

The Use of Facebook in Educational Communication Among University Students: Determinants and Academic Achievement

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Abstract

This study determines the factors and impact of Facebook usage in educational communication among university students in Karachi. This research is based on a cross-sectional survey methodology. Data was collected by using a tailored-made questionnaire, which will be administered to Facebook users from four universities. PLS-SEM will be applied to test the research model and stringently test the embedded hypotheses. The findings indicate that subjective norms and purposive value significantly influence the adoption of Facebook for educational communication. Furthermore, it was found that there is a positive relationship between the use of Facebook for educational purposes and perceived academic achievements among a heterogeneous student body. These findings underline the fact that social media networking can offer good opportunities to improve university students' academic engagement and performance.

Keywords: *Academic achievement, educational communication, gratification, Facebook, social influence, social presence*

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Introduction

Social networking sites (SNS) has hugely influenced the ways in which people communicate, collaborate, and consume information in this digital era. Amongst such SNS sites, Facebook is believed to be one of the most influential social networking mediums, as the count of its users has already crossed two billion active users across the globe. Due to its user-friendly interface and a wide range of functionalities, the site finds places in the uses of many, from social communication to entertainment and even education. Integration of Facebook into the educational setting is an opportunity for enhancing learning experiences in terms of communication, collaboration, and sharing of resources among students and educators. Social networking websites evolved from a simple communication tool into a sophisticated platform supporting a range of educational activities. More specifically, they offer features for forming student study groups, creating opportunities for discussion, sharing academic resources, and providing feedback from peers and instructors. These platforms can also support asynchronous learning, whereby students are given the freedom to access educational content and make discourse at their own will. This caters to diverse learning styles and scheduling constraints. Application of SNS in education not only applies to formal learning environments but also extends to informal learning, where students can go further and learn.

Karachi is the largest city of Pakistan and is also considered one of the significant educational hubs. The university-going student body is vivid, dynamic, and full of diversity. On-campus universities in Karachi attract students across different socio-economic backgrounds, cultures, and diverse educational experiences. This diversity is an opportunity and challenge while harnessing the power of social media for educational purposes. An understanding on the usage of Facebook for educational communication by university students in Karachi becomes very critical to meet specific needs and preferences of this student cohort. Although the use of Facebook is very prevalent among university students, there is a literature gap with respect to exploring its determinants for use in educational communication and its relationship with academic achievement in the context of Karachi's higher education institutions. Past literature focuses on general patterns of usage of social media, whereas little emphasis has been put on exploring the factors which determine educational communication on Facebook and its possible academic benefits. It's this kind of knowledge gap that perpetuates educators' and policymakers' inability to exploit effectively the educational potential residing within social media platforms. The

findings of this study are likely to have major implications for educators, policy framers, and academic institutions. The research provides insight into key determinants of Facebook use for educational communication and its impact on academic achievement, which could be very instrumental in helping strategies targeted at effectively incorporating social media into educational practices. These insights could also help educators in designing interventions leveraging features of Facebook to support student learning and engagement. Moreover, findings can be used by policymakers at all administrative levels in coming up with guidelines or even policy that would foster positive usage of social media in higher education.

The objectives of the study were to:

1. Identify determinants for the use of Facebook for purposes of educational communication among university students.
2. Assess the influence of using Facebook for academic communication on perceived academic achievement.

Students make use of Facebook for educational communication purposes with peers. Based on different constructs, the following hypotheses were established to cover the research objectives:

First of all, purposeful value, in the context of this study, refers to the extent to which individuals find value in using Facebook for specific purposes, particularly for educational communication. When individuals perceive meaningful and instrumental value in utilizing Facebook for educational communication, it will have a positive impact on their engagement in such activities. To elaborate, purposeful value encompasses the idea that individuals see Facebook as a valuable tool for fulfilling important needs related to their educational pursuits. This might include seeking information, collaborating with peers, or solving academic problems. If users find that Facebook serves these instrumental purposes effectively, the hypothesis proposes that they are more likely to actively use it for educational communication. The positive influence of purposeful value can be explained by the notion that individuals are motivated to use social media platforms when they perceive them as valuable tools that fulfill their specific needs. In the case of educational communication on Facebook, the hypothesis suggests that the perceived value of the platform for academic purposes will drive individuals to actively engage in sharing information, discussing class-related matters, and collaborating with their peers. Thus, first hypothesis was:

