



Comparison of users' adoption and use cases of facebook and their academic procrastination

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Abstract

Academic procrastination is one of the many types of postponing behaviors which almost every person demonstrates from time to time. One of the sources of academic procrastination, which can be expressed as postponing academic-based works to another time without a particular reason, is replacing the work to be done with pleasurable activities such as the internet use. The aim of this study is to compare the adoption and use cases of online social networks which are accessible via the internet and used quite intensively, and academic procrastination behaviors of Facebook users. In this context, the data acquired from 715 Facebook users were analyzed through SPSS 15 software. It was found out that people who use Facebook in accordance with their social relations have higher tendency for academic procrastination than people who use it for daily purposes, furthermore, people who use Facebook for academic purposes do not have a tendency for academic procrastination as a result of the statistical analysis conducted. Another output is that users with high level of adoption of Facebook have more tendency for academic procrastination than users with medium and low level of adoption of Facebook.

Keywords

Social networks, Facebook, academic procrastination.

I. Introduction

Postponing any responsibility without a particular reason or excuse is a kind of behavior that everyone mostly demonstrates in some parts of their lives. Even though there are various definitions regarding the behavior which is called "procrastination" in the literature, it is seen that there is no agreement among the researchers. For instance, Steel (2002) defines procrastination as "a delaying behavior despite the absence of any benefit expectation or obligatory situation" whereas Ferrari's (1991) definition regarding the term is "not doing the work until the very last moment in spite of the available time". Another definition for procrastination is "a tendency towards postponing to make decisions or do the work" (Milgram, Tal and Levinson, 1998). Notwithstanding, it is noticeable that "delaying certain things without a particular reason" stands at the intersection of all the definitions about procrastination despite the diverse descriptions of the term in the literature.

Procrastination is divided into classes according to the type and cause of the behavior delayed. Hereunder, overall procrastination, decision-making procrastination, neurotic procrastination, dysfunctional procrastination and academic procrastination can be mentioned (Ferrari, 1992). All these procrastination types have the potential to make an individual feel insufficient and desperate in terms of the ability of coping with the current environment (Milgram, Tal and Levinson, 1998). However, considering that individuals spend most of their lifetime learning, the potential in question can be attributed to academic procrastination in particular.

Academic procrastination, including the academic-based works such as preparing an exam or doing homework, is defined as postponing the works in question until having significant levels of stress (Koestner & Vallerand, 1995). Due to its potential, many studies have been carried out on the reasons, prevalence and consequences of academic procrastination which attracted the attention of researchers in the field.

One of the recent studies on the prevalence of academic procrastination has been done by Ouwuegbuzie (2004). According to Ouwuegbuzie, approximately 40% of college students demonstrate the delaying behavior when they need to prepare term papers and study for the exams. Ouwuegbuzie also stated that 60% of students delay reading exercises again in the same study.

Clark and Hill's (1994) study, a study of college students, revealed that 30% of students had a tendency to postpone academic-based works such as getting prepared for exams, organizing term papers and doing weekly reading exercises. Another study with college students was carried out by Solomun and Rothblum (1984) which showed that students had a tendency of 23% - 46% to postpone their homework, reading practices and exam preparations. In McCown and Robert's (1984) study, which was very comprehensive and conducted with 1500 participants, highly similar outcomes to Rothblum's (1984) study were acquired.

Almost every study dealing with the prevalence of academic procrastination among students reached the conclusion that the behavior in question was demonstrated intensely. This situation has given attention to the question of what academic procrastination might be associated with. In the literature reviews it was reported that the important variables academic procrastination is associated with are motivation, anxiety, sense of responsibility, perfectionism and time

management skills (Balkis, 2006). According to Schouwenburg (2004), people who show academic procrastination behavior prefer activities that offer exhilaration, instead of being busy with the work they have to do. Schouwenburg (2004) stated that the use of Internet is one of the most significant activities which takes the place of the work to be done.

Social networking sites (SNS), which have been developed with the support of new web technologies become widespread, have become mediums that quite a large portion of Internet users use effectively in recent years. Internet users can easily perform social activities such as communicating with other users, sharing content which can be in text, image, audio and video format within the competence of access determined beforehand; creating groups, communities, activities or pages; participating in the existing entities, reaching people met in the past and making new friends with perfectly designed interfaces via SNS like Facebook, Twitter or LinkedIn. Due to their functionality and convenience, SNSs have encountered a great demand. It is supposed that nearly 63% of Internet users visited a SNS in 2012. The percentage in question is 67% for the year 2013 and 70% for the year 2014 (Emarketer, 2012). In this sense, it can be said that more than 1.5 billion people will be spending time on SNSs during the next years and it will comprise a significant portion of the total Internet usage.

