

Artículo de investigación

Self-Regulated Learning and Academic Procrastination as Predictors of Smartphone Addiction among Second Year- Middle School Learning Disabled Students

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abstract

This study aimed to investigate the combined effects of Self-Regulated Learning (SRL) and Academic Procrastination (AP) on Smartphone Addiction (SA). It also aimed at investigating the relative contribution of SRL and academic procrastination to SA among second year -middle school learning disabled students. Moreover, it sought to explore if there were correlations between and among SRL and AP on SA. Quantitative survey research was employed. 68 students from the four schools were selected. The results revealed that there were correlations between and among SRL, AP and SA. Both SRL and AP contributed to the prediction of SA. AP is a more potential predictor than SRL. The results raise our awareness of the negative impact of SA upon students as students who are supposed to be of no risk for SA could use high SRL strategies. Additionally, students who are used to using smartphone excessively are rarely able to attain high academic achievement, and may delay doing their assigned homework.

Keywords. Self-Regulated Learning, Academic Procrastination, Smartphone Addiction, Second Year - Middle School Learning Disabled Students

Introduction

In developed countries as well as developing ones, there is a dramatic rise in the use of smartphone. For instance, people who use smartphone all over the world are supposed to reach 2.32 billion in 2017 and could increase to 2.71 billion by 2019. For 2017, the number of people use smartphone in Egypt can reach 23.6 million, and almost 28 million by 2019 (statistics, n. d.). Although smartphone applications are likely to be a source of convenience and entertainment for the users, they may have negative effects on their academics. As shown by Ifeanyi & Chukwuere (2018), it distracted students from their studies in certain aspects. Smartphone addiction, or "Internet Gaming Disorder" can be a problematic behavior, according to DSM-5, but in order to be considered a formal addictive disorder, much research should be conducted (APA, 2013).

It was found that SA has become a serious problem for the majority of students (Kuss, Griffiths & Binder, 2013; Taymur, 2016; Niu, et al., 2016), as they may display addictive-like symptoms (Lopez-Fernandez 2017).

Adolescents groups, including those who are in the middle school (preparatory, in Egypt), have, according to Young (2015), a potential risks to experience smartphone addiction. Some researchers (e.g. Alosaimi et al., 2016; Ben-Yehuda et al., 2016; Lee, Cho, Kim & Noh ,2015) found that SA correlated negatively with learning, particularly amongst young people.

Students who display problematic smartphone use are likely to experience usage control difficulty while doing their academic assignment (Lee and Lee, 2017). They are likely to spend much time on social media instead of reading their books (Adeniyi, 2019). Adolescents use the internet extensively (Valkenburg, Schouten, & Peter, 2005). As a result, they may procrastinate doing their related to school -duties and responsibilities (Yasin& Mustafa, 2018). They may have problem with academic performance (Serkan& Ece, 2018). They may have low self-regulation in usage and this in turn is likely to contribute to their low academic performance (Alosaimi et al., 2016). It was found by Hawi & Samaha (2016) that students who have used

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smartphone excessively were rarely able to attain high academic achievement. They may suffer from lower academic self-esteem as a result of greater problematic smartphone use (Heather, Tae-Hoon, Lauren & Ivanka ,2019). When students spend much time with their smartphone, surely they are likely to be considered problematic smartphone users and this in turn will affect their academic performance negatively (Heather et al., ,2019).

Students encounter situations that have a negative effect on their academics. They probably do not study for their exams on time, do not focus on school subjects and lessons, and may delay doing their assigned homework (something called Academic procrastination; Ayça, İlknur & Tuğba, 2019). Academic procrastination can be described as a student's intention to carry out a certain academic task but has problems in getting motivated to do within the specified time (Adel, A sharaf, Mourad & Amaal,2013).

This in turn urge people to procrastinate doing their related to school -duties and responsibilities. Procrastination does not only impede students' AS, but affects their learning negatively as well (Fathi & Mourad, 2015). Students delay completing the assigned weekly reading, administrative duties that are related to academics, and leave the preparation of term papers to the last minute (Yılmaz, 2017), despite their awareness of the negative outcomes on their academic life (Ayça, İlknur & Tuğba, 2019).

Ayça, İlknur & Tuğba, (2019) found that PMU impacts AP. It was indicated that "MPA" could be a predictor of AP (Ufuk, Mustafa, Süleyman & Kübra,2013). However, AP, according to Odaci (2011) did not correlate with PIU.

SLR is correlated with adolescents' learning levels and academic results (Fuentes, García-Ros, Perez-González. & Sancerni., 2019). The lower students' SRL is, the more they have SA (Bogoan, Seok-won, Hwajung & Kyungsik, 2019). Helping students with their SRL skills is an effective way in resolving smartphone addiction (Gökçearsan, Mumcu, Haşlaman & Çevik,2016). SRL predicted Problematic Smartphone Use (Zeyang, Kathryn & Mark, 2019). People's inability to self-regulate their learning might increase their smartphone usage(Penjira , Felicito , Ruangrit & Penjuree, 2016).

