*FEATURE*

# Facebook Addiction and Academic Anxiety among University Students

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**Abstract.** *Within academics, social media has developed a stronger and stronger presence in the lives of students and educators. The purpose of this study was to examine the relationship between Facebook addiction and academic anxiety. A cross-sectional descriptive correlational study using Likert scales was used with a sample of 148. Descriptive results indicated that participants were neutral toward statements about academic anxiety while disagreeing with statements about Facebook addiction. The multiple regression analysis found a positive relationship between Facebook addiction and academic anxiety while controlling for gender, class level, major, program, credits, club participation, and GPA. Club participation, class level, and program were found to also have a significant relationship with academic anxiety. The final model explained 32% of the variance of academic anxiety.*

**Keywords:** Facebook addiction, academic anxiety, Thailand, university students, Southeast Asia, regression

## Introduction

Social media addiction, particular Facebook addiction, has become a significant problem among young adults. Within the context of South Asia, one study found that 40% of students were at risk of Facebook addiction (Mamun & Griffiths, 2018). In Southeast Asia, among Malaysian undergraduate and graduate students, about 47% show signs of Facebook addiction (Jafarkarimi et al., 2016). Lastly, a study in Thailand found that about 42% of students were addicted to Facebook (Khumsri, Yingyeun, Manwong, Hanprathet, & Phanasathit, 2015).

One of the major effects of an addiction is psychological. For example, emotional issues such as anxiety are often associated with addiction (Backović,

Živojinović, Maksimović, & Maksimović, 2012). At the university level, almost 50% of students who request help for mental health challenges state anxiety as the source of their trouble (LeViness, Bershad, & Gorman, 2017). Among nursing students in particular, 30% suffered from test anxiety (Shapiro, 2014). In addition, college students experience higher test anxiety when compared to high school students (Dan, Ilan, & Kurman, 2014).

Addiction is the motivation to engage in a behavior in an intemperate manner until it becomes detrimental psychological, physical, and or both (Andreassen, Torsheim, Brunborg, & Pallesen, 2012). Studies have examined Facebook addiction and its role in academic performance (Glass, Li, & Pan, 2014; Gupta & Irwin, 2016). In addition, academic anxiety has also been closely examined in the context of academic performance, especially in the area of test performance (Arens, Becker, & Möller, 2017; Khanna, 2015). Given the documented evidence that Facebook addiction is a concern at university and that anxiety in the context of an academic environment is a pressing concern at the university level, the purpose of this study is to examine the link between Facebook addiction and academic anxiety among university students. Understanding this phenomenon will provide educators and even students with observed evidence as to the extent to which Facebook addiction and academic anxiety are associated with each other and whether intervention may be necessary.

### Review of Literature

Literature on social media addiction is abundant. This study focused on literature related to Facebook addiction and academic anxiety. Below is a discussion based on the available literature in these areas.

### Facebook Addiction

Facebook addiction is defined as the overuse of Facebook until it becomes detrimental to one's psychological health, interpersonal relationships, and even performance such as academic performance (Andreassen, Torsheim, Brunborg, & Pallesen, 2012). Common symptoms of any addiction include withdrawal, conflict, and relapse (Andreassen et al., 2012; "Anxiety disorders - Symptoms and causes," 2018). It has been found that Facebook addiction, like other technology addiction, shares the same neural features as drug and gambling addictions (Turel, 2015).

The psychological impact of Facebook is well documented. Facebook addicts often experience negative emotions, such as anxiety, and feel consistent pressure to access the site frequently (Fox & Moreland, 2015). In addition, Facebook users often have lower self-esteem and life satisfaction (Błachnio, Przepiorka, & Pantic, 2016; Satici, 2018). Furthermore, Facebook addicts often exhibit lower self-worth and happiness (Kanat-Maymon, Almog, Cohen, & Amichai-Hamburger, 2018;

Satici & Uysal, 2015). The lower self-worth may be the reason why people seek constant reinforcement and affirmation from spending time on Facebook.

Relationships are also impacted by Facebook addiction. For example, it was found that social support people believe they receive through Facebook actually is positively correlated with depression (Park et al., 2016). This means that the more social support an individual receives through Facebook the more depressed they potentially could be. In general, the stronger online interpersonal relationships are the stronger the Facebook addiction is likely to be (J.-H. Tang, Chen, Yang, Chung, & Lee, 2016). This is supported by the fact that the more friends a person has online the more time that is spent online, which can be an indicator of addiction (Pornsakulvanich, 2018).

