

A Study on the Impact of Collaborative Learning on Academic Performance Using Facebook in Higher Education

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Accepted: 1 March 2020 | Published: 15 March 2020

Abstract: *Social media is broadly considered to create an effective collaborative learning experience among educators and students. Despite today's growth of social media usage for learning, there is an astonishing lack of empirical research done in Malaysian educational institutions on improving students' academic performance through the effective use of social media to create a desirable outcome. Thus, this research offers a review of literature that focuses on the factors for an effective collaborative learning and its prominent effect on students' academic performance. By using an online survey questionnaire, the findings were analyzed using descriptive statistics in order to justify the research objective. Results from the respondents (N=200) showed that students do intend to use social media for collaborative learning but, there are also several other factors such as intention, interactivity, engagement that plays an important role in creating a desirable collaborative learning experience. Thus, this research concludes that social media can indeed be utilised as an educational tool with the purpose of assisting students to collaborate and interact effectively with their educators when provided with proper direction.*

Keywords: Collaborative learning, Facebook, academic performance

1. Introduction

In today's generation, most of us have already been exposed to the social media phenomenon. Social media has always been portrayed as a channel through which knowledge can be shared among communities and also learners (Al-Rahmi & Zeki, 2017). Social networking is regarded as by which individuals with the same interests take opportunity to interact by creating, sharing and exchanging ideas through this virtual network whereas, there are some that consider it a global network that aids communication (Bakar et al, 2015). By using social media, interaction and exchanging of information has now become easier. According to Alarabiat and Al-Mohammad (2015), Facebook is one of the social media that has obtained a high acceptance around the world. It has been revealed through statistics that Malaysia is among the top five countries in regards to the number of Facebook accounts that have been created (Ainin et al., 2015).

Additionally, the application of social media solely to connect with others is expanding apart from it being widely used for social communication among younger generations, also it has shown an increasing use in providing learning activities as well (Al-Rahmi, Othman & Yusuf, 2015). As highlighted by Ainin, Naqshbandi, Mogavvemi and Jaafar (2015), social networks such as Facebook is increasing in terms of usage for academic activities in the institution which allows connection with current or even potential students to deliver

informative content. This demonstrates how the expansion of social networking sites can contribute to creating a learning environment and be utilized as a teaching tool.

As reiterated by Gruzd et al. (2016), there has been an increase of application of social media in higher education as a tool for teaching which corresponds to the increasing use of it by students; and is recognized for its potential increase in learning and teaching experience. By using social media as part of education, instructors can reach a wider network through simultaneously knowing how students live through online, actively posting and reading, as well as sharing various application of life documentations, promote social interaction and as a platform to acquire resources. Moreover, the use of social media can be an ideal communication tool that can be implemented by educators to attract students' attention with its features (Moghavvemi, Paramanathan, Rahin & Sharabati, 2017). This can create a better learning experience for students in expanding their knowledge.

According to Zincir (2017), social media now takes the structure of online platforms that enables connectivity, communication and collaboration to take place. Primarily, there were multiple benefits founds on Facebook usage for educating such as an increase in student's performance, teacher to student and student to student interaction, convenience of understanding and engagement (Chugh & Ruhi, 2017). Moreover, Facebook's social communication feature benefits both students and educators by producing an online class and promoting collaborative learning (Menzies et al., 2017). Additionally, social media usage facilitates collaborative learning among users as well as create a platform to allow knowledge to be shared, resulting in better understanding among peers and the lecturer, which can lead to an increase of knowledge and improvement of student skills (Michikyan et al., 2015). Therefore, indicating that collaborative learning through social media does have positive feedback.

Thus, the main objective of this study is to identify the impact of collaborative learning through Facebook on the academic performance of Sunway University students. There are two research questions developed, which are: 1) What are the factors affecting collaborative learning through Facebook in higher education? 2) What is the impact of collaborative learning through Facebook towards students' academic performance in higher education?

2. Literature Review

Use of Facebook in Education

The usage of Facebook is increasing daily as a form of formal teaching and learning tool as educator's instructional approaches are getting more innovative (Wakefield, Wareen & Ponnors, 2016). Over time, Facebook has been utilised in education and has become the most persistent used social media in educational studies (Akçayır & Akçayır, 2016). Facebook has founded a platform to not only create a formal learning and teaching environment but at the same time, it has the ability to support informal learning and teaching process (Asterhan & Rosenberg, 2015). This has led to an improvement in communication among the learners who utilize social media. According to Balcikanli (2015), Facebook can be an effective educational tool in the context of learning as it assists them in communicating, collaborating and sharing of resources by adapting to the usage of technologies in a learning environment.

