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Difficulties in Emotion Regulation and Academic Procrastination Experienced by Pre-Service Teachers: Investigating the Mediation of Social Media Addiction

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The present study aims to investigate the relationship between difficulties in emotion regulation and academic procrastination among pre-service teachers, with the mediation role of social media addiction. For this aim, the data was collected from the pre-service teachers enrolled in diverse teacher training programs, and several hypotheses were tested through a mediation model. The findings first revealed that the difficulties in emotion regulation significantly and positively predict both academic procrastination and social media addiction among pre-service teachers. Besides, pre-service teachers' academic procrastination levels were significantly and positively predicted by their social media addiction levels. The mediation analysis further showed that social media addiction partially and significantly mediates the association between difficulties in emotion regulation and academic procrastination among pre-service teachers. The obtained findings suggest that as the difficulties in emotion regulation experienced by pre-service teachers increase, their addiction levels to social media platforms or applications likewise increase, which in turn leads to an increased level of academic procrastination among them. The findings of the current study emphasize the need to enhance pre-service teachers' emotion regulation skills in teacher training programs to improve both their well-being and academic achievement. The findings were discussed with the relevant studies, and recommendations were offered in this regard.

Introduction

Emotions play a significant role in human behaviours, including those in academic lives. However, the consequences of emotions might be positive or negative relying on the context (Gross, 2015). It can be argued that these consequences depend on individuals' emotion regulation skills, which are employed appropriately with the contextual demands and their purposes. Emotion regulation is a term defined as "the processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions." (Gross, 1998, p.275). Gratz and Roemer (2004) also characterized it through the following dimensions: recognizing and embracing emotions, regulating

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impulsivity in case of unpleasant emotions, and adopting regulation strategies that suit the context. They further stated that the absence of one of or all these dimensions points out emotion dysregulation or Difficulties in Emotion Regulation (DER).

Appropriate employment of emotion regulation strategies leads to diverse positive outcomes in both students' social and educational environments. Relevant intervention studies revealed that improved emotion regulation leads to enhanced cognitive flexibility (Baradaran & Noushari, 2022), decreased academic procrastination (Baradaran & Noushari, 2022; Joghataei, Mafakheri, & Bakhshipour, 2022; Schuenemann et al., 2022), decreased risky behaviors, and decreased fear of success (Joghataei et al., 2022). The associational studies indicated that emotion regulation significantly and negatively predicts procrastination (e.g., Kanwar, 2023; Setiyowati et al., 2024), social media addiction (e.g., Giordano, Schmit, & McCall, 2023; Peker & Nebioglu Yildiz, 2022), and game addiction (e.g., Giordano et al., 2023).

On the other hand, DER result in several negative consequences in both academic and social life. The associational studies revealed that DER is significantly related to academic procrastination (e.g., Chen & Chung, 2025; Duru, Balkis, & Duru, 2024), social media addiction (e.g., Elkin et al., 2025; Quaglieri et al., 2022), and online game addiction (e.g., Giordano et al., 2023). The existing studies, however, were mainly conducted with students from middle school to university level, and inadequate knowledge is existing regarding the role of DER in pre-service teachers' digital addictions and academic procrastination. Therefore, the objective of the present research study is to examine the DER-academic procrastination association mediated by social media addiction among pre-service teachers. Specifically, the model illustrated in Figure 1 was proposed and tested in the present research study.