Inability to self-regulate learning is likely to be an indication of internet/mobile phone use

(Soror, Steelman, & Limayem ,2012). When students have low self-regulation , this may negatively predict problematic smartphone use, as has been found in European samples (Gökçearsan, et al., 2016). The results of Lee, Cho, Kim & Noh 's study (2015), in consistent with others' (e.g. Kim, Tak, & Lee, 2010; Sha, Looi, Chen, & Zhang, 2012) indicated that students who used smartphone less could have more SRL strategies and average learning flow, compared to those with those who are regarded as smartphone addicted.

Problem statement

Advances in Smartphone, as a result of development and proliferation of technology is likely to be a threat to students at our society as they may focus totally on the activities they carry out on their phones, and are unable to control their times (Khang, Kim, & Kim, 2013), to the degree that we can call them " Smartphone Addicted". To the best of my knowledge, there are less data concerning problematic smartphone use as predicted by SRL and AP among learning disabled students in Egypt.

This study poses the following hypotheses:

H 1: There are significant correlations between and among SRL, AP and SA.

H 2: There are combined effects of SRL and AP on SA.

H 3: There are relative contribution of SRL and AP to SA.

Method

Design

Quantitative survey research was employed. The independent variables are self SRL and AP, SA is the dependent variable.

Participants

Convenient sampling method was used to recruit the participants. The researcher selected four middle schools from Baltim City, Kafr El Sheihk, namely El Kom AL Ahmar middle School, El Shiekh Mohammed Waheeb middle School, El Waheba middle School and Mortada middle school. The researcher confirmed that any information students would provide would be top secret and confidential. It would not be revealed to anyone. It would be used for research purpose only. Each student participant met the criteria for specific learning disorder. Those who demonstrated low achievement scores on a

cognitive reading comprehension test (standardized test Mourad, 2015) (i.e., at least 1.5 [SD] below their same age people (APA, 2013, P.70 ; Mourad, 2018, P.109), though their normal levels of intellectual functioning(Mourad, 2012; Mourad & Amaal, 2013; Hesham& Rasha, 2014;),the absence of any neurological or motor disorders(AI Said, 2014; Mohammed, 2014, Omema, 2015) were included. So 68 students from the four schools were selected. They were all in second year. They aged 13-14 years (M=13.6, SD= 1.02).

Instruments

Brief Smartphone Addiction Scale (BSAS) (Csibi, Demetrovics & Szabo ,2016). The purpose of this scale was to assess exaggerated smartphone use. It is a 6 items with a 6-point Likert scale from 1 = strongly disagree, 6 = strongly agree. The scale takes only 5 minutes to complete. Total scores typically range from 6 – 36. pca yielded a single component for the 6-item tool, which accounted for 52.38% of the total variance. The IR of the scale was good ($\alpha = 0.82$). CV was achieved as there were significant differences between heavy and light users ($p < .001$) (Csibi et al. ,2016). In this study, The IR of the scale was good too ($\alpha = 0.85$).

Self-Regulated Learning Scale. This scale was developed specifically for this study. It is a 10 items with a 4-point Likert scale from 1 = Not very like me, 4 = very like me. The scale takes only 10 minutes to complete. Total scores typically range from 10 – 40. The IR of the scale was good ($\alpha = 0.89$). CV was achieved as there were significant differences between high and low self regulated students ($p < .001$).

Procrastination Scale (Tuckman, 1991). The purpose of this scale was to assess procrastination tendencies. It is a 16 items with a 4-point Likert (i.e. 1 = that's me for sure, 2 = that's my tendency, 3 = that's not my tendency, 4 = that's not me for sure). Total scores typically range from 16 – 64. $\alpha = .86$

Procedures

Prior to administering the scales, the researcher informed students' parents with the help of social work teacher. They were given the option of accepting or refusing to allow their children's participation in the study. Students were also informed about purpose of the study. The researcher instructed them to honestly complete the scales. They were told to keep their identifies anonymous on the scale paper to ensure honesty and sincerity. They also were informed that they should participate voluntarily and nothing to be feared about even their responses. All data were entered in an SPSS file.

Data analysis

PC and moderated hierarchical multiple regression analyses were conducted.

Results

Descriptive data and inter-correlations

Table 1 shows the M, DS, inter-C, and IC coefficients of SRL, AP and SA. SRL correlates negatively with AP ($r = -0.53$), and SA ($r = -0.49$). On the other hand, self-regulated learning was found to be positively correlated with SA ($r = 0.41$).