H1: Purposeful value positively influences

Self-discovery does not have a direct impact on the educational communication occurring on social media. This has also been clearly established by Cheung et al. (2009) and de Oliveira et al. (2016), who demonstrated that although self-discovery increased private engagement and satisfaction in the use of social media, it did not improve effective educational communication. These studies indicate that the factors that drive students to use social media for educational purposes are much more related to perceived usefulness and educational benefits rather than being driven by personal exploration. However, Cheung et al. (2011) and Ellison et al. (2007) commented that although self-disclosure per se does not have any impact on educational communication, it can still help in building a wider sense of comfort and familiarity with the platform, thus indirectly supporting educational activities. These findings all jointly signal that self-discovery enriches the overall social media experience but has no direct influence on using social media for educational communication. Next hypothesis was:

H2: Self-discovery does not directly impact educational communication

This way, maintenance of interpersonal connectivity will positively affect educational communication on social media. Cheung et al. (2009) and de Oliveira et al. (2016) were able to prove that strong interpersonal bonds and social interaction significantly enhance the quality of educational communication. Their research revealed that as students continued to maintain strong social networks through platforms like Facebook, they tended to engage more in meaningful academic discussions, sharing educational resources, and sometimes working on projects together. This connectivity supports a friendly learning environment, whereby it is easy to share ideas and offer peer feedback. However, Cheung et al. (2011) and Ellison et al. (2007) also note that although preserving interpersonal connectivity is valuable, it is actually the quality and relevance of the connections which serve to most efficiently influence educational communication. The results have been interpreted as showing that what is important is not the size of a person's network but the number of connections involved in relevant academic or educational activities. Accordingly, the retention of meaningful and relevant interpersonal relationships on social media has positive effects on educational communication, which enables exchange and collaborative learning. Therefore, the third hypothesis is stated as follows:

H3: Maintaining interpersonal connectivity positively influences educational communication

Social enhancement, or the improvement of social networks by means of social media, generally exerts a positive effect on educational communication. Pai and Arnott (2013) established that enhancing social relations leads to a heightened level of engagement and cooperation in educational activities. Contrarily, Cheung et al. (2011) and de Oliveira et al. (2016) have proposed discrepant views that although social enhancement may have some advantage in educational experience, it does not influence communication in a consistent manner; rather, it depends on variables like interaction quality or other situational factors. Cheung et al. (2009) have also commented that there are varying benefits from social enhancement; therefore, its impact on educational communication cannot be stated in simple terms. Thus, the fourth hypothesis can be articulated as follows:

H4: Social enhancement positively influences educational communication

It is easy to tell how the entertainment value, otherwise called enjoyment from using social media, can contribute to a poor academic performance. Cheung and Lee established that time used on social media for entertainment purposes often eats into the time for academics to the end result of poor performance. Similarly, Cheung et al. (2011) and de Oliveira et al. (2016) found out that spending too much time in entertaining activities on social media diverts the students' attention away from their educational targets and decreases academic achievement. However, Valenzuela et al. (2009) noted that even if entertainment value might interfere with serious academic communication, it mostly affects students when the principal objective of their using social media is for the sake of fun rather than for educational or intentional content. Consequently, while entertainment value may often adversely affect the academic outcome, the impact is sharper when it overshadows the main purpose of using social media for educational purposes. Therefore, the study suggests the following hypothesis:

