

Transformations in Learning Spaces -Impact of Mobile Technologies on Student Learning

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Received: February 4, 2024 Accepted: March 6, 2024 Published: March 21, 2024

doi:10.5296/jet.v11i2.21782

URL: <https://doi.org/10.5296/jet.v11i2.21782>

Abstract

As a result of innovation in technology, social media and mobile devices have changed the face of teaching and learning. The use of tools such as Facebook, Twitter, Blogs and Short Messaging Services (SMS) are continuing to grow with informal learning taking place outside formal educational settings. This paper draws on research conducted at a private tertiary institute and presents findings from the study. The focus of this study was to determine the learning that occurs through informal learning networks and how these support and enhance learning and wellbeing, particularly amongst international students. The research considers the implications of how teaching and learning are impacted by social and informal networking in the digital world.

Keywords: social media in education, mobile technologies, informal learning

1. Introduction

As a result of changes in technology and means of communication, learners are now using a number of mobile technologies and integrating technology in their learning. Students in Tertiary institutes are tech savvy and using more and more of mobile devices like Smartphones and iPad. The use of tools such as Facebook, Twitter, Blogs and Short Messaging Services (SMS) are continuing to grow with informal learning taking place outside formal educational settings. This paper draws on research conducted at a private tertiary institute and presents findings from the study. The focus of this study was to determine the learning that occurs through informal learning networks and how these support and enhance learning and wellbeing, particularly amongst international students at a private tertiary college. Informal learning is defined in this research as learning that takes place independently from instructor-led programs and does not follow a specified curriculum. Informal learning takes place beyond classrooms in places like parks, galleries etc. With the added difficulties faced by international students this study also concerns the use of informal social networking in how students create their own support as a pastoral system and means of

creating a sense of community. Social networking in this research is defined as a way of communicating and keeping in contact with family, friends, colleagues, and community through the use of Facebook, Twitter, blogs and SMS. This paper discusses emerging findings and the implications of these findings for teaching and learning in the age of mobile and flexible learning.

1.1 Background

As a consequence of innovation and changes in technology, use of mobile technologies has become a popular learning tool amongst educators and learners. Learners today are using numerous mobile technologies such as Personal Digital Assistance (PDAs), cell phones, portable games devices; tablets and laptops. As a result, students are now using these technologies to learn anywhere and anytime. Students are using several informal and formal spaces like university email systems, online platforms and social media like blogs, applications and mobile text messaging. Several studies have investigated the use of digital media tools by students (Muftah, 2022; Mayberry, Hargis, Boles, Dugas, O'Neill, Rivera & Meler, 2013; Timmis, 2012; Conole, De Laat, Dillon & Darby, 2008; Doukas, 2008; Hung, Tan & Chen, 2006).

Hung et al. (2006) have analysed how mobile technologies can be utilised for learning purposes. They argue that learning needs to be relevant and must be “derived from an authentic demand of interest to the learners” (Hung et al., 2006, p.19). Koszalka and Ntloedibe-Kuswani (2010) point out that the students are not just passive receivers of information, but they engage and interact with a range of education resources in informal settings while using mobile technologies. The authors evaluate many learning potentials of mobile technologies. Mobile learners construct and share knowledge anywhere and are not necessarily located at a fixed location. Similarly, Warger and Dobbin (2009) point out that teaching and learning has become very flexible and takes place beyond classrooms in different places like cafes, parks galleries and other locations (Warger & Dobbin, 2009).

Timmis (2012) in her study looks at the use of digital media by students and explores how students use instant messaging to offer peer support to students in a climate of technological innovations and cutbacks in funding for higher education. The informal networks and technologies that students use may become important ongoing support structures for students. The author illustrates how students use instant messaging not only to support each other but also establish a community of learners to create and construct knowledge.

McCarthy's (2013) study reports the use of Facebook as an online learning forum for design students over a period of four years. The study started with the student cohort from University of Adelaide and later expanded to other universities in Australia and Singapore. The study highlights how web 2.0 technologies have changed the way students learn. Social learning networks encourage collaboration and participation, students are not only receiving information they are participating, collaborating, and creating their own content. Yu, Tian, Vogel & Chi-Wai Kwok (2010) argue that online social networking impacts on students to adapt to the university culture and greatly influences their learning.