Several personality factors indicate risk for Facebook addiction. The age of the user is a predictor of Facebook addiction (Przepiorka & Blachnio, 2016). Self-monitoring and openness to new experiences are traits that are predictors of Facebook addiction as well (Błachnio & Przepiorka, 2016; Pornsakulvanich, 2018). Being single, showing a lack of interest in physical activities, and suffering from sleep issues are also generally predictors of Facebook addiction (Mamun & Griffiths, 2018). Lastly, gender may be indirectly associated with Facebook addiction as females are more likely to take selfies, which they then share online through social media sites such as Facebook (Dhir, Pallesen, Torsheim, & Andreassen, 2016).

Facebook addiction has also been linked with academic performance. Facebook use has been found to affect the ability to comprehend lectures (Gupta & Irwin, 2016). Students who spend an excessive amount of time on social media frequently have lower academic performance (Glass et al., 2014). However, the controlled use of Facebook in an educational setting can improve performance (Ainin, Naqshbandi, Moghavvemi, & Jaafar, 2015; González, Gasco, & Llopis, 2016). This indicates that it is the use of the tool and not so much the tool itself that is the problem concerning Facebook addiction. In other words, Facebook may not be the problem per se; rather, people's intemperate use of Facebook is what the concern is.

Several studies have been conducted in Asia concerning Facebook addiction. In China, it has been found that perceptions of self-inferiority, low agreeableness, and lower academic performance are all indicators of Facebook addiction (Glass et al., 2014; Hong, Huang, Lin, & Chiu, 2014). In Southeast Asia, studies done in Malaysia and Singapore have found high rates of Facebook addition among college students (Jafarkarimi et al., 2016; C. S. Tang & Koh, 2017). In Thailand, Facebook addiction has been linked with mental health problems, depression, social dysfunction, and insomnia (Hanprathet, Manwong, Khumsri, Yingyeun, & Phanasathit, 2015). The rate of Facebook addiction in Thailand is also higher than what is found in other countries (Khumsri et al., 2015). Lastly, another study conducted in Thailand found that individuals addicted to social media had lower

mindfulness, which led to higher rates of emotional exhaustion when dealing with stress (Sriwilai & Charoensukmongkol, 2016).

Facebook addiction appears to be a phenomenon that can have a physical, psychological, and social influence on individuals (Andreassen et al., 2012; Satici, 2018). This phenomenon is documented in both the East and the West (Glass et al., 2014; Jafarkarimi et al., 2016). This further indicates that people who struggle to control their Facebook use may experience other problems associated with heavy and intemperate use. For educators, this may be an alarm bell due to the concerns that addiction can have with the academic success of students (Gupta & Irwin, 2016).

### Academic Anxiety

Anxiety is a feeling of nervousness, restless, inability to concentrate, and or a sense of impending danger ("Anxiety disorders-Symptoms and causes," 2018). Physical signs of anxiety include sweating, trembling, sleep troubles, and even rapid breathing ("Anxiety disorders-Symptoms and causes," 2018). Academic anxiety is the experience of anxiety from academic pressures (Backović et al., 2012).

Common concepts that are correlated with academic stress include fear of looking bad in terms of academic performance, conflict with teachers, and cellphone addiction (Ho, 2016; Lepp, Barkley, & Karpinski, 2014; Qashoa, 2014; Thomas, 2016). Stress from academics has been found to be one of the strongest predictors of anxiety (Jones, Park, & Lefevor, 2018). Academic anxiety is frequently but not exclusively divided into tests and writing anxiety.

In terms of test anxiety, intrinsic motivation is negatively correlated with test anxiety (Cheng et al., 2014; Khalaila, 2015). Students with ADHD are also more likely to experience test anxiety due in part to their inability to concentrate for extended periods (Dan & Raz, 2015). Low achieving students also experience more test anxiety than do high achieving students (Sung, Chao, & Tseng, 2016). Family pressure to succeed academically can also lead to test anxiety, which can be a concern in an Asian context in which excellent academic performance is expected (Brandmo, Bråten, & Schewe, 2018; Peleg, Deutch, & Dan, 2016). Lastly, the context of examinations also makes a difference as it has been found that ungraded quizzes do not affect test anxiety but rather contribute to students feeling positive about how well they did (Khanna, 2015).

Writing anxiety is found at all levels of university education but doctoral students had higher writing self-efficacy than master students (Ho, 2016). Writing test (written exams) in particular contribute to writing anxiety (Qashoa, 2014). Students who are learning to write in a foreign language also show writing anxiety in foreign language (Huerta, Goodson, Beigi, & Chlup, 2017; Jee, 2016). Culture can also influence writing anxiety as communication styles vary with some cultures

being more direct in their communication compared to others (Jee, 2016). Among ESL students, worries over time constraints and the fear of receiving negative feedback also contribute to writing anxiety (Ho, 2016).