H5: Entertainment value negatively affects academic achievement

Perceived social pressures and expectations by peers and society operationalized as subjective norms also bear positively on educational communication. According to Baker and White, if students perceive that their peers value and expect the use of social media for educational

purposes, then they are more likely to use it. This social pressure instigates the feeling in students to press on with academic communication on a site such as Facebook. However, Oliveira et al. (2016) and Cheung and Lee (2010) indicate that even though subjective norms strongly predict the usage and engagement of Facebook, it does not necessarily locate such influence within an educational setting. That is, studies suggest that subjective norms typically trigger higher uses and engagement of social media use in general, usually facilitating both academic and nonacademic activities. Therefore, the effects of subjective norms on educational communication are positive since they raise the level of engagement with social media for academic purposes.

H6: Subjective norms positively influence educational communication

Social presence, or a feeling of being in touch with others in a virtual environment, has a positive effect on educational communication. Lee et al. (2009) and Cheung et al. (2011) exposed that a high level of social presence in social media platforms strengthens student involvement and engagement in activities related to their learning process, hence making the process of communication more effective and collaborative. Moreover, Xu et al. (2012) state that high social presence results in good academic discussion and support from fellow students. However, de Oliveira et al. (2016) appear to go against the former ideas by arguing that while it is true that social presence may enhance educational communication, it is how this aspect of presence goes well with the academic objectives pursued in the course and the quality of such interaction. It can, therefore, be said that while social presence mainly supports educational communication, there are some factors in the context which may well affect its impact. Consequently, this confidence is expected to influence the use of Facebook for educational communication, leading to the following hypothesis:

H7: Social Presence Positively Influences Educational Communication.

Educational communication positively impacts perceived academic achievement. Junco (2012) establishes that effective communication through social media enhances students' academic performance by facilitating collaboration, information sharing, and engaging with educational content. Similarly, Kirschner and Karpinski (2010) show that students who reported active participation in educational communication online indicated better academic outcomes due to improved access to resources and help from fellow students. These studies plainly show that

if there is an educational discussion and sharing of thoughts over social media, then one may feel like he or she is doing more at school.

H8: Educational Communication Positively Influences Perceived Academic Achievement

Standard use of Facebook, where academic and non-academic activities are not separated, cannot estimate accurately its effects on relevant perceived academic achievement – which should be enhanced if, during the learning process, learners use Facebook mainly for educational communication (Ross et al., 2009; Wu et al., 2018). For instance, allowing instant messaging for academic purposes will assist students in getting much-needed information from classmates about class-related issues at a very low cost of interaction.

METHOD

In our research, we have used an adopted survey questionnaire of Goh et al. (2018). We distributed the questionnaires to four universities in Karachi:

- Federal Urdu University of Science and Arts Technology
- Karachi University
- Iqra University
- Sindh Madressa tul Islam Karachi.

The questionnaires then get dispersed at several places like libraries, cafeterias, and outside the lecture halls by contact persons. The contact persons at different locations made sure that all the respondents were active users of Facebook. Out of the 320 distributed questionnaires, 100 were incomplete or not returned. We thus collected 232 valid responses. Under these circumstances, we will analyze the data using Partial Least Squares Structural Equation Modeling because it is a multivariate technique that evaluates several variables simultaneously in an integrated model. (Hair et al., 2016).

Table 1
Demographic Details of Sample

Measure	Item	Frequency	percentage
Gender	Male	96	41.1
	Female	136	58.6
Age	18 to 22	126	54.4
	23 to 27	74	31.9

	28 to 32	12	5.2
	33 to 37	19	8.2
University	FUAST	49	21
	KU	51	22
	IU	78	33.6
Department	Social Science	138	59.5
	Natural Science	94	40

The above table shows that the sample in terms of gender, with 58.6% of respondents being female and 41.1% being male. The majority of respondents are in the age group of 18 to 22 (54.4%), followed by the 23 to 27 age group (31.9%). Relatively few respondents fall into the older age groups, with 5.2% in the 28 to 32 range and 8.2% in the 33 to 37 range. The largest group of respondents comes from the IU university (33.6%), followed closely by KU (22%) and FUAST (21%). The majority of respondents are from the Social Science department (59.5%), with the Natural Science department representing the remaining 40%.