In another context Deng and Tavares (2015) examined the use of Facebook and Google sites by a group of pre-service teachers in Hong Kong. The results from the study show that students exchange ideas and information on a variety of topics and get peer support through Facebook. Google sites on the other hand complimented Facebook by providing students opportunities to share resources and ideas. Another study by Lu and Churchill (2014) investigated undergraduate students' use of social networking to support their learning activities at a Chinese University. The findings suggest that social interaction was generally teacher centred; social oriented and short lived. Several factors like preferred learning approach and collaborative strategies influenced student interaction using social networks. Interestingly, students in this study found exchange of ideas with other students worthless and ranked feedback from teachers to be more useful for individual learning. This could be as 'Confucian-Heritage Culture (CHC)' of the students influenced their views about learning (p. 483).

A recent study by Gaftandzhieva and Doneva (2021) investigated the use of social networking in different parts of the world. This study is interesting as it also focused on teachers' preparedness and participation in research related to the use of social networking in higher education. The study found that many teachers do not use social networking in their teaching practice however, majority of the teachers were positive about the use of social networking in education.

Globalisation is another significant element that has implications for student learning. As a result of globalisation there is a shift towards knowledge economies and knowledge societies. There is urgency for citizens to learn new skills and create new knowledge (Rana, 2012; Lai, 2011). Indeed, as Muftah (2022) points out social networking has become a global phenomenon that has led to a paradigm shift in the teaching and learning during recent years. Lai further points out that people need to adapt to the changes for the knowledge - based societies. Higher education institutes need to improve problem solving skills of students to adapt to the changing requirements of labour market. Digital technologies have become a key factor in generating knowledge and wealth. Moreover, online technologies overcome the barriers of time and place and provide new opportunities to learn (Lai, 2011). Related to the phenomenon of globalisation is the large -scale migration and movement of people. As pointed out by (Lai, 2011) there is an increase in enrolment in higher education and diversification of student population. There has also been a great increase in the enrolment of international students, especially in developed countries like USA, UK, Australia and New Zealand. Therefore, this study focuses on the learning that occurs through the digital informal learning networks and how these enhance learning and student wellbeing, particularly amongst international students.

While current literature focuses on the use of social media for teaching and learning purposes, not many report on student-initiated use of social media to enhance their learning experiences. In addition, little research has been done that focuses on students' use of social media to enhance their social and emotional well-being. This study hopes to fill that gap and build on understanding of students' experiences of use of social media. It draws on student voices to understand how learning is constructed in the age of mobile technologies especially amongst

international students.

As a result of the onset of COVID 19, students and teachers were pressed to use different digital tools including informal learning networks in education. Academics had to overnight make changes to their teaching and students had to move to online distance learning for an indefinite period. In this context this study can provide insights to implement pedagogical improvements in relation to use of social media as a teaching tool. It also provides further understanding of the use of informal learning technologies by international students.

2. The study

The study employed an exploratory research design and drew on data from survey questionnaires and focus group interviews. This study aimed to explore how and why international students use social media as informal learning contexts, and what implications could arise for teaching and learning in an online course setting. The study was conducted at a private tertiary institute in New Zealand, Auckland. Participants were recruited from all international students (undergraduate and post-graduate) studying at the tertiary institute attending onsite tutorials in a Semester.

2.1 Data Collection

A survey questionnaire and focus group were the main methods to collect the data. The purpose of the questionnaire was to find out how many engage in social media, which social media platform was used by the students and to get an indication of the main reasons for the use of social media as a learning space. Based on the total number of students in the researched cohort engaging in social media as learning spaces, follow up focus group meetings were held to collect more in-depth qualitative data regarding reasons for and perceived benefits of using social media to discuss course content. The focus group discussions complemented the survey questionnaires and improved the validity of researchers' judgement and hence provided more validity to the study.

The study was conducted at a private tertiary institute in New Zealand, Auckland. Participants were recruited from all international students (undergraduate and post-graduate) studying at the tertiary institute attending onsite tutorials in a Semester. Survey questionnaires were given to all (105 undergrad and 85 postgraduate) international students attending the tutorial and 93 undergraduates and 76 postgraduate students agreed to participate and completed the Survey. Follow up focus group discussions were held with a group of five postgraduate students and seven undergrad students. This paper reports on the findings from the survey questionnaire and focus group conducted with undergraduate students. The first section of the questionnaire focused on demographic information and types of social networks used by the student teachers and frequency of usage. The second section included questions related to the purpose of use and educational outcomes for the learners.

