other students' ideas.	Occasional offensive behaviour.

Participants' use of Facebook

The first section of the survey requested information regarding the students' background as Facebook users, as it would offer valuable insights for the development and definition of this study's main points.

As shown in Table 2, the majority of the participants had created their Facebook account in 2013 (25% n=4) while only 16.7% (n=2) had been Facebook users since 2010. The data indicated that during and after the course of their master's degree, 25% (n=4) accessed Facebook for 30-55 minutes per day, 25% (n=4) stated that they were constantly on Facebook, 25% (n=4) spent two to three hours on Facebook per day, 16.7% (n=2) spent one to two hours per day and only 8.3% (n=1) spent four to five hours per day. The data from the survey also revealed that all participants used Facebook mainly to communicate with others, and 66.7% (n=9) used it to post news or articles related to their work. Nearly 42% (n=6) of the respondents reported that they used Facebook to post publications related to their studies, whereas only 8.3% (n=1) stated that they used Facebook for posts of a political nature.

Moodle versus Facebook

The survey questions referred to different features of Moodle and Facebook. The focus was on the technical issues students faced when using Moodle, and specifically the difficulties they occasionally faced when trying to access the Moodle discussion forum. Students also found that they were not as driven to become more interactive on the discussion forum as they were on the Facebook groups. They rarely revisited the forum after they had posted their response to an activity and would not provide feedback or discuss their ideas with their peers as they did on the Facebook groups.

Table 2. Responses to "Do you prefer group discussions for the MA in the Facebook groups or the Moodle discussion forum?"

Student 1	I prefer Facebook because I am more used to it than Moodle.
Student 2	Depends. Moodle gives me more time to think and has more structure. Facebook is, in that aspect, pretty messy. It also lacks any layout that might make the group discussion more coherent. However, it enables me to quickly share my thoughts.
Student 3	Facebook is more convenient.
Student 4	Facebook discussions because I can interact with my peers more easily.
Student 5	Facebook discussions, as it is much easier and interactive. I can always go back and discuss opinions.
Student 6	In the Facebook groups, we receive notifications on the smartphone, which is practical.
Student 7	Moodle discussion forum because I believe it is more formal.
Student 8	Moodle discussion forum because it is more university-like.
Student 9	Group discussions on Facebook as they are a lot more practical.
Student 10	Both are fine.

Student 11	Facebook is easier to use, [but] the discussion forum is not always accessible and it can be a bit robotic.
Student 12	Facebook is a lot more user-friendly.
Student 13	Facebook because it is easily accessed and user-friendly.
Student 14	Facebook groups as these are more instant and more easily accessible. Most people who have a Facebook account have the Facebook application on their smartphones as well, whereas the Moodle discussion forum mainly requires a computer device.

The majority of the responses indicated that Facebook was more accessible and user-friendly for discussions and knowledge-sharing in an e-learning context. Students' familiarity with Facebook and its user-friendly interactive features made discussion activities more effective. The responses in Table 2 illustrate that since university students need a platform that will facilitate their progress, the technologies used in social-networking sites can aid discussion and encourage a social constructivist approach, as the students feel that Facebook creates the opportunity to connect and build a learning community in a socially and educationally constructed network. Nonetheless, although the majority (n=10 out of n=14) viewed Facebook as a convenient outlet, others (particularly the older students) viewed it as informal, and expressed a preference for Moodle, even though it can be argued that Moodle tends to be more focused and encourages a lower degree of interaction (Brady et al. 2010).

Facebook Messenger

Instant messaging has become a key form of speedy synchronous communication, as it provides instant availability and support for multiple conversations. The data shows a heavy reliance on instant messaging, as it has been integrated not only in students' social life but in their academic life as well. In the case of the online master of arts program, all participants used instant messaging to contact their instructor rather than communicating via email. Table 3 lists their responses to the survey question regarding Facebook's instant-messaging platform, Messenger.

Table 3. Responses to "Do you use Facebook Messenger to contact your MA instructors? Why/why not?"

Student 1	I use it because I find it handy.
Student 2	I use it, but only to ask small questions or informal questions.
Student 3	Not very often, only when there is an urgent matter to talk about.
Student 4	Yes, because I consider it a convenient tool.
Student 5	Yes, because with Messenger I can receive prompt replies compared to emailing.
Student 6	Yes, I do, I find it quick and efficient.
Student 7	Yes, because it is easy and informal. I only use emails for formal situations.
Student 8	Yes, because it is quick and practical.
Student 9	Yes, because it is the easiest way to contact someone.

Student 10	Yes, I am using it to contact my MA instructors, since it's easier than email and [I] can get a faster answer from them.
Student 11	Yes, it is easier and instant. There are more chances of my professor replying on the spot than if I email them.
Student 12	Yes, I use it often, especially if I have a quick question.
Student 13	Yes, I prefer instant messaging to emails. Emails are a lot more formal.
Student 14	Yes, it is much easier.