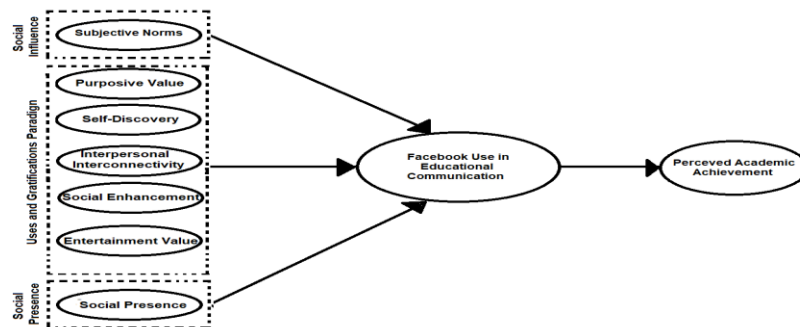


Figure 1 Research Model

Note: Adapted from Goh, C.F et al.(2018)

Results

The results of the study were presented below:

Table 2
Factor Loadings of Each Item and Construct

Construct	Item	Factor Loadings
Perceived academic achievement (PAC) CR= 0.72, CA=0.61,	AP1: I am confident I have adequate academic skills and abilities	0.80

AVE=0.65	AP3: I have learnt how to do my coursework in an efficient manner	0.78
Entertainment value (EV) CR=0.70, CA=0.51, AVE=0.70	EV2: to play	0.88
	EV4: To pass time when bored	0.82
Maintaining interpersonal Interconnectivity (MII) CR=0.89, CA=0.89, AVE=0.58	MII1: to have something to do with others	0.68
	MII2: to stay in touch	0.82
Purposive value (PV) CR=0.91, CA=0.84, AVE=0.51	PV2: to learn how to do things	0.77
	PV7: to get someone to do something for	0.63
Self-discovery (SD) CR=0.94, CA=0.87, AVE=0.88	SD1: to learn about myself and others	0.93
	SD2: to gain insight into myself	0.94
Social enhancement (SE) CR=0.94, CA=0.88, AVE=0.89	SE1: to impress	0.94
	SE2: to feel important	0.95
Subjective norms (SN) CR=0.92, CA=0.83, AVE=0.68	SN1: my group of fellow students use Facebook	0.62
	SN2: my group of fellow students who are important to me think that I should use Facebook	0.88
Social presence (SP) CR=0.78, CA=0.52, AVE=0.62	SP4: there is a sense of human warmth in Facebook	0.89
	SP5: there is a sense of human sensitivity in Facebook	0.51
Facebook use in Educational Communication (Educational Com) CR=0.82, CA=0.80, AVE=0.52	Educational Com1: Facebook has become one of my communication tools to connect with my group of fellow students in a class about class-related items	0.89
	Educational Com2: I use Facebook to communicate with my group of Fellow students in a class about class-related items	0.54