Data were numerical and qualitative. Qualitative data was thematically collated using open coding (Corbin & Strauss, 2008). The analysis involved careful reading and identifying meaning across the data. The data was carefully examined and classified according to the themes that emerged. Specific verbatim comments made by students are also included in the discussion that follows.

3. Research Findings and Discussion

Based on the survey questionnaire data, several usages of social networking sites were identified including socialising, discussing course content, making friends, sharing information and more. Table 1. gives the frequency of the use of social networks by the undergraduate student teachers.

Table 1. Frequency of use of social network tools by undergraduate students (N= 93)

How often do you use the social networking tools?		How often do you use the social network tools for educational outcomes?	
Everyday	78	Everyday	23
Three times a week	3	Three times a week	18
Once a week	1	Once a week	6
Sometimes	7	Sometimes	22
Not sure	4	Not sure	19
Other		Other	5

Students were invited to respond to frequency of using social networking tools ranging from every day to not sure. Among 93 respondents 78 responded that they used social networks every day, and the rest at least once a week. Thus, majority of students were using social networking tools every day.

A number of students reported using social media tools to support their learning and interactions in addition to the learning management system (LMS) provided by the institute. Table 2. gives an indication of the social media tools used by the students and for what purpose.

Table 2. Social media used by undergraduate students

Social media	Yes	Social Private /	Learning/ Study	Other purpose
Facebook	78	75	15	2
Twitter	8	8	1	
Blogs	22	16	4	2
Google group / Hangout	19	19	8	1
Chatrooms	21	16	8	2
Others (please specify)				
WeChat 23	43			
Kakao Talk 3				
QQ 4				
WhatsApp: 5 Nymgo: 1				
Pinterest: 5				
Quora: 1				
Instagram: 1				

Majority of the students (78) responded that they used Facebook. Facebook was used mainly for social purposes. The second most popular social media tool used by the students was WeChat (23), majority of these were used for social purposes. Social media like Facebook were reported to be used by the students to interact with friends on a daily basis. Students also used blogs (22), chatrooms, google groups, twitter, Instagram, and other apps. The findings also indicate that students are using these social media tools for various purposes. Many of them responded that they used it for study purposes, sharing information, discuss assessments and making friends. This corresponds to the findings of the study by Muftah (2022) that investigated the impact of social media platforms for learning English language from the perspective of undergraduate students in Saudi Arabia. The findings suggest that the amount of exposure and use of social media influences literacy practices of students. New technologies alter the way people conduct their lives and influences their thinking.

Another participant noted “I use WeChat to discuss my course with friends, it is more useful this way and I get to know more about my subject”. Another commented “I find social media very useful to discuss assessments and ask questions”. When asked about the educational outcomes that arise from using social media, students responded that it supported them to learn from other students; share ideas; create support network and created a sense of belonging which helped as they were international students. It is interesting how students pointed out that use of social media helped in their learning experience and helped to create support networks and a sense of belonging. One student commented “It helps to form close links with class-mates, friends and family”. Another student pointed out how it provided an “emotional support for overseas students”.

Focus group interviews were conducted as follow up on the questionnaires. These added to the data collected from the survey questionnaires. Focus group gave further opportunity to the participants to extend on the information provided in the survey. The participants in the focus group responded that they used social media like Facebook and WeChat to contact their parents back home. A few of the students commented that families back home like to see the pictures they post on social media. Parents like to see what their children are doing while studying overseas.

Students also commented that social media like Facebook were very educational and helped them to extend their knowledge about early childhood education. One student commented she interacts with a Chinese teachers' group on Facebook. "We talk a lot about activities in different early childhood centres. For example, how teachers made gloop themselves from scratch". Other students added to this discussion and said it was a great platform to engage with parents. Parents post how they cope with raising their children. And there are interesting comments from other parents and teachers. Montgomery & McDowell (2009) similarly point out that advantages of informal learning were enormous for international students. Their findings suggest it helped master communication skills and enhanced comprehension of subject knowledge. Related to this another study by Mathews Andrews and Adams (2011) reported that informal interactions contributed towards sense of belonging; a space where long lasting friendships were formed.