Table 1 – DS and inter-correlations of SRL, AP and SA

Variables	1	2	3
Self-Regulated Learning	1.00		
Academic Procrastination	-.53**	1.00	
Smartphone Addiction	-.49**	.41**	1.00
Mean	29.57	32.19	47.65
Standard deviation	3.60	1.07	2.75

** P < .01

SRL, AP as Predictors of SA

As shown in table 2, the two variables (SRL and AP) when put together yielded a coefficient of multiple regression (R) of 0.501 and a multiple correlation square of 0.486. This shows that 48.6% of the total variance in SA of those who

participated in the study is accounted for by the combination of SRL and AP. The table also indicates that the ANOVA of the MRA data produced an F-ratio value significant at 0.05 level ($F(2, 65) = 32.634; P < 0.01$).

Table 2. The regression results of the Predictor Variables (self-regulated learning and academic procrastination) and the Outcome Measure (smartphone addiction).

Model Summary b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change statistics				
					R Square change	F Change	Df1	Df2	Sig. F change
1	.708a	.501	.486	3.84187	.501	32.634	2	65	.000

- a. AP, SRL
- b. SA

Table 3. Summary of MRA between SRL and AP and SA.
ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	963.365	2	481.682	32.634	.000a
	Residual	959.400	65	14.760		
	Total	1922.765	67			

- a. AP, SRL
- b. SA

As for results displayed in table 4, each of the two independent variables made significant individual contributions to the prediction of smartphone addiction. The results indicated that the following beta weights which represented the relative contribution of the independent variables

to the prediction were observed. self-regulated learning ($b = -0.477$, $t = 5.046$; $P < 0.01$) and academic procrastination ($b = .646$, $t = 7.029$, $P < 0.05$). Although SA and AP contributed significantly to the prediction of SA, AP is a more potent predictor.

Table 4. Relative Contribution of SRL and AP to SA
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	.748	4.140		.181	.857	-7.520-	9.016
1 SRL	.477	.095	.448	5.046	.000	.288	.666
AP	.646	.092	.624	7.029	.000	.463	.830

As is shown in figure 1., I superimposed normal curve in the histogram. The residuals look close to normal. Overall, as shown in figure 2, the

residual plot (see below) shows the residuals and a histogram with a normal distribution overlay.