The respondents indicated that using Facebook Messenger to communicate with their instructor was easier and more efficient and immediate than using other means. They saw the use of email as more formal, whereas Facebook Messenger was considered informal and instructors seemed more approachable as the communication process felt more personal. Nonetheless, the researcher suggests that instant messaging may become frustrating for faculty members and make it easier for students to overstep boundaries of appropriate communication, as well as reduce student autonomy, which is highly encouraged in e-learning programs. Instant messaging between a student and instructor indicates that students are willing to work at their own pace and integrate their studies into their personal and professional lives; living in a digital community where everything is done rapidly has resulted in students' perceived need for immediate communication with their professors. Communication using Messenger was frequent, with 33.3% (n=5) contacting faculty once per week, 16,7% (n=2) once every two weeks, 33.3% (n=5) once every three weeks and 8.3% (n=1) once per month.

The survey showed that 75% (n=10) of respondents used Facebook to communicate with their own students as well. Although this does not have an immediate connection to tertiary education per se, it is an indictor that future communication between students and instructors will be very different to what it is today. Table 4 contains the students' responses to the question of whether and why they use Messenger to communicate with their language learners:

Table 4. Responses to "Do you use Facebook to communicate with your students?"

Student 1	I find it easy and handy to use at all times.
Student 2	I use Facebook to communicate with my students, but I leave the initiative to them. There are some issues regarding online contacts between teachers and students, [and] I have to be very careful here.
Student 3	Privacy issues.
Student 4	It is a tool that everyone uses, therefore it is easy for me to get in touch with them.
Student 5	Because my students are quite young, hence I prefer not to get to know Facebook yet, in order to avoid other negative features of social networking.
Student 6	My students use Facebook to communicate with me so I use the same medium to reply.
Student 7	Because I find it easily accessible by anyone. My students ask for my Facebook account in order to contact me.
Student 8	As all students have a Facebook account that they use on a daily basis, it is more practical to communicate with them via messenger. Also, I can check whether they have seen my

	message.
Student 9	Because I can see when they are online and I can get an immediate response.
Student 10	They are too young to be using such a social tool.
Student 11	It is an instant way to communicate.
Student 12	It is an easy way to check up on them and their work.
Student 13	If I need to speak to them urgently.
Student 14	It is a practical way to communicate with my students from time to time.

Instant messaging is a means of uncomplicated communication that eliminates formalities. The survey indicates that there were only three cases where the students in this study felt that Facebook was not an appropriate outlet for communicating with their own students, as it was not age-appropriate for those who taught minors. There was also a privacy concern, which was not raised regarding using instant messaging to contact their instructors.

The participants who used instant messaging with their students reported that this type of communication was more useful because messages were received instantly. The participants also expected a definite and instant response from their students; incidentally, they had the same expectation of their own instructors. Additionally, Facebook Messenger lets users see individuals' availability and whether recipients have read their messages; this feature often encourages Messenger users to believe they have insights into their fellow users' schedules and habits (see Guidry 2004). It is noteworthy that none of the teachers mentioned whether they used instant messaging to organise a group project, or to have a group chat of any kind. Even though there could be pedagogical reasons for using this tool, participants had neither considered nor explored these possibilities; rather, instant messaging was seen primarily as an informal type of conversation that facilitated rapid exchange of information.

The interactive effect of Facebook

Survey responses show that 91.7% (n=13) of the study participants considered the use of Facebook beneficial, as it was integrated in the nature of their online course. Table 5 contains the participants responses about how they harnessed Facebook for its pedagogical benefits.

Table 5. Responses to "Do you think Facebook has pedagogical benefits?"

Student 1	It was easy to use and it served a purpose, but I think I am addicted because of the overuse.
Student 2	Easy way to share information.
Student 3	It was easy and the responses were instant. It was really the synchronous factor that was missing from the course.
Student 4	It was always accessible and there were no technical problems.
Student 5	It helped us collaborate with our peers and share our ideas on the topics under investigation.
Student 6	Facebook really benefited the nature of the online course because it proved an instant means of communication. It also posed as an alternative for material sharing when there were issues with Moodle.

Student 7	The module group was very useful and practical. It made our lives a lot easier.
Student 8	Facebook enriched the course and made it look more interesting and updated. It helped instructors share what they found interesting and/or relevant on the spot.
Student 9	Sharing experience and being informed about our colleagues' work was beneficial.
Student 10	Yes, it made communication much easier and it made the course friendlier.
Student 11	It made the instructors more approachable. It also made the course less intimidating, [although] I had been afraid to share activities, discuss and share my thoughts.
Student 12	I like sharing ideas in the Facebook group. I learned a lot from others and it also gave me inspiration to use social media in my classes.
Student 13	I think it was a very modern and interesting way of working with others. It gave me time to go back and look through the discussions and take it all in.
Student 14	It was a good alternative when Moodle was acting up.