Based on Michikyan et al. (2015), a study that was carried out in the context of higher education showed that a student is most likely to use Facebook along with other social networking sites to nurture the growth of their learning process. As discussed by Tess (2013)

on evaluating higher education classes that utilize social media, it was concluded that most universities own the infrastructures and aid to use social media, but the instructors were not proficient in using social media as a part of their teaching instruction. This has demonstrated that the technologies and opportunities have been provided but the instructors lack the skills to implement social media usage as an educational tool.

Furthermore, as stated by Al-rahmi et al. (2015), by utilizing social media, students gain better understanding on sharing, communicating, collaborating as well as socializing information and sharing knowledge. In order to show improvement in the learning experiences of the students, it is required to implement social media use in higher education. It is noted that there are many advantages to the implementation of social media in higher education. Facebook has notably enhanced educators teaching and student's learning as it has allowed them to provide feedback and explore into different digital learning styles of students which in a way helps them to exchange information and collaborate effectively (Chugh & Ruhi, 2018). It is also noted by Rashiah and Ratnesway (2014), that Facebook usage in education provided alternate ways to engage in learning with the students. Thus, Yen (2016) claims that features that are present in social media such as contribution, consumption and participation, along with its audio-visual functions could contribute to enhancing the diversity of teaching methods.

Collaborative Learning

According to Ojo and Ntshoe (2017), collaborative learning can be defined as an "educational method used in teaching and learning environments, which involves two or more people in groups working together to learn, solve a problem, complete a task, evaluate one another's ideas or create a product". This form of learning contributes to creating a more positive learning environment, especially for students who enjoy working as a group compared to working independently. The study also discovered that students tend to obtain greater learning skills such as improvement on basic knowledge and critical thinking, during collaborative learning rather than working independently. It is also reported that the students also displayed great motivation and perseverance in problem solving when working collaboratively.

A collaborative learning environment contributes to sharing of knowledge and transmission among individuals as they work together to achieve a common learning goal (Brindley et al., 2009). That knowledge is then created as a group and shared among each other after gaining it from their instructors or educational sources, whereby Brindley et al. (2009) found that the learning process that they go through creates a bond among themselves as the constructed knowledge was dependent on each other's contribution. Therefore, it was concluded that the quality of learning environment where students are given the opportunity to engage and interact in collaborative learning contributes to a more effective learning outcome and the ability to grow on higher order thinking skills.

Facebook and Collaborative Learning

Collaboration can be formed in several different ways and on social networking sites, particularly through Facebook these days. These platforms can be utilized for various functions such as hosting events, debating, reviews as well as creating a space for discussion of ideas to take place (Mbodila, Ndebele & Muhandji, 2014). Collaborative learning can be made up of connections and interactions of these students as social media allows an extensive learning environment as only a fraction of learning happens in the classroom environment (Chen & Bryer, 2012).

Besides, social networking sites along with students' engagement shows that daily interaction is high among peers and this made them feel that their connection has strengthened, subsequently, allowing users to get in touch and unintentionally create a learning environment (Al-rahmi, Othman & Yusuf ,2015). Additionally, it is also stated that with the help of social media such as Facebook, it encourages the sharing of knowledge and learning among the students and instructors similar to real life situations. Therefore, the researchers proved that the relationship between engagement and social media turns out to be positive.

Facebook Usage and Academic Performance

Based on a research carried out by Chugh et al., (2012), it is found that the faculty views social media as a potential platform to stimulate active participation in disseminating information along with creating a process where learning can take place through social media as a teaching platform. Social networking sites such as Facebook can create an interpersonal connection, leading the individual to being part of an unfamiliar social environment. In a study carried out by Cuesta et al. (2016), it was stated that students collaborating in groups created on Facebook, performed better than those who did not take part in it. Moreover, in a related study by Lambic (2016), it was found that there is a positive correlation between students' academic performance and the frequency of Facebook usage for educational purposes. In addition, Moorty et al.,(2019) stated that Facebook has allowed students to share their common knowledge and interest, which in return creates a platform for effective collaboration to discuss and facilitate understanding of concepts. These studies have shown that Facebook can indeed be used to improve students' academic performance by creating a positive learning experience for them.