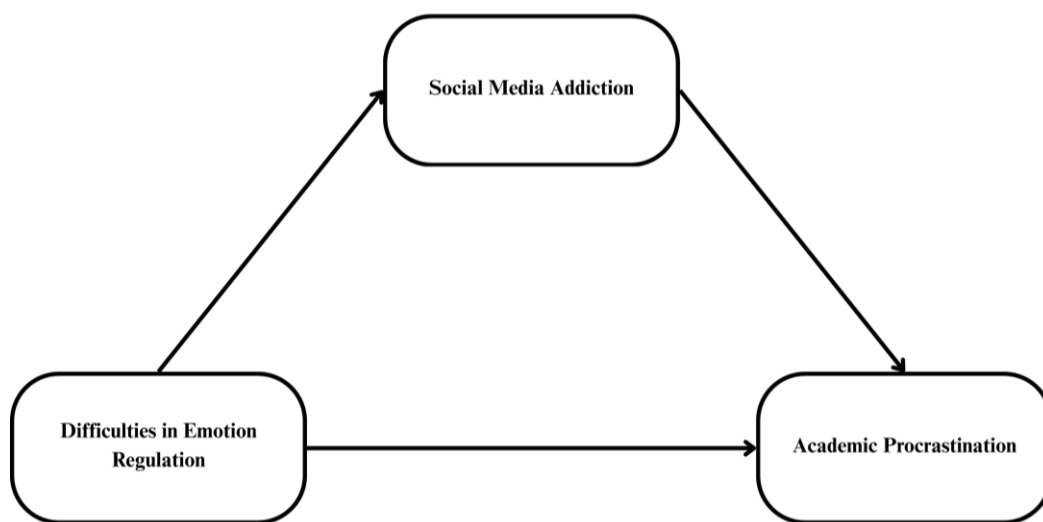


Figure 1. The Hypothesized Mediation Model in the Study

Association of Emotion Regulation with Academic Procrastination

Academic procrastination can be conceptualized as students' irrational delay of academic works. The recent studies on the link between emotion dysregulation and academic procrastination were conducted with the participation of high school and university students. The reviewed studies demonstrated strong positive relationships between emotion

dysregulation and procrastination, while they showed strong negative relationships between the levels of regulating emotions and procrastination in academic tasks. The relevant experimental studies also revealed significant influences of training programs targeting emotion regulation skills on procrastination behaviors in academic works.

The associational studies conducted with higher education students showed the positive association of DER with academic procrastination (Bytamar, Saed, & Khakpoor, 2020; Duru et al., 2024; Rad et al., 2025) and the negative relationship of emotion regulation with academic procrastination (Kanwar, 2023). DER among university students significantly predicted their procrastination behaviors (Duru et al., 2024; Rad et al., 2025). A recent study by Chen and Chung (2025) also illustrated that the emotion regulation-procrastination link is bidirectional among university students. Likewise, Setiyowati et al. (2024) demonstrated that DER significantly predicts procrastination among high school students.

In the same vein as the associational studies, the intervention studies illustrated how improvement of participants' emotion regulation skills leads to diminished level of procrastination behaviors. Schuenemann et al.'s (2022) study with the participation of higher education students illuminated that the improvement of general emotion regulation skills through a training intervention resulted in a decreased level of procrastination. Similar findings were obtained from the intervention studies with the participation of high school students. It was shown that the training program aiming to improve emotion regulation is an effective intervention for reducing high school students' procrastination levels (Baradaran & Noushari, 2022; Joghataei et al., 2022). Based on these findings from both associational and intervention studies, it was hypothesized that DER significantly and positively predicted academic procrastination among pre-service teachers.

Association of Emotion Regulation with Social Media Addiction

The term, social media addiction, can be characterized as the overdependence on or excessive usage of social media applications or platforms. The literature in this regard shows its association with emotion dysregulation among university students, high school students, adolescents, young adults, or the general population. The relevant studies conducted with adolescents indicated the significant and negative correlation of social media addiction with emotion regulation (Giordano et al., 2023). Consistently, another research study by Peker and Nebioglu Yildiz (2022) showed that the regulation strategy of suppression negatively predicts this addiction, while reappraisal of emotions positively predicts it among adolescents. Similar findings were also obtained for the general population. Alenezi et al. (2023) illuminated the negative relationship of women participants' emotion regulation with Facebook addiction levels. In line with this finding, another study conducted by Zsido et al. (2021) showed that maladaptive cognitive regulation strategies positively predicted the participants' (aged from 18 to 60) social media and smartphone addiction levels.

Like other groups, it was revealed for university students that DER was found as an antecedent of social media addiction (Elkin et al., 2025) and the "mood modification" dimension of problematic use of social media (Nazlıgül, Koçyiğit, & Merdan Yıldız, 2022). Besides, cognitive regulation strategies of "self-blame", "self-acceptance", "positive refocusing", "refocusing on planning", and "rumination" significantly predict social media addiction among university students (Aygar, Kurt, & Akbay, 2025). Liu et al. (2024) also illustrated that the cognitive regulation strategy of "self-blame" significantly predicts social media addiction among university students. Ozer, Tanriverdi, and Ozguc (2024) likewise

determined significant association of cognitive emotion regulation skills with social media addiction. As for young adults aged from 18 to 35, it was revealed that DER positively predict both social media and internet addictions (Quaglieri et al., 2022). Therefore, it was hypothesized in this study that DER among pre-service teachers is significantly and positively related to their social media addiction.