II. Purpose

This study aims at determining the effects of adoption and use of Facebook by students using it on their academic procrastination. For this purpose, the following questions were asked.

1. What is the academic procrastination status of students who use Facebook?
2. Does the academic procrastination status of students vary according to differences in their Facebook use cases?
3. Does the academic procrastination status of students differentiate according to their level of Facebook adoption?
4. What is the correlation between academic procrastination and sub-dimensions (social relations, academic work, and daily routines) of the Facebook use case scale?
5. What is the correlation between academic procrastination and sub-dimensions (facilitating benefit, convenience, social influence, the community ID) of the Facebook adoption scale?

III. Method

This descriptive research which aims to determine the effects of adoption and use of Facebook by students using it on their academic procrastination was designed with correlational survey model. Survey model is a research perspective of which aim is to describe cases as they used to be or exist (Karasar, 2000).

a. Participants of the Study

The research data was collected from 953 students who use a Facebook application with about fifty thousand monthly active users via a simple random sampling, however the data provided from 238

(24.9%) people who gave inconsistent responses to data collection instruments was declared invalid. The non-student users of Facebook application mentioned were outside the scope of this study. The distribution of educational levels of the students are: primary school 191 (26.7%), high school 353 (49.4%) and university 171 (23.9%). The range for students was limited to 14-25 ages to ensure the data reliability. The age distribution of the research is: 14 years (33 students - 4.6%), 15 years (57 students - 4.6%), 16 years (69 students - 4.6%), 17 years (77 students - 4.6%), 18 years (96 students - 4.6%), 19 years (66 students - 4.6%), 20 years (63 students - 4.6%), 21 years (67 students - 4.6%), 22 years (69 students - 4.6%), 23 years (47 students - 4.6%), 24 years (35 students - 4.6%) and 25 years (36 students - 4.6%).

b. Data Collection Instruments

The research data was collected using three scales in addition to a demographic form which is used for extracting information regarding age, education and marital status. Participants' purposes of using Facebook social network were determined through Facebook Use Purpose scale developed by Mazman (2009). The scale in question, which has a three-factor structure, consists of 11 Likert-type items with five options whose answers change from 'all the time' and 'no time'. The factors of the scale were defined as social relations ($\alpha=.681$), academic works ($\alpha=.813$) and daily works ($\alpha=.871$).

Another scale used in the research is Facebook Adoption Scale again developed by Mazman (2009). The scale, which consists of 22 Likert-type items with ten options ranging from 'strongly disagree' to 'totally agree', has five sub-dimensions describing the adoption of Facebook's utility ($\alpha = .838$), ease of use ($\alpha = .897$), environmental impact ($\alpha = .843$), enabling factors ($\alpha = .849$) and social identity ($\alpha = .864$).

In order to gather data on the academic procrastination status of participants, Academic Procrastination Scale, which was developed by Aitken (1982) and adapted to Turkish by Balkis (2006), was used. The scale has 16 Likert-type items with five options ranging from "it does not reflect me" to "it totally reflects me". The test-retest correlation coefficient $r = .87$ was significant at $p < .001$ level. The scale with a single-factor structure describing 38.38% of the total variance has internal consistency coefficient of .89.

c. Data Analysis

The data obtained from the scale was discussed primarily in terms of a normal distribution. For this purpose, Kolmogorov-Smirnov test was used. According to the results of One-Sample Kolmogorov-Smirnov test applied, the data obtained with the help of scale was normally distributed ($D(715) = 1.320$, $p > .05$). In addition, the Cronbach's alpha reliability coefficient regarding the academic procrastination scale items was .78.

Descriptive statistics were benefited in order to expose the profiles of Facebook-user students enrolled in the study. Furthermore, arithmetic mean and standard deviation were used to determine students' academic procrastination levels. One-way variance analysis (One-Way ANOVA) was used to define the state of differentiation on the students' levels of academic procrastination according to their Facebook use and adoption of Facebook. The difference between groups as a result of the one-way variance analysis was specified using one of Post-Hoc tests which is Tukey

HSD. On the other hand, Pearson's correlation coefficient was checked to determine the relation between academic procrastination and scale sub-dimensions of Facebook use and adoption.