Collaborative Learning and Academic Performance

A study carried out by Scager et al., (2006) discovered that there is significant relationship between learning performance and satisfaction of the student in acquiring knowledge through collaborative learning by using social networking platforms. This shows that with the increase of collaborative learning, there is an increase in academic performance as well. Further studies also presented evidence on student achievement showing a positive outcome, stating that most of these students that showed a positive result in the course had shown increase in collaboration and information exchange compared to face-to-face situations (Ainin et al., 2015). Furthermore, Al-rahmi, et al. (2015) stated that the use of collaborative learning in social media as a platform contributed to improvement in the academic performance of students as it created high interaction among students and their supervisors. This then leads to enhancing of communication skills and allowing the exchange of information. Such, it can be concluded that with the right resources along with exchanging and sharing of information by collaborative learning, students' academic performance can be improved.

3. Methodology

The quantitative method used is a survey questionnaire that was constructed based on previous studies that was carried out in this area of study. The respondents for this research solely focused on students in Sunway University which includes the varieties of departments existing in Sunway University. The respondents that took part in the study were 200 undergraduates between the ages 18 to 26 years. By using SPSS version 25, the collected data was analyzed using descriptive analysis which included the mean and standard deviation.

4. Results and Findings

A likert-scale which contained three statements was incorporated to explore the students use of Facebook in general and on their usage of Facebook for educational purposes. The data was analyzed through descriptive analysis and quantified into a table to illustrate the mean score and standard deviation of students' Facebook usage.

Table 1: Facebook Usage for Educational Purposes

Item	Mean	Std. Deviation
Do you use Facebook often?	3.71	.824
Do you use Facebook for education purpose?	3.56	.889
Do you intend to use Facebook for education purpose?	3.55	.996

Table 1 shows that, the mean score for students that use Facebook is 3.71 (SD=0.824). Moreover, the mean score for students who use Facebook for their education purpose is 3.56 (SD=0.889) whereas, students who intended to use Facebook for education purpose is 3.55 (SD=0.996). Hence, this finding shows that respondents agreed that they use Facebook often and that they do indeed use it for educational purposes as well. In terms of intention to use Facebook in the future for educational purposes, the students agreed that they have the intent to do so in the future.

Table 2: Interactivity with Peers

Item	Mean	Std. Deviation
Using Facebook in class facilitates interaction among peers.	3.71	.855
Using Facebook gives the opportunity for discussion to take place.	3.88	.864
Using Facebook allows the exchange of information among peers.	3.83	.880

Based on table 2, the highest mean score of 3.88 (SD =0.855) shows that students agreed that using Facebook gives the opportunity for discussions to take place. The students also found that Facebook use in class enables to facilitate interaction among peers with the mean score being 3.88 (SD=0.864). As for Facebook allows the exchange of information among peers to take place, the mean score is 3.83 (SD = 0.880). With that being said, these results found that students agreed that by using Facebook, there is indeed an opportunity for interactivity to take place among their peers. This has shown that Facebook as a platform has given students the opportunity to interact and discuss any information that contributes to their education and learning.

Table 3: Interactivity with Educators

Item	Mean	Std. Deviation
Using Facebook in class facilities interaction with the educator.	3.67	.892
Using Facebook allows opportunity to discuss further with educator.	3.74	.909
Using Facebook allows the exchange of information with educators.	3.78	.873

Students interactivity with their educators by using Facebook allows the exchange of information to take place indicated the highest mean score of 3.78 (SD=0.892). The mean score on using Facebook allows interaction to happen between students with educators is 3.67 (SD=0.892) and the mean score for using Facebook allows that opportunity for students to further discuss with educators is 3.74 (SD=0.909). These results illustrate that students agree that using Facebook as a platform to interact with their educators enables them to exchange information with the academics.

Table 4: Collaborative Learning

Item	Mean	Std. Deviation
Actively collaborated in my learning experience by using Facebook.	3.77	.755
Freedom to co-create my own learning experience by using Facebook.	3.81	.948
Co-created my own learning experience by using Facebook.	3.79	.911

As illustrated in Table 4, the statement on students having freedom to co-create in their own learning experience scored the highest mean score of 3.81 (SD=0.755). The mean score for students having co-created their own learning experience is 3.79 (SD=0.911) and, the lowest mean is students who have actively collaborated in their learning experience which is at 3.77 (SD=0.755) Thus, this shows that there are still students who have not actively collaborated in their learning experience although they agree that they have the freedom to do so.