Association of Social Media Addiction with Academic Procrastination

A wide range of studies are available, indicating the link between social media addiction and academic procrastination conducted with middle school, high school, and university students, including medical students and pre-service teachers. A relatively recent study conducted with middle school students (Üztemur & Dinç, 2023) documented that using social media in a problematic manner is an antecedent of their procrastination behaviors in academic tasks, varying with gender and showing stronger prediction among males than females. As for the students at high school, social network addiction positively and significantly predicted their procrastination and negatively predicted the quality of their academic life (Khalifa, 2021). In their study with children and adolescents, Wartberg, Thomasius, and Paschke (2021) showed positive relationships between problematic social media use and procrastination. Similar findings were obtained for the distance secondary school students (Caratiquit & Caratiquit, 2023), indicating that social media addiction is a substantial influential factor on procrastination behaviors in academic tasks.

The current findings obtained with the participation of higher education students indicated that social media addiction (Kurker & Surucu, 2024; Sadiq et al., 2025) or its problematic use (Serrano et al., 2022) is a significant and positive predictor of academic procrastination. Specifically, Instagram addiction demonstrates the same predictive role in university students' procrastination, while it has no significant predictive role in their academic achievement (Pekpazar et al., 2021). Partially consistent findings were obtained by Avci, Cakir, and Akinci (2024), revealing that social media addiction levels of the participants have no significant influence on procrastination and performance in academic tasks, despite the significant negative correlations among them. As for the specific sub-groups of higher education students, the findings illustrated positive correlation of social media addiction with procrastination behaviors of both students in medicine (Naushad et al., 2025) and teacher training programs (Ersoy & Arseven, 2021). Thus, it was hypothesized in the current study that social media addiction among pre-service teachers is significantly associated with their academic procrastination.

The Present Study

The reviewed studies imply that the relevant studies are generally conducted with the participation of students from middle school to university education. However, there is a need for further associational studies on the link between pre-service teachers' emotion regulation skills and their school and social lives to provide relevant interventions in teacher training programs. The findings of this sort of study might provide knowledge regarding future intervention studies on improving academic self-efficacy, achievement, and well-being of pre-service teachers, as well as the implications for curriculum and practices in teacher training programs. For this reason, the aim of the current study is to unfold the association of DER with academic procrastination among pre-service teachers by investigating the mediation of social media addiction in this association. Based on this aim, the main research question raised in this research study is as follows: What is the association between DER and academic

procrastination with the mediation of social media addiction? Specifically, the following hypotheses were proposed and tested in the current research study:

H1. Emotion regulation difficulties are positively associated with academic procrastination.

H2. Emotion regulation difficulties are positively associated with social media addiction.

H3. Social media addiction is positively associated with academic procrastination.

H4. Social media addiction mediates the association between emotion regulation difficulties and academic procrastination.

Method

Research Design

An association research design was employed within the present study to reveal the existing relationships between the specified constructs without any intervention. Thus, the associations among pre-service teachers' DER, social media addiction, and academic procrastination were explored without any intervention.

Participants

The participants of the present research study, pre-service teachers studying in the diverse programs on teacher training in a public university, were selected through a convenience sampling strategy. A total of 318 pre-service teachers studying in diverse higher education programs voluntarily participated in the present study based on their convenience. 77.7% of the participants (N=247) were female, while 22.3% of them (N=71) were male. Most of them are in the age range of 18 to 24 (N=308, 96.9%), and 10 of them were in the age range of 25 and 42 (3.1%). The teacher training programs the participants were enrolled in were distributed as "elementary mathematics teaching" (N=66, 20.8%), "English language teaching" (N=62, 19.5%), "social studies teaching" (N=45, 14.2%), "Turkish language teaching" (N=43, 13.5%), "primary school teaching" (N=39, 12.3%), "early childhood teaching" (N=28, 8.8%), "guidance and psychological counselling" (N=17, 5.3%), "music teaching" (N=8, 2.5%), "science teaching" (N=8, 2.5%), and "physical education and sports teaching" (N=2, .6%). Most of them were in the third year (N=145, 45.6%) of their program, followed by the programs' second year (N=78, 24.5%), fourth year (N=64, 20.1%), and first year (N=31, 9.7%).