Gender has been found to be a major predictor of test anxiety (Arens et al., 2017; Putwain, Sander, & Larkin, 2013). For example, a study found that lower test anxiety predicted a higher GPA in girls but not in boys (Rahafar, Maghsudloo, Farhangnia, Vollmer, & Randler, 2016). Female students also self-report higher rates of test anxiety than males (Putwain et al., 2013). However, the results are not conclusive. For example, Sung et al. (2016) found no difference between boys' and girls' test anxiety. Another study found that boys experience more writing anxiety when compared to girls (Jebreil, Azizifar, & Gowhary, 2015).

In terms of studies conducted in Asia, research in Taiwan found that a lack of writing skills in English could contribute to writing anxiety for ESL students (Ho, 2016). A second study in Taiwan found that students' past performance could be an indicator of their test anxiety (Sung et al., 2016). In Thailand, a negative appraisal can contribute to anxiety (Wangsiriwech, Pisitsungkagarn, & Jarukasemthawee, 2017). It was also found in Thailand that cellphone addiction is positively linked with academic stress, which is a precursor to academic anxiety (Thomas, 2016).

Academic anxiety is a phenomenon commonly experienced by students. Exams are a common component when considering academic anxiety (Qashoa, 2014). However, addiction has been negatively correlated with academic performance, which implies that addiction may be associated with anxiety, possibly as well (Gupta & Irwin, 2016). This study is focused primarily on Facebook addiction and its possible association with academic anxiety.

Based on this review of literature, the following research questions have been developed.

1.   What are the perceptions of Facebook addiction and academic anxiety among university students in the sample?

2.   What is the relationship between Facebook addiction and academic anxiety when controlling for the gender, class level, program, GPA, major, club status, academic status, and number of credits?

## Methodology

This study examined participants' perceptions of academic anxiety and Facebook addiction through the use of a survey. In addition, the relationship between academic anxiety and Facebook addiction is assessed using standard statistical tools.

**Research Setting and Sampling**

The context of this study was an international university located in Thailand. The sample was drawn using stratified sampling based on gender, which entails ensuring that the participants were university students and that the proportion of male and female students in the sample matched the proportions found at the university. The sample size of this study was 148. Within the sample, 49% were male, while 51% female. In terms of program, 85% were from the international program (English speaking program), while 15% were from the Thai-English program. For major, 33% were Business majors, 27% were education, 23% English, 14% Information Technology, and 3% were religious study majors. When grouping the sample by academic status, 33% were freshmen, 31% were Sophomore, 23% were Juniors, and 12% were Seniors. Among participants, 70% belong to an on-campus extra-curricular club compared with 30% who did not and 32% of participants had a GPA above 3.5 while 68% did not.

**Research Design and Data Collection**

This study utilized a cross-sectional survey design with the addition of correlational analysis. The surveys were distributed and collected by the researcher. The survey instrument had two sections. Section 1 address the demographic variables of the study. The demographic variables in section 1 included gender, class level, academic status, club participation, major, and number of credits enrolled. Section 2 consisted of 48 Likert-type statements that measured students' perception of Facebook addiction and academic anxiety, A five-point scale was used with 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neutral*, 4 = *Agree*, 5 = *Strongly Agree*.

**Facebook addiction.** The Facebook Addiction scale was adopted from Andreassen et al. (2012). This scale assessed a participant's level of addiction to the use of Facebook. Sub constructs measured in this scale include salience, tolerance, relapse, withdrawals, mood modification, and conflict. Sample items from this scale are "I Become restless or troubled if I have been prohibited from using Facebook?" and "I feel an urge to use Facebook more and more?" The Cronbach Alpha for this 18-item scale was 0.95.

**Academic anxiety.** The academic anxiety scale was adopted from Pizzie and Kraemer (2018). This scale assessed a participant's perception of their experience with academic anxiety. Sub constructs measured in this scale include writing, test, and trait anxiety. Sample items from this scale are "I like seeing my thoughts typed on-screen or written on paper," "Sometimes I feel completely worthless," and "I feel anxious having a test returned." The Cronbach Alpha for this 30-item scale was 0.83.

## Data Analysis

Descriptive statistics were calculated in this study. The means, standard deviations, and 95% confidence interval for the variables and the individual survey items was calculated. Pearson correlation was employed to assess the relationship between Facebook addiction and academic anxiety. Finally, multiple regression was used to determine the link between Facebook addiction and academic anxiety with the additional variables of gender, class level, club participation, academic status, and number of credits enrolled serving primarily as control variables. Control variables were determined by the potential influence they may have on the dependent variable. The relationship of the control variables with the dependent variable is not of primary interest but serve to better understand the relationship between Facebook addiction and academic anxiety.