The above table shows that

- *Perceived Academic Achievement (PAC)* represents the perception of academic skills and abilities. Two items are associated with it, AP1 and AP3, with factor loadings of 0.80 and 0.78, respectively. Both items (AP1 and AP3) show moderate factor loadings, indicating a reasonable association. While composite reliability (CR) is acceptable at 0.72, the average variance extracted (AVE) of 0.65 suggests good convergent validity.
- *Entertainment Value (EV)* reflects the entertainment aspects of Facebook use. Two items, EV2 and EV4, are linked to it, with factor loadings of 0.88 and 0.82, respectively. The construct demonstrates acceptable reliability (CR = 0.70) and strong convergent validity (AVE = 0.70).
- *Maintaining Interpersonal Interconnectivity (MII)* relates to maintaining connections with others through Facebook. Two items, MII1 and MII2, have factor loadings of 0.68 and 0.82, respectively. The construct exhibits high reliability (CR = 0.89) but a comparatively lower AVE (0.58).
- *Purposive Value (PV)* represents using Facebook for specific purposes. Two items, PV2 and PV7, are associated with it, with factor loadings of 0.77 and 0.63, respectively. The construct demonstrates excellent reliability (CR = 0.91) but a relatively lower AVE (0.51).
- *Self-Discovery (SD)* relates to using Facebook for self-exploration and gaining insights. Two items, SD1 and SD2, have high factor loadings of 0.93 and 0.94, respectively. Both reliability (CR = 0.94) and convergent validity (AVE = 0.88) are notably strong.
- *Social Enhancement (SE)* pertains to using Facebook to enhance social status. Two items, SE1 and SE2, have high factor loadings of 0.94 and 0.95, respectively. The construct exhibits robust reliability (CR = 0.94) and strong convergent validity (AVE = 0.89).
- *Subjective Norms (SN)* reflects the influence of fellow students on Facebook use. Two items, SN1 and SN2, have factor loadings, display moderate to high factor loadings (0.62 and 0.88). While reliability is good (CR = 0.92), the AVE is not provided, making convergent validity assessment challenging.
- *Social Presence (SP)* represents the sense of human warmth and sensitivity on Facebook. Two items, SP4 and SP5, have factor loadings of 0.89 and 0.51, respectively. CR is 0.78, and AVE is 0.62. SP shows one lower factor loading (0.51) alongside a higher one

(0.89). While reliability (CR = 0.78) is acceptable, the AVE (0.62) indicates moderate convergent validity.

- *Facebook Use in Educational Communication (Educational Com)* relates to using Facebook for educational communication. Two items, Educational Com1 and Educational Com2, have factor loadings of 0.89 and 0.54, respectively. The construct demonstrates acceptable reliability (CR = 0.82) and moderate convergent validity (AVE = 0.52).

In this table, we can see factor loadings indicating the strength of each item's relationship to its respective construct.

The limitations of this study are that it had been focused only on those respondents who used Facebook outside of the college lecture halls; therefore, it cannot be generalized to the entire student population. We did not also check whether the respondents were actively using Facebook for educational communication. Subjects in specialized fields, such as chemistry and clinical sequences, usually require extensive instructional support. This could mean that future studies will need to consider the examination of various academic disciplines in order to arrive at a better understanding of how SNS pedagogical use is utilized. In addition, since this is a cross-sectional study, no temporal relationship can be established between the educational communication and academic achievement variables. For this reason, future research needs to also take into consideration longitudinal and experimental designs in testing the validity of such relationships. Further, the study's dependence on general measures of academic success calls for more research using specific metrics, for example, on GPA. With these interesting findings on educational communication, further research may be conducted to explore how Facebook can be used to enhance the e-learning management system in a higher education set-up.

Discussion

The results indicate that self-discovery contributes very insignificantly to education-related communication. This is similar to previous studies indicating its general minimal contribution to user usage of Facebook or its contribution towards academic activities between users (Cheung et al., 2011). This therefore implies that users who are self-discovery-oriented less often tend to make use of Facebook for educational-related discussion and as such, do not incorporate self-trends into their education-related communication and progress. These results

cast a cautionary note for students who are reluctant users of Facebook for out-of-class and academic purposes. In general, the purposive users of Facebook in educational communication will be targeting personal benefits by mixing learning with enjoyment. Furthermore, explanations of educational communication depend very little on factors such as keeping people interconnected at an interpersonal level and social betterment. As such, students may see no need for said elements in the academic setting and may regard Facebook more as an all-purpose space rather than one specifically linked to academia (Smock et al., 2011).