Data Collection Tools

Difficulties in Emotion Regulation Scale (DERS-16): It is a shortened form of the initial long DERS, developed by Gratz and Roemer (2004). The essential validity and reliability study for the short form of this scale (DERS-16) was reported by Bjureberg et al. (2016). Its further validity and reliability in the Turkish context were satisfied with the participation of undergraduate students by Yiğit and Guzey Yiğit (2019). As a self-report scale, DERS-16 can be used to measure the DER experienced by the students at the higher education level. The Cronbach α was found as .92 for the DERS-16 in the Turkish context



(Yiğit & Guzey Yiğit, 2019). The higher scores gathered from DERS show a higher level of DER among university students.

Academic Procrastination Scale: It was originally developed in the study performed by McCloskey (2011). The validity and reliability of the shortened instrument, the 5-item scale, was performed by Yockey (2016) with university students. The scale was validated in the Turkish context with the participation of university students by Balkıs and Duru (2022), suggesting that it is a valid and reliable measurement instrument in the Turkish context. The Cronbach's α value obtained in the study conducted by Balkıs and Duru (2022) is .88, demonstrating a satisfactory level of internal consistency. The higher level of scores from the scale illustrate higher academic procrastination among university students.

Bergen Social Media Addiction Scale: It was developed in the study reported by Andreassen et al. (2016) and further validated in the Turkish context by Demirci (2019) through the essential analyses, revealing that it is satisfactorily valid and reliable to measure university students' social media addiction. It consists of six items with a unidimensional structure. The Cronbach's α value obtained in the adaptation study for university students was gathered as .83 (Demirci, 2019), suggesting that it demonstrates adequate internal consistency.

Procedure for Collecting Data

The period in which the data were collected was in the spring term of the 2024-2025 academic year. Before collecting the data, the ethical approval for conducting the present study was gathered from the Social Sciences Ethics Committee within the university where the researcher is affiliated (File number: 255010). The data were collected through an online form, including a demographic information form, DERS-16, "academic procrastination scale", and "Bergen social media addiction scale". An informed consent form was requested from each of the participants to ensure that they are informed about the goals and conditions of the present study and voluntarily completed the online form. The data collection procedure was completed within approximately one month.

Data Analysis

The descriptive findings were presented by computing the mean, standard deviation, skewness, and kurtosis values for each of the included variables in the research study. Cronbach's α , as well as McDonald's ω coefficient, was computed to ensure the internal consistency of the measurement tools used in the current research study. Correlations among the variables covered in the current study were gathered using "Pearson's correlation analysis". Furthermore, the "independent samples t-test" was used to illuminate the potential covariate variables in the tested model. The mediation analysis was conducted through the "regression-based least squares analysis" using Model 4 in PROCESS Macro (Hayes, 2013). During the mediation analysis, 5000 bootstrap samples were used. The significance of the mediation effect within the proposed model in this study was assessed through the 95% confidence intervals. The significance of the direct effects was evaluated by computing β and p values as well as confidence intervals. The data analyses were conducted in SPSS (version 26) and PROCESS macro for SPSS (version 3.4.1) by Andrew F. Hayes. Besides, the Cronbach's α and McDonald's ω values were computed using JASP (version 0.19.3)

Findings

Descriptive Findings and Correlations between the Study Variables

The descriptive findings were obtained by computing the means and standard deviations in addition to the skewness and kurtosis values (see Table 1). The highest score was observed for social media addiction among the pre-service teachers ($M=3.391$, $SD=.808$), followed by academic procrastination ($M=3.254$, $SD=1.136$). The lowest score was observed for pre-service teachers' perceptions of DER ($M=2.864$, $SD=.898$). These descriptive findings illustrate that pre-service teachers experience academic procrastination and social media addiction above the average, while they experience DER at a medium level. Besides, it was assumed that all study variables are approximately normally distributed based on the values observed for skewness and kurtosis in the descriptive analysis, ranging from $+-.014$ to $+-.942$. Table 1 additionally presents internal consistency levels of the measurement instruments used in the current research study. The coefficients gathered in this study for Cronbach's α in addition to McDonald's ω demonstrate that academic procrastination ($\alpha=.921$, $\omega=.923$), DER ($\alpha=.945$, $\omega=.947$), and social media addiction ($\alpha=.812$, $\omega=.812$) scales demonstrate a satisfactory level of internal consistency.