## Ethical Considerations

Permission was obtained through the participating university by soliciting the IRB of the said institution. Surveys were anonymous and the raw data was stored in a way to protect privacy. All participants were provided with informed consent as required by the IRB.

## Results

Research question one examined Facebook addiction and academic anxiety in terms of descriptive statistics. Table 1 provides a summary of the descriptive statistics for each continuous variable in this study. For academic anxiety, the respondents indicated a neutral perception of academic anxiety ($M = 3.03$, $SD = 0.40$, 95%CI[2.95,3.10]). For example, respondents indicated that they agree mildly that "[they] are anxious while waiting to see [their] letter grade on a test" ($M = 3.47$, $SD = 1.04$, 95%CI[3.27, 3.66]). However, respondent did disagree that "discussing [their] writing with others is enjoyable" ($M = 2.64$, $SD = 0.91$, 95%CI[2.48, 2.80]).

For Facebook addiction, the respondents disagreed with the statements that indicated symptoms of addiction ($M = 2.39$, $SD = 0.81$, 95%CI[2.24, 2.55]). For example, the respondents disagreed that "[they] ignore family members and or friends because of Facebook" ($M = 2.18$, $SD = 1.17$, 95%CI[1.78, 2.18]). In addition, respondents also disagreed that "[they] become irritable if [they] [are] not allowed to use Facebook" ($M = 2.30$, $SD = 1.05$, 95%CI[1.97, 2.36]).

Table 1

*Means, Standard Deviations, and Correlations*
*With Confidence Intervals*

| Variable | *M* | *SD* | 1 | 2 |
|---|---|---|---|---|
| 1. Anxiety | 3.02 | 0.40 | | |
| 2. Facebook | 2.45 | 0.81 | .25** [.10, .40] | |
| 3. credits | 15.52 | 1.99 | .21* [.03, .37] | .09 [-.08, .26] |

*Note. M* and *SD* are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). * indicates $p < .05$. ** indicates $p < .01$.

Research question two explored the statistical association between the variables of this study. The bi-variate relationship among the three continuous variables are weak as shown in table 1. However, the results of the multiple regression analysis indicate that Facebook addiction, major, gender, program, credits, class, GPA, and club participation explain 32% of the variance of academic anxiety ($r^2 = 0.32$. $F(13, 100) = 13.35$, $p < 0.001$, 95%CI[0.09, 0.37]). Facebook addiction ($\beta = 0.17$, $p < 0.001$) was found to have a significant relationship with Academic anxiety when controlling for gender, major, program, credits, class, and club status. The categorical variables of major (religion $\beta = -0.50$, $p < 0.05$), Program (Thai $\beta = -0.31$, $p < 0.05$), class (Senior $\beta = 0.35$, $p < 0.05$), and club participation (Yes $\beta = -0.14$ $p < 0.10$) were also found to be significant with academic anxiety. Lastly, gender (Male $\beta = -0.01$, $p = 0.92$), credits ($\beta = 0.01$, $p = 0.50$), and GPA (Yes $\beta = -0.03$, $p = 0.70$) were not significantly associated with academic anxiety. Table 2 provides the results of the regression analysis.

Table 2

*Regression Results Using Academic Anxiety*
*as the Criterion*

| Predictor | *b* | *b* 95% CI [LL, UL] | $sr^2$ |
|---|---|---|---|
| (Intercept) | 2.53** | [1.95, 3.12] | |
| Facebook Addiction | 0.17** | [0.09, 0.25] | .12 |
| Gender: male | -0.01 | [-0.15, 0.14] | .00 |
| Major: education | -0.04 | [-0.21, 0.13] | .00 |
| Major: English | -0.16 | [-0.36, 0.04] | .02 |
| Major: info tech | 0.17 | [-0.06, 0.39] | .02 |
| Major: religion | -0.50* | [-0.91, -0.10] | .04 |
| Program: Thai | -0.31* | [-0.58, -0.04] | .04 |
| credits | 0.01 | [-0.02, 0.05] | .00 |
| Class: junior | 0.16 | [-0.04, 0.36] | .02 |
| Class: senior | 0.35* | [0.04, 0.66] | .04 |
| Class: sophomore | 0.00 | [-0.17, 0.17] | .00 |
| GPA: yes | -0.03 | [-0.19, 0.12] | .00 |
| Club: yes | -0.14* | [-0.30, 0.01] | .02 |
| | | $R^2$ = .315** 95% CI[.09,.37] | |

*Note.* A significant *b*-weight indicates the semi-partial correlation is also significant. *b* represents unstandardized regression weights. $sr^2$ represents the semi-partial correlation squared. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.* indicates $p < .05$. ** indicates $p < .01$.