Some of the students shared that they have a study chat room on Viber, where they share resources and give ideas about early childhood activities. They also discussed "... job openings, talk about assessments, it gives a clear direction... that you are on track with the assessment". The students however found it challenging to chat and discuss things on the chat – message board on the LMS provided by the institute as they do not always know the other students enrolled in the same course online. They felt that they cannot have the same trust as in the group they have formed with their own friends. Similarly Irwin, Desbrow and Leveritt (2012) suggest that the university learning management system and the interactive learning activities offered by the universities lack the social connectivity and social spaces that students are familiar with. The authors suggest that the social medias offer better support for collaborative and effective learning compared to those offered by university learning management systems like Blackboard. Students also commented that they got to see a lot of videos and resources shared from different countries online. They learn a lot about different philosophies and pedagogy and how others are doing things in their own countries. Shonola, Joy, Oyelere and Suhonen (2016) have similarly found that students in Nigerian higher education institutes use mobile technologies to exchange messages about their study, share academic files, search the library databases and hold discussions with their classmates.

Students commented on how useful social media is for international students in particular. One student pointed out "I can see people from my family every day. I can talk different things with my parents." Another student pointed out that this makes her feel homesick. However, others pointed out that they feel connected as they can talk to them and see them every day. One student said: "When I go to a restaurant, I take pictures and send them back to my parents. First few months when I came here, I took pictures of where I went, what food I

ate. Even my grandfather was excited to see the pictures”.

These findings suggest the international students use social media tools like WeChat and Facebook to support them with their learning and this also helps to create support networks and a sense of belonging. Social media helps them to build their knowledge in a foreign context and they can enhance their knowledge by sharing and supporting each other. Therefore, the learners are not just receivers of knowledge as in a formal classroom, but they are co-constructors of knowledge. As Wagner and Dobbin (2009) point out mobile learning is associated with learners sharing knowledge and they are not located at a fixed location. They access information and resources they need there and then as they have questions. Teaching and learning has become more flexible. Learning takes place in different spaces like cafes, parks, galleries, and other locations (Warger & Dobbin, 2009).

According to Sánchez, Cortijo, and Javed (2014) in today’s world students have been interacting with digital technology from early years therefore, it is important to understand the shift that has taken place towards technology. Teachers now need to recognize the learning that takes place in informal settings outside formal learning structure. Use of social media, as the data suggests empowers the learners to collaborate and form a sense of community that helps international students to settle down in a foreign country. However, there are various factors that affect the use of technology in higher education, one that is cited by Lai (2011) is that there is often no incentive for teachers to put their time and effort towards new pedagogical practices related to the use of technology in teaching and learning. Similar to Lai’s views, McCarthy (2013) highlights the need for institutes to recognize the potential of social learning networks to lead the transformation of pedagogy and promotion of learner autonomy and creativity.

In relation to this it will be interesting to conduct further study to unpack the discourse of international students studying in a foreign country. It would also be relevant to explore how social media is used today after the COVID 19 epidemic.

4. Research Implications and Conclusion

The findings suggest that technology including social media and social networking sites should be a part of teaching and learning and require pedagogical changes. When we look at the surge in student use of social media and how students share information and knowledge using social media, it is important to understand the implications for pedagogy. The design for learning should consider students’ preference of use of social media. Social media could be used to make teaching more student-centred. This would involve facilitation of interactive collaboration and exchange of information in the classroom setting whether online or face to face. Teachers need to use interactive and innovative ideas on social media like online debates and group discussions. There is a need to also provide professional development opportunities in the form of workshops, seminars to both students and teachers on utilisation of social media as instructional technologies in teaching and learning. In order to implement the findings of research studies and for educational technology to be used effectively, teachers must be ready for a paradigm shift towards a pedagogy enhanced by the new technology including social media. This study is an exploratory study on students’ use of

social media to enhance their learning and emotional well-being. Further research needs to be done to understand how digital tools including social media can be integrated as part of teaching and learning. And further explore the benefits of the use of informal learning technologies for international students.

Acknowledgments

Not applicable.

Authors contributions

Not applicable.

Funding

Not applicable.

Competing interests

Not applicable.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Macrothink Institute.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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