Pearson's correlation analysis was used to illustrate the correlations between academic procrastination, DER, and social media addiction (see Table 1). The correlational findings showed significant and positive associations between each pair of the variables covered in the present research study. The highest correlation was observed between the pre-service teachers' perceptions of DER and social media addiction ($r=.479$, $p<.01$), followed by academic procrastination-social media addiction relationship ($r=.382$, $p<.01$). The lowest correlation coefficient was obtained for the relationship between academic procrastination and DER ($r=.284$, $p<.01$). These findings imply that there are medium-level significant correlations between each pair of variables.

Table 1. Descriptives, Internal Consistency Coefficients, and Correlations

Variables	Mean	SD	Skewness	Kurtosis	α (ω)	$r(1)$	$r(2)$
1. AP	3.254	1.136	-.183	-.942	.921 (.923)	-	-
2. DER	2.864	.898	-.014	-.566	.945 (.947)	.284*	-
3. SMA	3.391	.808	-.311	.129	.812 (.812)	.382*	.479*

AP: Academic Procrastination, DER: Difficulties in Emotion Regulation, SMA: Social Media Addiction, * $p<.01$

Roles of Gender and Age in Study Variables

Independent samples t-test was employed to reveal gender differences, and Pearson's correlation analysis was utilized to demonstrate how age is related to the study variables. These analyses indicated whether these demographic variables are required to be covered in the mediation analysis as covariates.

First, the essential assumptions for the independent samples t-test were satisfied by checking the normality and equality of variances in terms of gender. The skewness and kurtosis values gathered for male and female participants showed that the data were approximately normally distributed as skewness values ranged from $+-.003$ to $+-.379$, while kurtosis values ranged

from $-.245$ to $-.979$. Levene's test also indicated that the variances are equal for academic procrastination ($p > .05$) and DER ($p > .05$), while variances were assumed unequal for social media addiction ($p < .05$). The findings first showed that the difference between females ($M = 2.878$, $SD = .897$) and males ($M = 2.815$, $SD = .906$) was non-significant in terms of their perceptions of DER ($t(316) = .515$, $p > .05$). In the same vein, the difference between females ($M = 3.420$, $SD = .775$) and males ($M = 3.291$, $SD = .914$) for social media addiction was gathered as non-significant ($t(100.675) = 1.079$, $p > .05$). However, a statistically significant mean difference between females ($M = 3.173$, $SD = 1.137$) and males ($M = 3.535$, $SD = 1.094$) was gathered for academic procrastination: ($t(316) = -2.390$, $p < .05$), suggesting that male participants demonstrate more procrastination than females. Based on these findings, gender was added to the mediation analysis as a covariate variable.

Second, the correlations among the participants' ages and the study variables were computed. The findings indicated that there are no significant correlations among their age and perceptions of academic procrastination ($r = .017$, $p > .05$), DER ($r = -.074$, $p > .05$), and social media addiction ($r = -.091$, $p > .05$), which imply the role of age in the study variables is non-significant.

Findings from the Mediation Analysis

Mediation analysis was performed using PROCESS macro (Hayes, 2013) with the inclusion of gender as the covariate. The direct (β , c') and total (c) effects of DER and social media addiction (β) on procrastination were shown in the figure below (see Figure 2). In addition to these effects, the unstandardized and standardized effects on academic procrastination were shown in Table 2.

The findings first demonstrated the direct effects of DER on social media addiction levels and academic procrastination of the pre-service teachers (see Figure 2 and Table 2). The direct effect of DER on pre-service teachers' social media addiction levels ($\beta = .430$, $p < .001$, $CI = [1.932, 2.639]$) was positive and significant, suggesting that the participants with increasing levels of DER are likely to demonstrate more addictive behaviors in social media usage. Likewise, the effect of social media addiction on pre-service teachers' procrastination behaviors ($\beta = .464$, $p < .001$, $CI = [.303, .624]$) was also positive and significant, implying that the pre-service teachers demonstrating more addictive behaviors in their social media usage are likely to demonstrate more procrastination in their academic tasks.