Table 5: Engagement

Item	Mean	Std. Deviation
My opinion has been taken into account when using Facebook for collaborative learning.	3.62	.845
My peers and educator interactions made me feel valuable.	3.84	.847
Using Facebook has favoured my personal relationship with my peers and educators.	3.69	.983

Referring to Table 5, the highest mean shows that students agree in feeling that their peers and educator's interaction made them feel valuable which is at 3.84 (0.847). Students felt that by using Facebook, it has favoured their personal relationship with peers and educators, which has scored the mean of 3.69 (SD=.983) and for students feeling that their opinion was accounted when using Facebook for collaborative learning illustrated the lowest mean at 3.62 (SD=0.845). Hence, the results show that students agreed that their peers and educators made them feel valuable when they engage through collaborative learning, although the findings indicate there are lesser students who feel that their opinion has been taken into account.

Table 6: Academic Performance

Item	Mean	Std. Deviation
The use of Facebook in collaborative learning has improved my comprehension to complete a task such as completion of assignment, discussion, etc.	3.65	.922
The use of Facebook had led to a better learning experience in order for me to perform better.	3.72	.921
The use of Facebook allows me to understand the concept of a subject better.	3.67	.929

Based on Table 6, the highest mean score shows that the use of Facebook has led the students to a better learning experience to perform better, which is at 3.72 (SD=0.921). The mean score for students who have felt that collaborative learning through Facebook has improved their comprehension to complete a task such as completion of assignments and discussion is at 3.65 (SD=0.922). Additionally, students felt that the use of Facebook has allowed them to understand the concept of a subject better is at 3.67 (SD=0.929).

5. Discussion and Conclusion

The findings show that intention, interactivity and engagement play a significant role in the effectiveness of collaborative learning. The results are parallel with a similar study that is carried out by Al-rahmi, Othman and Yusuf (2015) whereby the study outcome of students taking part in collaborative learning through the use of Facebook has shown a positive outcome. This is in terms of intention to use social media in higher education and by the facilitation of social media usage that boosts the student's interactivity, engagement and

experience. Additionally, findings showed that engagement played an important role for an effective collaborative learning environment which is alike to a study completed by Al-rahmi et al. (2018), whereby the researcher's findings illustrate that engagement through social media such as Facebook can create a positive and productive learning environment that is crucial for the students and educators learning and teaching experience. Adding that, through collaborative learning, the learning condition of students with their educators can be improved by encouraging engagement and interaction of students and educator discussions of subjects and projects.

Furthermore, students agree that collaborative learning through Facebook is able to improve their academic performance, as it has contributed to improving their comprehension to successfully complete a task, creating a better learning experience and allowing them to understand the concept of a subject better. Similarly, it was found that collaborative learning through social media improves the student's academic performance as it can facilitate high interaction with peers and supervisors and enhance their communication skills (Al-rahmi et al., 2015). This indicates that collaborative learning through Facebook improves the students' academic performance. Additionally, there are other related studies (Ainin et al., 2015; Al-rahmi et al., 2015) carried out which provided evidence that collaborative learning through Facebook had a positive impact on students' academic performance, indicating that the majority of them displayed a positive outcome in their courses, where there is an increase in collaborating and exchanging of information through social media in contrast to face-to-face circumstances. However, although social media can potentially enhance student's academic performance, it has not made significant made its way to be incorporated into classrooms as part of a teaching method (Chugh & Ruhi, 2017).

To conclude, social media such as Facebook can be incorporated as an educational tool to produce an effective collaborative learning environment for educators and students to engage. Social media can significantly affect the academic performance of students but with the presence of collaborative learning, the use of social media can have a greater significance towards the outcome of student's experience. Thus, educational institutions must integrate the use of social media so that they have a positive impact towards students' academic performance (Al-rahmi & Othman, 2015). Based on the results, it is recommended to encourage higher educational institutions to use social media such as Facebook as part of their teaching methods. Educators and students should take advantage of the nature that social media has to offer, in order to strengthen collaboration and engagement during the process of educating and learning. In spite of that, it is crucial to first examine how educators and students utilize this technology and get a deeper understanding on the nature of social media so that it can be used at maximum capacity to enhance students' academic performance.

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