The benefits mentioned in the participants' responses were peer learning, developing an improved rapport with their instructor, higher quality of work and increased engagement. Furthermore, the participants' responses show that this outlet constitutes an information channel where they gain task-related knowledge and theoretical information. Due to the topic-based and peer-initiated nature of the conversations on the Facebook groups, a systematic articulation of issues occurred that allowed even the less confident students to contribute. The nature and familiarity of Facebook also allowed students to follow the flow of the discussions, observe and reflect. The survey responses show that Facebook complimented the asynchronous nature of the course; however, there was a need for more synchronous exposure and communication, which is a common issue in distance learning.

While Facebook may not assist in students' learning per se, it supports the provision of productive and motivational pedagogy. One of the main components in this support is its interactive and friendly nature relative to other platforms. Students relate Facebook to an online meeting point with friends, making the groups used for their module less intimidating and more approachable. There is evidence suggesting that technology can support these interactions (Denning & Smith 1997), and Facebook is an outlet where this can occur. Continued integration of Facebook into courses may see further benefits through enhanced student-to-student and student-to-instructor communication.

Discussion and concluding notes

Fox (2002, p. 81) asserts that socially situated learning underlines how this type of learning theory "draws our attention away from all formal educational attempts to manage learning towards the many social spaces where learning takes place *naturally*, so to speak". The participants' statements about learning, sharing, observing and reflecting indicate that students' progress does not necessarily mean that learning occurs in a "formal" setting, within a "formal" classroom or a "formal" LMS; on the contrary, learning in higher education can occur anywhere, as long as there are meaningful interactions and guidance towards the construction of knowledge from sharing ideas. Nagel and Kotzé (2010) have suggested that since new forms of learning in a community can also prove to be incidental, educators must consider the notion of social networking and

community building as opportunities for education that may have transpired within a Facebook group/community.

This could very likely come in the form of constructivism, by constructing knowledge in a digital community where students are encouraged to learn together and from each other. As Wenger (1998) has argued, the social theory requires active participation in social communities. Facebook, as shown in the current study, acts as a tool to foster and develop an online teacher community. This involves discussions and mutual engagement in action and knowledge construction. The positive impacts include learner motivation and engagement (Mills 2009; Northcote & Kendle 2001). On the other hand, the negative impacts include overspending of time (Fodeman & Monroe 2009) and the issue of formality (Baran 2010), which were also mentioned in the students' survey responses (Tables 2, 3 and 4). Thus there is an ongoing debate as to whether Facebook should be considered a pedagogical tool in higher education. The responses from this study's participants suggest that university students see more positive aspects than negative. They focus on the practical benefits of Facebook, and without realising it blend Facebook's conveniences with constructivism. Despite the positive outcomes that have surfaced from the present study, it is vital to stress that Facebook must be integrated with caution. To keep a balance and moderate the negative aspects of Facebook requires guidance from the faculty member. Policies and guidelines that support the use of Facebook should be distributed to students at the start of the course. It is up to institutions to integrate Facebook, or any social-media platform, so that it compliments e-learning courses. In a well-balanced and planned curriculum the negative aspects of Facebook can be avoided and the positive can prevail.

Although this study's results are only specific to postgraduates of Cyprus University of Technology in an e-learning program, they show that over 90% of students use social-networking sites daily. This study's findings suggest that Facebook is a social tool that can encourage interactive and collaborative learning within an environment where students do not meet in the traditional sense. The online learning context can alienate students, but Facebook can be the "pedagogical glue" that brings them together and helps them settle into contemporary university life. Furthermore, the use of social-networking sites in higher-education settings prompts students and practitioners to use them within their own classes and introduce their students to new concepts of learning. Therefore, it is important that the tertiary sector is aware and accepting of Facebook tools that could be used in e-learning courses.

The present small-scale study suggests that there is need for further research in this area of education. Additionally, various features and applications (such as Messenger and Facebook groups and pages) should be used in the research to distinguish their unique usefulness in the university context. Based on the data, Facebook could be used as an online environment to facilitate students' education, help them collaborate, increase their motivation and gradually build a strong learning community. As Prensky (2008, p. 3) has argued, "we must get our teachers – hard as it may be in some cases – to stop lecturing, and start allowing students to learn by themselves".

Facebook may offer students the opportunity to become autonomous and eager to explore their own potential as learners and as professionals and experience a new digital meaning of constructivism.

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