## Discussion

The results of this study have led to the following findings. One, Facebook addiction is positively correlated with academic anxiety when controlling for the other variables of this study. This is consistent with Fox and Moreland (2015) who found a similar association between Facebook use and general anxiety. This study's contribution is that Facebook addiction is specifically correlated with academic anxiety as well. This relationship was significant even though the respondents disagreed with the statements that discussed addiction to Facebook. This means that if a student is a heavy Facebook user, they may also have anxiety over their academic progress and or the opposite may be true as well, that someone who is anxious about their academic progress may also show signs of heavy Facebook-like dependency. Due to the correlational nature of this study, it is not possible to state conclusively which direction the effect takes.

A second major finding was that students in the Thai-English program show less agreement with statements about their academic anxiety when compared to the international or English only program. This difference is probably best explained culturally. Thai students often have a relaxed attitude towards academics (Young, 2013). As such, this may be one reason why they show less agreement with experiencing academic anxiety. However, this is in contrast with the findings of Sriwilai and Charoensukmongkol (2016) that social media addiction—such as Facebook—lowers mindfulness and increases emotional exhaustion. Therefore, the findings could be explained possibly due to the respondents' denial of the impact of anxiety in their life.

A third finding is that the class level had a positive correlation with academic anxiety, indicating that senior students were more prone to academic anxiety. Given how senior students are closer to graduation and thus have a heavier load while trying to prepare for life, this seems reasonable. In a study done among medical students, it was found that freshmen students are the most depressed while senior graduating students were the most stressed (Iorga, Dondas, & Zugun-Eloae, 2018). The results of this study confirm Iorga et al. (2018) findings among medical students but now also among undergraduate students.

A fourth finding was the negative relationship between club participation and academic anxiety. Respondents in on-campus clubs had less anxiety than students who did not participate in the on-campus club. This difference may be due to the social interaction that extra-curricular activities provide. Club participation provides opportunities to develop communication skills, leadership, skills, and even creativity (Lau, Hsu, Acosta, & Hsu, 2014). The experience in the clubs can transfer over and help students to cope with academic life and anxiety in particular. In addition, club activities provide some of the affirmation and socializing that take place virtually on Facebook. Genuine relationships help students to deal with real anxiety in a way that is not possible through online platforms. This relationship between club participation and academic anxiety is another unique contribution of this study.

A fifth finding was that credits and GPA were not associated with academic anxiety. It would seem intuitive that as the number of credits increased the anxiety would increase as well since credits are a measure of how students spend time. However, that was not the case. One reason for this is that students are used to the workload, yet this is still unclear. As for GPA, whether someone has a high or low GPA does not seem to be related to academic anxiety. Therefore, it is possible that all students experience anxiety despite their academic load. A more nuanced view of credits may be necessary. For example, the type of class may have more influence than the number of credits.

## Recommendations

Based on these findings, the following recommendations are provided to schools and for further studies. First, schools may want to consider encouraging students to participate in extra-curricular clubs. The development of various employment skills, along with the social interaction, was found to be negatively associated with academic anxiety and thus may help students to deal with academic challenges. Second, schools may also want to provide additional support to senior students who are often experiencing additional stress as they draw close to graduation. The additional support can involve such tactics as providing frequent feedback so students can adjust quickly in order to assure graduating. Awaiting feedback can be viewed as stressful for most students but particularly for graduating students who have less time to make changes if they are struggling academically (Ho, 2016).

In terms of further studies, a study that identifies a cause and effect relationship between Facebook addiction and academic anxiety would provide conclusive evidence of the association between the two constructs. Furthermore, a study that more closely examines extracurricular activity and anxiety can help to determine if providing these additional experiences is truly a viable way to deal with anxiety.

## Limitations

This study employed a correlational research design. Therefore, no conclusive cause and effect relationship can be established. In addition, there was an assumption that the participants responded honestly to the survey items. Lastly, the results are limited to a setting that is similar to the one in which the study was conducted.

## Conclusion

This study explored the association between academic anxiety and Facebook addiction. A positive association was found between the two variables when controlling for gender, program, major, GPA, club participation, credits, and class level. This finding implies that Facebook addiction does not only contribute to anxiety in general but also academic anxiety in particular. Furthermore, graduating seniors have a stronger agreement with statements regarding academic anxiety while participants in clubs have less agreement with statements regarding academic anxiety.

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