Three different scales were used in the study. In the process of computerizing the items in the academic procrastination scale, the responses given to 5-point Likert-type statements were scored as "This fully reflects me -1", "This often reflects me -2", "This reflects me a little -3", "This reflects me very little -4" and "This does not reflect me -5". 9 reverse items in the scale were scored in reverse. 5-point Likert-type items in the Facebook use case scale were scored as "Always -5", "Mostly-4", "Sometimes-3", "Rarely-2" and "Never-1". The final data collection tool Facebook adaption scale was presented with the items ranging from "I agree" to "I do not agree". There were not reverse items in the last two scales.

The answers given to interpret the level of Facebook adoption and use case were divided into three different groups based on the academic average of the values. In order to determine the groups regarding the Facebook use case scale which is composed of five-point Likert type items, the lowest of value of the items was subtracted from the highest value and the result was divided into three which resulted in the range of 1.33 $((5-1)/3=1.33)$. The same method was used for the Facebook adaption scale which is composed of ten-point Likert type items and the result was calculated as the range of 3. In the process of identifying the differences between academic procrastination and Facebook use case and level, the groups which were determined according to following ranges were taken into account (Table 1).

Evaluation Criteria	Academic Procrastination Evaluation Range	FC Use Case Evaluation Criteria	FC Adoption Evaluation Criteria
Low	3.67-5.00	1.00-2.33	1.00-4.00
Moderate	2.34-3.66	2.34-3.66	4.01-7.00
High	1.00-2.33	3.67-5.00	7.01-10.00

Table 1. Academic Procrastination, Facebook Adoption and Use Case Evaluation Criteria

In the analysis to determine the difference between groups, the level of significance was .05; in the interpretation study of correlation values, the level of significance was .01. SPSS 15.0 (Statistical Package for the Social Sciences) was used for the statistical analysis of the study.

IV. Findings

In this chapter, the information about Facebook-user students who participated in the survey and research findings in accordance with the purposes of the study were interpreted under the relevant headings.

a. Academic Procrastination of Facebook-User Students

The students' responses to academic procrastination scale items and the descriptive statistics for the whole scale are demonstrated in Table 2.

	\bar{X}	Ss
If I have an exam in the near time, I usually find myself doing other things than studying.	3.08	1.169
I generally rush to be able to deliver my homework/works on deadlines.	3.10	1.161
I often have a task finished sooner than necessary.*	3.11	1.129
I keep my assignments up to date by doing my work regularly from day to day. *	3.12	1.140
Even when I know a job needs to be done, I never want to start it right away.	3.18	1.223
If I have an important appointment, I make sure the clothes I want to wear are ready the day before.*	3.21	1.249
It often takes me a long time to get started on something.	3.22	1.185
I don't delay when I know I really need to get the job done.*	3.22	1.202
If I had an important project to do, I'd get started on it as quickly as possible.*	3.34	1.199
I arrive at college appointments with plenty of time to spare.*	3.42	1.101
I delay starting things until the last minute.	3.44	1.201
I'm usually in class on time. *	3.50	1.242
I'm usually in class on time. If I know that I have to do something, I don't postpone it.*	3.59	1.212
I'm careful to return library books on time. *	3.69	1.202
I delay starting things so long that I don't get them done by deadline.	3.75	1.167
I am often late for appointments and meetings.	3.85	1.190
OVERALL AVERAGE	3.36	.654

• reverse items

Table 2. Students' Level of Academic Procrastination

Facebook-user students seem to have a moderate academic procrastination level ($\bar{x}=3.36$) (Table 2). This finding can also be interpreted as that Facebook-user students have a tendency for academic procrastination.

The items located on the academic procrastination scale in Table 2 are listed from the highest level to the lowest. Three types of postponing behaviors at a lower level ($3.67 < \bar{x} \leq 5.00$) draw attention when academic procrastination-related items are analyzed (Table 2). These agents are being late for appointments or meetings (= 3.85), failing to submit homework or a study before deadline due to the delay in starting work (= 3.75), and not delivering the borrowed library books in time (= 3.69). Therefore, it is possible to say that students pay attention to these issues: going to appointments, starting projects and delivering the borrowed books to the library on time. Other 13 items show academic procrastination at a moderate level ($2.34 < \leq 3.66$)

Dealing with the things other than exams during exam periods ($\bar{x}=3.08$), trying to finish the homework before deadline ($\bar{x}=3.10$) and finishing the studies before deadline ($\bar{x}=3.11$) are the items which are the most postponed academic subjects.

b. The Impact of Facebook Use Case on Academic Procrastination

In accordance with the sub-purposes of the study, the academic procrastination scale, Facebook use case scale and Facebook adoption scale were applied to 715 Facebook-user students. The differences of low, medium and high levels of academic procrastination were examined in terms of Facebook use cases and the results of analysis were presented in Table 3.