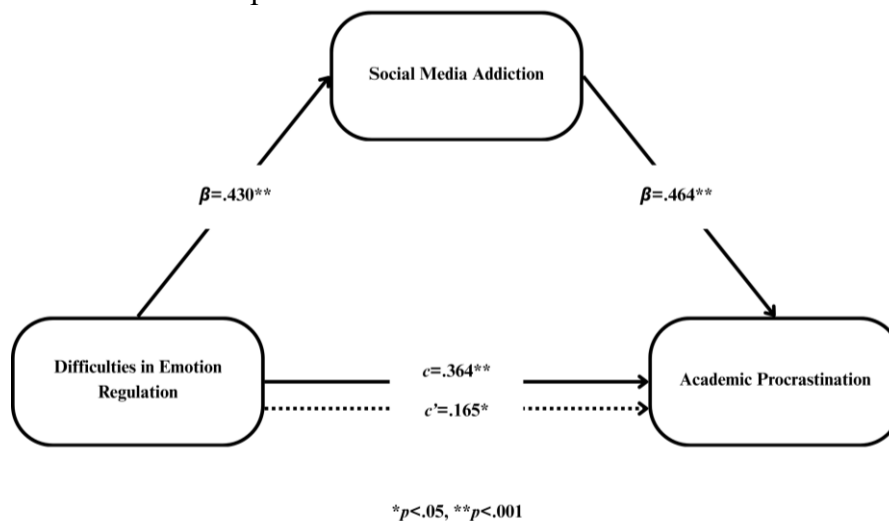


Figure 2. Direct and Total Effects Obtained from the Mediation Analysis

The total effect of DER on pre-service teachers' academic procrastination behaviors ($c=.364$, $p<.001$, $CI=[.231, .497]$) is also positive and significant, which means that the pre-service teachers experiencing more DER tend to experience more academic procrastination. After including social media addiction as a mediator variable, the effect of DER on academic procrastination ($c'=.165$, $p<.05$, $CI=[.303, .624]$) decreased but remained significant, suggesting partial mediation and that DER still predicts pre-service teachers' academic procrastination even after including the mediator variable, social media addiction.

The significance of the mediation effect of social media addiction in DER-academic procrastination link was tested through 95% bootstrap confidence intervals. Both unstandardized ($\beta=.199$, $SE=.047$, $CI=[.110, .297]$) and standardized ($\beta=.158$, $SE=.037$, $CI=[.088, .233]$) indirect effects of DER on pre-service teachers' academic procrastination were observed as significant and positive, suggesting that pre-service teachers' social media addiction levels are a substantial mediator in this link. In conclusion, social media addiction partially mediates DER-academic procrastination link among pre-service teachers, suggesting that DER significantly predicts their procrastination behaviors, but this prediction is partially observed through social media addiction.

Table 2. Significance of the effects Obtained from the Mediation Analysis

Model	β	Lower CI	Upper CI
DER-SMA	.430**	1.932	2.639
SMA-AP	.464**	.303	.624
DER-AP (c)	.364**	.231	.497
DER-AP (c')	.165*	.020	.309
Unstandardized Indirect Effect: DER-SMA-AP	.199*	.110	.297
Standardized Indirect Effect: DER-SMA-AP	.158*	.088	.233

*CI: Confidence Interval, ** $p<.001$, * $p<.05$ and/or 95% CIs do not contain zero, DER=Difficulties in Emotion Regulation, SMA=Social Media Addiction, AP=Academic Procrastination,*

Discussion, Conclusion, and Recommendations

The objective of the present research study was to illustrate the role of DER in pre-service teachers' academic procrastination, through the mediation of their social media addiction levels. Based on this aim, several hypotheses through a mediation model were tested with the inclusion of gender as the covariate variable, given the observed significant difference between females and males in academic procrastination.

The findings first revealed that DER among pre-service teachers is an antecedent of their procrastination in academic tasks. This finding implies that pre-service teachers demonstrate more academic procrastination as they experience more DER. In conjunction with this finding, the similar studies conducted with university students (Bytamar et al., 2020; Duru et al., 2024; Rad et al., 2025) indicated DER as a positive predictor of academic procrastination. Likewise, the intervention studies demonstrated that improvement of emotion regulation skills leads to a decreased level of academic procrastination among university (Schuenemann et al., 2022) and high school students (Baradaran & Noushari, 2022; Joghataei et al., 2022). The

reason behind this association is likely that, as academic tasks would trigger aversive emotions, pre-service teachers might be led to academic procrastination to avoid them if they have inadequate emotion regulation skills. Therefore, these findings suggest that improvement of emotion regulation skills among students, including pre-service teachers, will potentially decrease academic procrastination. For this reason, the interventions on emotion regulation in teacher training programs are highly required to prevent academic procrastination and, consequently, to improve academic achievement.