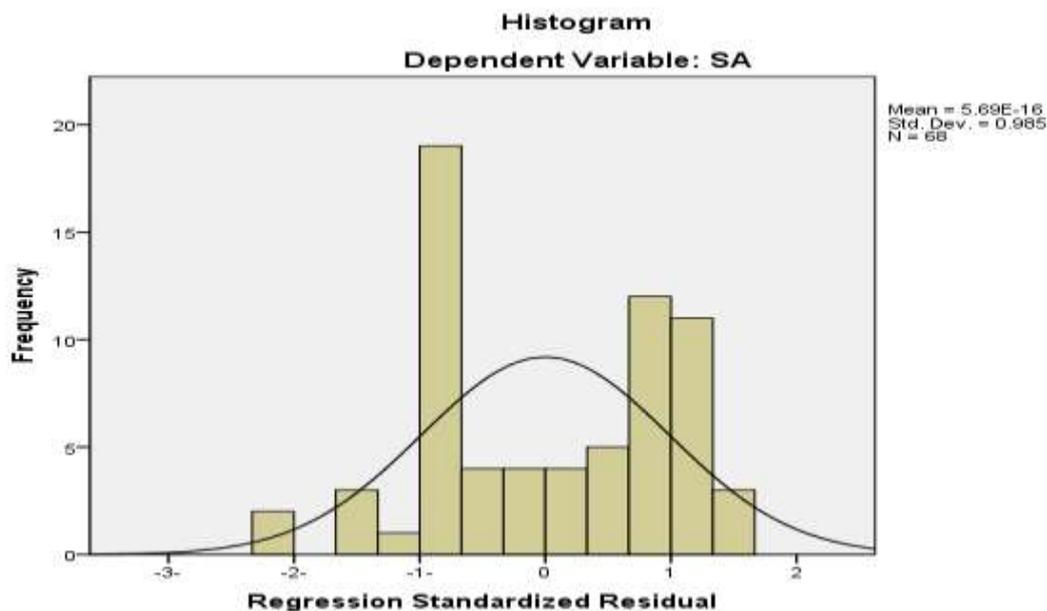


Figure 1. Regression Standardized Residual

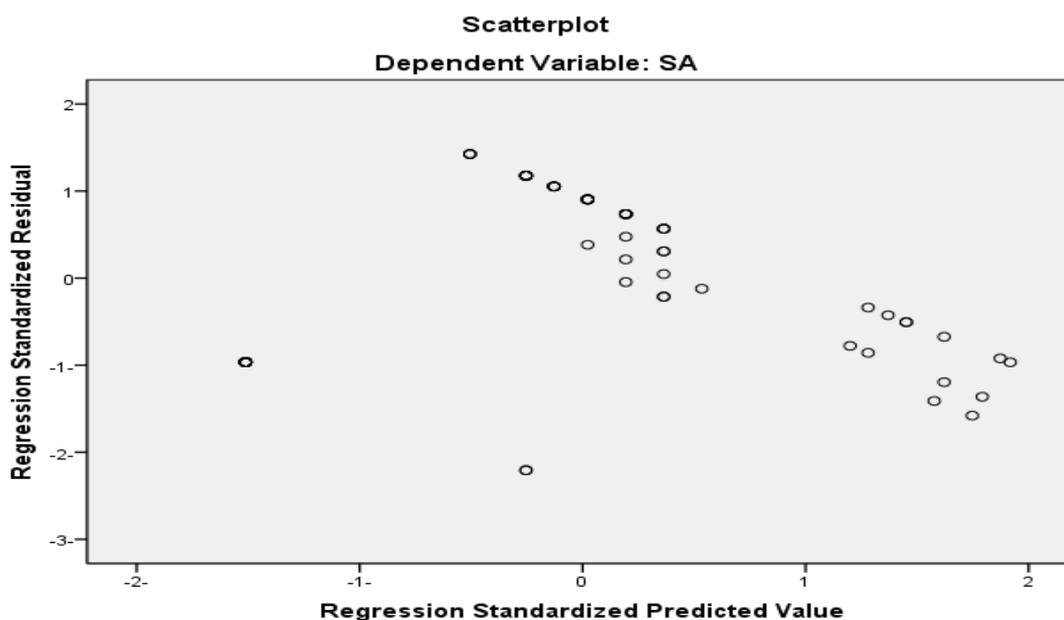


Figure 2. Scatterplot

Discussion

This study aimed to explore the combined effects of SRL and AP on SA. It also aimed at investigating the relative contribution of SRL and AP to SA among second year -middle school learning disabled students. Moreover, it sought to explore if there were correlations between and among SRL and AP on SA. In this respect, the findings extend our knowledge on the association

between SRL, AP and SA among second year-middle school learning disabled students.

Descriptive statistics, inter-correlations, and internal consistency coefficients of SRL, AP and SA showed that SRL correlates negatively with AS. On the other hand, self SRL correlated positively with SA. Although is inconsistent with the finding obtained by Penjira , et al.(2016), which revealed that SRL had no

significant effect on SA, the findings of this study confirm previous other research that when students have higher levels of addiction, this is an indicator of having lower level of SRL, as well as low level of ability when they deal with their academics (Lee et al., 2015). The more the students use their smartphone, the more to be disengage from class activities (Gökçearslan, et al., 2016). SRL led to less AP and SA (Mahapatra, 2019), whereas, students with high self regulation can control their internet use to limit into academic tasks (Simanjuntak, 2017; Zhang, 2015).

The present study found that AP correlated positively with SA, and is a more potent predictor. It appears that students, as those in this study procrastinate when they are unable to control their smartphone usage. It is worth mentioning that training these students in effective SRL strategies will be of critical benefits for them.

Overall, the present study suggests that total variance in smartphone addiction of those who participated in the study is accounted for by the combination of SRL and AP and AP is a more potent predictor.

Application and implications

The results of this study have corroborated with previous research and confirmed correlations between and among SRL, AP and SA. These findings have practical implications for interventions and preventions of SA among middle school learning disabled students. Furthermore, these results raise our awareness of the negative impact of SA upon students as students with low risk for SA could have higher average SRL. Additionally, students who are used to using smartphone excessively are rarely able to attain high academic achievement, and may delay doing their assigned homework.

Limitations

This study has some limitations. First, there were 68 student participants in this study which is a relatively small sample size. A larger sample may provide richer results. Second, as cross-sectional study, there has to be caution in making any generalization of the results. Nevertheless, results provide supporting evidence for developing interventions to help combat smartphone excessive use through parental and teachers monitoring. Third, convenient sampling method was used to select the participants. Therefore, the findings of the study have limited

generalizability in other regions and age groups. Finally, the use of self-reporting measures for collecting data is another limitation of this study. Although all student participants completed the questionnaires without revealing their identities, they may under-report smartphone excessive use fearing the stigma of being addicted.

Conclusion

In conclusion, the aim was to investigate the predictive role of SRL and AP on SA among second year- middle school learning disabled students. The results revealed that there were correlations between and among SRL, AP and SA. Both SRL and AP made contributed to the prediction of SA. AP is a more potential predictor than SRL. It is hoped that future research will continue to advance in this area so that we can gain a more comprehensive understanding into how to sooth of SA, using, for example effective SRL strategies. The study findings expand our knowledge of SRL, AP and SA among second year- middle school learning disabled students.

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