Source of Variance	Sum of Squares	Sd	Mean Square	F	p	Significant Difference
Between groups	1.494	2	.747	6.780	.001	Low-Moderate Low-High
Within groups	78.442	712	.110			
Total	79.936	714				

Table 3. The impact of Facebook use case on academic procrastination

Facebook use cases taken, the academic procrastination score of students with a low-level of Facebook use was found $\bar{x}=2.94$, the academic procrastination score of students with a moderate-level of Facebook use was found $\bar{x}=3.03$ and the academic procrastination score of students with a high-level of Facebook use was found $\bar{x}=3.12$. As a result of a one-way analysis of variance which was conducted to determine whether there were differences between the groups, the fact that students with low and moderate-level of Facebook use and students with low and high-level of Facebook use differentiated in terms of academic procrastination level was concluded [$F(2-712)=6.780 p<.05$]. It is significantly noticeable that students with a low-level of Facebook use also have a lower academic procrastination level compared to the other two groups.

c. The Impact of Facebook Adoption Level on Academic Procrastination

Another variable whose relation with the academic procrastination level was investigated in accordance with the sub-purposes of the study is Facebook adoption level. In this context, students were grouped into low, moderate and high according to their Facebook adoption level and academic procrastination level differentiation between the groups was investigated (Table 4).

Source of Variance	Sum of Squares	Sd	Mean Square	F	p	Significant Difference
Between Groups	3.911	2	1.956	18.315	.001	Low-High, Moderate-High
Within Groups	76.025	712	.107			
Total	79.936	714				

Table 4. The level of academic procrastination and Facebook adaption.

The academic procrastination score of students with a low-level of Facebook adoption was found $\bar{X} = 2.96$, the academic procrastination score of students with a moderate-level of Facebook adoption was found $\bar{X} = 2.98$ and the academic procrastination score of students with a high-level of Facebook adoption was found $\bar{X} = 3.14$. As seen on Table 4, a one-way analysis of variance which was conducted to determine whether there were differences between the group shows that there are significant differences among groups [F(2-712)=18.315, p<.05]. Tukey HSD test demonstrated that the difference between two groups is significant at the level of .05. According to this result, it can be said that students with a high-level of Facebook adoption have also a higher level of academic procrastination than students with low and moderate level of Facebook adoption.

d. The Relation between Academic Procrastination and Facebook Use Case Dimensions

The relation between the Facebook use case scale and social relations, academic subjects and daily works which belong to this scale were analyzed using Pearson's correlation coefficient (Table 5).

		Facebook Use Case Scale			
		Social Relations	Academic Studies	Daily Works	Wide Scale
Academic Procrastination	Pearson Correlation (r)	.205**	.075*	.126**	.204**
	Sig. (2-tailed)	.000	.046	.001	.000
	N	715	715	715	715

* p<.05, ** p<.01

Table 5. The correlation between academic procrastination and students' Facebook use cases

When Table 5 examined, it is seen that there is a low, positive and significant correlation between the Facebook use case and academic procrastination of students (r=0.204, p<01). When the sub-dimensions examined, it is clear that Facebook use cases for social relations (r=0.205, p<.01) and daily works (r=0.126, p<.01) affect academic procrastination negatively most. In other words, the more individuals use Facebook for social relations and daily works, the higher academic procrastination level is. However, it can be inferred that Facebook use case for academic purposes

do not have a significant effect on academic procrastination ($r=0.075$, $p>.01$). In this respect, the fact that there is not a relation between Facebook use case for academic purposes and academic procrastination can be an important indicator which confirms the reliability of research data.

e. The Correlation between Academic Procrastination and Different Levels of Facebook Adoption

Finally, Facebook adoption levels of the students are discussed with the sub-dimensions of the scale (utility, ease of use, environmental impact, facilitating conditions, and social identity) and the correlation between these factors and academic procrastination was analyzed with the Pearson correlation coefficient (Table 6).