The findings second showed that DER among pre-service teachers are a significant and positive predictor of their social media addiction, suggesting that pre-service teachers demonstrate more overdependence on or excessive use of social media platforms or applications as they experience DER. Consistent findings were gathered for university students (Elkin et al., 2025; Nazlıgül et al., 2022), adolescents (Giordano et al., 2023), and young adults (Quaglieri et al., 2022). Likewise, negative association of emotion regulation skills with social media addiction was also reported in several studies with adolescents (Peker & Nebioglu Yildiz, 2022) and the general population with female participants (Alenezi et al., 2023). The findings revealed by the present research study and the literature in this regard imply that pre-service teachers, like other populations, spend excessive time on social media platforms as a coping strategy for unpleasant emotions such as loneliness, sadness and anger, unless they have adequate emotion regulation skills. It can be, therefore, concluded that the interventions in teacher training programs for the aim of improving emotion regulation skills have the potential to decrease addictive symptoms for social media platforms or applications.

The findings also indicated that the social media addiction level of the pre-service teachers is a significant and positive predictor of academic procrastination behaviors, suggesting that they demonstrate more procrastination behaviors as they are more addicted to using social media apps or platforms. In line with the present research study, the relevant literature presents consistent findings, demonstrating the significant social media addiction-procrastination relationship among higher education students (Kurker & Surucu, 2024; Pekpazar et al., 2021; Sadiq et al., 2025; Serrano et al., 2022), high school students (Caratiquit & Caratiquit, 2023; Khalifa, 2021), and middle school students (Üztemur & Dinç, 2023). A similar study conducted with pre-service teachers (Ersoy & Arseven, 2021) also documented social media addiction-procrastination behaviors in academic tasks link among them. The reason behind this association would be the negative influences of their social media addiction levels on their self-esteem, given the negative associations between them (Khan et al., 2021), which is required to reduce academic procrastination (Zhang et al., 2018). Besides, academic procrastination might also cause negative emotions leading to excessive social media use, which imply a reciprocal relationship. It can be consequently concluded that the interventions targeting mitigation of social media addiction is likely to be an effective way of decreasing academic procrastination among pre-service teachers and thereby increasing their achievement.

The findings of the current research study finally demonstrated that social media addiction partially mediates DER-academic procrastination link based on the data from the pre-service teachers. This finding means that DER leads to increased levels of addiction among pre-service teachers, which in turn leads to increased levels of procrastination. The relevant intervention studies showed that enhancement of students' emotion regulation skills decreases not only their academic procrastination but also diminishes other negative factors that might be influential on their academic success or well-being such as risky behaviors and fear of success (Joghataei et al., 2022) and improves positive factors like cognitive flexibility

(Baradaran & Noushari, 2022). These findings and the relevant literature imply that pre-service teachers may excessively use social media to cope with negative or aversive emotions such as sadness, anger, or anxiety, which in turn causes academic procrastination if they are not competent enough in regulating these emotions. Therefore, the interventions aiming to improve pre-service teachers' emotion regulation skills are required to be integrated into teacher training programs to enhance both their well-being through the mitigation of addictive behaviors like social media addiction, and enhancement of academic achievement through the mitigation of their academic procrastination.

The current research study has several limitations that should be taken into consideration, which offer recommendations for further studies. First, the participants of the current study were selected based on convenience sampling and limited to the higher education students studying in the programs on teacher training within a single higher education institution. The generalizability of the tested model and hypotheses depends on the replication studies with diverse pre-service teacher groups from multiple universities and diverse cultural contexts. Besides, most of the participants were female in this associational study. Future studies with participants balanced according to population characteristics in terms of gender are required for generalizability. Furthermore, as this study is an associational study in nature, further intervention and longitudinal research studies are essential to adequately establish the cause-and-effect relationships between the variables addressed in the current research study. The possible reciprocal relationships between the covered variables in the present research study such as social media addiction-procrastination or emotion regulation difficulties-procrastination relationships can be further examined and revealed with the participation of pre-service teachers. Finally, further qualitative studies would have the potential to shed light on how emotion regulation skills function in social media addiction and academic procrastination behaviors by considering the contextual factors specific to teacher training.

Declarations

Acknowledgments:

Funding: No funding was obtained for this study.

Ethics Statements: Ethical approval for this study was provided by the Social Sciences Ethics Committee within the researcher's university

Conflict of Interest: The author declares no conflict of interest.

Informed Consent: An informed consent form was obtained from each participant

Data availability: The data used in this study are not publicly available due to ethical restrictions but can be individually provided on a reasonable request.

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