Subjective norms, however, are closely associated with educational communication. This reveals the following: students act according to social pressures and expectations within their behavior on Facebook. They seek positive feedback to balance potential criticism and hereby act in compliance with peer influence. This was also proven by de Oliveira et al. (2016), showing that relevant social circles impact the engagement on Facebook. Fokit mirrors prevalent subjective norms. The study also finds that social presence is not a significant factor in educational communication. Although social presence, or "the experience of being with another in human-human and human-computer interactions" (Biocca et al., 2003), has been shown to affect Facebook usage intention, students do not use Facebook for academic purposes even when it has high social presence. The study also finds a positive interlink between educational communication and academic achievement, hence bringing an insight different from the general research on the role of Facebook in educational success. Kirschner and Karpinski in 2010, Junco in 2012a, and Michikyan et al. in 2015 reported that using Facebook for academic communication explains the variation of academic performance better than using it generally.

Conclusion, Implications and Recommendations

The study was aimed at finding out why students use Facebook for educational communication and whether such communication had any relationship with their academic achievement. Social media influence on social presence, together with gratification theories, explained the key factors that have an effect on educational communication. Both the purposeful value and subjective norms were found to have a positive effect on educational communication, with the latter also explaining perceived academic success among students. In general, it is deduced that students are aware of the fact that Facebook can be an effective tool in supporting their learning process. Among other factors, the research identifies the use of social media, especially Facebook, to be key to educational communication. It increases understanding of how social networking sites usage is related to educational outcomes and behavior. This study offers new insight into how Facebook practices could advance academic communication beyond common SNS usage patterns by bringing together previous studies on SNS. It, therefore, highlights the importance of subjective norms in their critical social influence to motivate students to use Facebook for academic purposes. Secondly, the purposeful value has a positive effect on educational communication, thus indicating that students appreciate the educational value of Facebook. It also acknowledges the support from the faculty and administrators, which makes it convenient for the students to use Facebook to discuss and communicate about academic matters. On the bases of this, it hypothesizes that, although students have the concern for privacy, hence lacking interest in friending instructors on Facebook, the creation of safe Facebook groups for learning will increase the feelings of safety among the students. With this approach, learning outcomes can be improved just by the effective exchange of knowledge and information between students and educators through effective means such as Facebook (Wang et al., 2012).

Based on the findings of the research, the following recommendations are suggested for educators, institutions, and policymakers:

- Recognize and embrace the role of social media, particularly Facebook, as a tool for educational communication. Develop strategies to integrate social media platforms into the educational process to enhance student engagement and communication.
- Encourage students to use Facebook purposefully for educational communication. Create awareness about the potential benefits of leveraging social media for academic collaboration and discussion.

- Implement training programs for educators to effectively utilize Facebook as an educational communication tool. Educators should be equipped with the skills to engage students on social media platforms while maintaining a professional and educational environment.
- Establish clear guidelines and best practices regarding privacy and security when using Facebook for educational communication. Address concerns related to data privacy and ensure that students feel comfortable participating in academic discussions online.
- Explore and diversify the platforms used for educational communication. While Facebook may be popular, consider incorporating other platforms that may better suit specific educational objectives and preferences.
- Conduct regular assessments and seek feedback from students regarding the effectiveness of using Facebook for educational communication. This iterative feedback loop can help refine strategies and address emerging challenges.
- Provide institutional support for the integration of social media into the educational environment. This includes recognizing the importance of social media in fostering collaboration and communication among students.
- Acknowledge and address potential cross-cultural differences in the use of social media for educational purposes. Tailor communication strategies to accommodate diverse cultural perspectives on technology use.
- Conduct longitudinal studies to monitor the long-term academic impact of using Facebook for educational communication. This will provide a deeper understanding of sustained benefits and potential challenges over an extended period.
- Collaborate with experts in educational technology to stay updated on emerging trends and best practices. This collaboration can help institutions adapt to evolving technologies and optimize the educational value of social media platforms.
- Foster the creation of educational communities within social media platforms. Encourage students to form groups or communities dedicated to academic discussions, collaborative projects, and knowledge sharing.

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