It is observed that there is a low, positive and statistically significant correlation between the academic procrastination of Facebook-user students and average score of the Facebook adoption scale ($r=0.251$, $p<.01$). It can be interpreted that academic procrastination is most affected by the adoption of Facebook's facilitating factors with regard to sub-dimensions analysis ($r=0.224$, $p<.01$). After that, Facebook's adoption for ease of use ($r=0.203$, $p<.01$), adoption for utility ($r=0.178$, $p<.01$) and adoption for social identity ($r=0.173$, $p<.01$) have an impact on academic procrastination respectively. The dimension which includes the items like "the ideas expressed regarding Facebook use or suggestion by the individuals important/surrounding or the individuals important/surrounding who use Facebook to communicate or share information and trying to be attuned to these individuals" is the one and only dimension that does not have an impact on academic procrastination ($r=0.093$, $p>.01$).

IV. Discussions

As a result of the research, it was concluded that Facebook-user students have a moderate tendency for academic procrastination. If the use of Facebook social network is evaluated as the use of Internet at the same time, this finding is consistent with the other studies conducted in the past. For example, Beck, Koons and Milgrim (2000) found that the increase in the amount of Internet use also brought about academic procrastination in their studies. In addition, Chen and Peng (2008) reached the conclusion that the increase in the amount of Internet use had a negative impact on academic success.

It is noticeable that Facebook-user students mostly have problems about academic procrastination because of dealing with the external affairs during an exam period, trying to finish a project on deadline and not doing the works daily and regularly. Being late for appointments, starting assignments late and the early delivery of books borrowed from library can be exemplified as the least postponed items. Schouwenburg's (2004) study mentioned above comes to mind when the items that students in question mostly have are taken into consideration. In this context, it can be said that students give their time to Facebook social network instead of studying, preparing for exams or doing homework.

The differences were found between the academic procrastination levels of students with different Facebook use cases. The students with moderate and high levels of Facebook use case have a

higher tendency for academic procrastination compared to students with a low level of Facebook use. Kirshner and Karprinski (2010) stated that Facebook-user students spent less time for academic studies and they were less successful compared to non-Facebook-user students.

V. Conclusions

According to results of the study, Facebook use case is an effective factor on academic procrastination -even though it does not have a large effect- and while the increase in the amount of Facebook use increases academic procrastination, reduction in the amount of Facebook use reduces academic procrastination. It was found that while the amount of Facebook use in terms of social and daily relations affected academic procrastination with regards to sub-dimensions analyzed, the amount of Facebook use for academic studies did not have an impact on academic procrastination.

The impact of students' Facebook adoption level on academic procrastination was also investigated in the study. As a result, it was concluded that students with a higher level of Facebook adoption have a higher tendency for academic procrastination compared to students with moderate and low level of Facebook adoption. The correlation value to determine the severity of the impact on the level of academic procrastination led to the conclusion that there was a low but statistically significant difference between Facebook adoption and academic procrastination levels. In the analysis conducted for the sub-dimensions, it was revealed that facilitating factors, ease of use, utility and social identity dimensions were the low and positive markers of academic procrastination respectively whereas the effect of the environment dimension could not be seen as a determining factor.

Considering the findings of this study in general, the adoption and increasing amount of Facebook use brings about academic procrastination behavior. However, it should not be noted that Facebook or similar platforms can contribute to academic processes positively.

VI. Implications

In this study, the correlation between academic procrastination and the adoption and use status of Facebook social network with its various dimensions was investigated. Nevertheless, Facebook, like any other platforms on the Internet, is changing and developing over time in many ways. Therefore, the findings of this and similar studies need to be repeated and updated at regular intervals. In addition, it may be considered that similar studies which will be conducted for other social networks like Facebook may lead to the findings that will contribute to the literature.

Considering that the use of Internet is an activity that includes social network use, it is seen that there is also a need for studies which separates the social network use than the use of Internet for other purposes.

The absence of any correlation between academic procrastination and the use of Facebook for academic purposes can be considered as an important indicator. Accordingly, studies anticipating

social networks with considerable potentials for teaching and learning processes to be used as a teaching technology may reverse a lot of negative aspects of the use of social networks. The studies in the literature support this, too (Çoklar, 2012; Rambe 2011).

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