Analysis of Relationships among Burnout, Academic Achievement, and Self-regulation

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Abstract

This study examined the relationships among burnout, academic achievement, and self-regulation with two structural models. The participants were 383 undergraduates with different majors in a university in the western part of Turkey. The results showed that academic achievement was negatively associated with three dimensions of burnout and was positively associated with self-regulation. The results also confirmed that cynicism fully mediated the effect of emotional exhaustion on academic achievement and reduced academic efficacy; academic achievement partially mediated the effect of cynicism on reduced academic efficacy. In addition, analysis revealed that self-regulation partially mediated the effect of emotional exhaustion on cynicism and fully mediated reduced academic efficacy and academic achievement. These findings suggest that self-regulation skills had mediating role relationship between burnout and academic achievement. Implications of these findings are discussed in detail.

Keywords

Academic Achievement, Burnout, Self-Regulation, University Students.

Beginning with the industrial revolution and greatly accelerating in the last quarter of the twentieth century, widespread technological innovations have very strongly impacted people's lifestyles (Tolan, 1981). As a result of technological developments and the increased circulation of knowledge on communal, economic, social and cultural life, the expectations and demands of an individual's community and individuals' expectations of their communities have both varied and increased dramatically. While modern life offers opportunities to grow, change, and develop, on the other hand, individuals are expected to adapt to their environment based on changing and varying roles. Therefore, because of both increasing expectations and demands, individuals often feel weak, tired, unsuccessful, and burned out, and so a growing number of people with burnout problems have become subjects of research.

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The concept of burnout was first used by Freudenberger to define healthcare professionals' experience of intense tiredness and frustration that caused them to quit the profession (Kaçmaz, 2005). Later, Maslach and Jackson (1981) conceptualized burnout as emotional exhaustion, depersonalization, and poor personal accomplishment in a three-dimensional structure, initially considered only a work-related concept. The emotional exhaustion dimension is described as feelings of busyness, tiredness, exhaustion, and overload. The depersonalization dimension refers to negative, rigid, and/or unemotional attitudes and behaviors of a person against others in the interaction (Gündüz, 2005; Kaçmaz, 2005). The third dimension, poor personal accomplishment or low personal efficacy, relates to negative personal evaluation of oneself as unsuccessful, insufficient, and powerless when dealing with problems.

Burnout–Academic Achievement

Although in recent years, burnout has been conceptualized to result from professional exertion and to be a work-related phenomenon, research reveals it to be very common among college students (Balogun, Pellegrini, Miller, & Katz, 1999; Cushman & West, 2006; Hu & Schaufeli, 2009; Jacobs & Dodd, 2003; Jia, Rowlinson, Kvan, Lingard, & Yip, 2009; Salmela-Aro, Tolvanen, Erik-Nuirmi, 2009; Santen, Holt, Kemp, & Hemphill, 2010; Schaufeli & Salanova, 2007; Schaufeli, Salanova, Gonzales-Roma, & Bakker, 2002; Schorn & Buchwald, 2007; Yang, 2004). Students' burnout is defined as "feeling exhausted because of study demands (exhaustion), having a cynical and detached attitude towards one's schoolwork (cynicism), and feeling incompetent as a student (reduced efficacy also known reduced academic efficacy)" by Schaufeli, Martínez, Marqués-Pinto, Salanova, and Bakker (2002, p. 465). Yang (2004) emphasized that manifestations of burnout are similar to that experienced by service professionals. As seen in the studies cited, burnout is not only a variable affecting interpersonal processes but also a variable that negatively affects students during their academic life. The students' burnout may lead to absence from classes, poor motivation for completing coursework, and dropping out of school (Meier & Shmeck, 1985; Ramist, 1981 as cited in Yang, 2004, p. 287). In consequence, the burnout experienced among students and their unwillingness to complete schoolwork may negatively affect their academic performance

and achievement. Indeed, the research on the relationship between the students' burnout level and their academic performance has reported that the students' burnout has a negative effect on academic achievement (Caballero, Cecilia, Abello, & Palacio, 2007; Etzion & Zvi, 2004; Garden, 1991; Jacobs & Dodd, 2003; McCarthy, Pretty, & Catano, 1990; Schaufeli, Martínez et al., 2002; Yang, 2004). The studies show that burnout also correlates with ineffective study strategies, worries about scores, (Boudreau, Santen, Hemphill, & Dobson, 2004), ineffective academic struggles (Durán, Extremera, Rey, Fernández-Berrocal, & Montalbán, 2006; Salmela-Aro et al., 2009; Uludag & Yaratan, 2010; Zhang, Gan, & Cham, 2007), and perceived workload (Jacobs & Dodd, 2003; Yang & Farn, 2004). In light of this background, the negative and unwanted consequences of burnout clearly lead to an academic life that is complex and difficult to control, meanwhile negatively affecting the students' quality of life.

Relationship between Burnout and Self-Regulation

"Self-regulation is defined as the exercise of influence over one's own motivation, thought processes, emotional states and patterns of behavior" by Bandura (1977, as cited in Senemoğlu, 2013, p. 235). Similarly to Bandura; Boekaerts, Pintrich, and Zeidner (2000) define self-regulation as individuals' aims that regulate their emotions, thoughts, and behaviors in order to reach those aims. A common feature emphasized in both definitions is that individuals can manage and control their emotions, thoughts, and behaviors in order to deal with difficult situations and conditions.

Bandura (1986) suggested that individual performance standards that are set too high might be a source of unhappiness. Similarly in the literature, burnout relates positively to high personal expectations, low control level, and low motivation. For example, Tümkaya (1996) indicated that burnout happens due to high discrepancy between an individual's unrealistic and realistic expectations. Besides, Edelwich and Brodsky (1980) state that burnout happens when an individual's high expectations result in disappointment. Aims that are too high and inconsistent with personal potential can be disappointing. If after evaluating himself, an individual realizes that he has not reached his performance standards, he may feel himself to be powerless and worthless. For example,

numerous research studies have revealed that the personal accomplishment dimension of burnout positively relates to emotional regulation, while the emotional exhaustion and depersonalization dimensions of burnout negatively relate to emotional regulation (Brackett, Palomera, Mosja, Reyes, & Salovey, 2010; Celik, Tabak, Pasa Uysal, Sıgrı, & Turunc, 2010). In other words, as the level of emotional self-regulation increases, the level of personal sufficiency increases. But, as the level of emotional self-regulation decreases, the level of emotional burnout and depersonalization increases. In other words, students with high self-regulation skills are able to recover from the negative effects and demands of a given situation by regulating their personal expectations according to situational and social demands. A literature review demonstrates that individuals with high self-regulation skills are more successful at school or at work and have better psychological health when compared to those who have low self-regulation skills (Baumeister & Vohs, 2007). Individuals who can regulate their behaviors, emotions, and thoughts according to their priorities and needs, and thus have a high level of self-regulation, are mostly aware of their own standards and measures. They can gauge good performance in a realistic way. In contrast, individuals with low self-regulation levels are not able to restructure their expectations according to real social and situational demands, and therefore, they may be disappointed when faced with difficulties and obstructions. They may become less hopeful, or they may lose interest, exhibiting withdrawal from academic processes. These experiences may negatively affect students' interest in academic studies and thus lead to cynicism; they might feel weak and insufficient because of low academic performance.

The Relationship Between Self-Regulation and Academic Performance

Numerous research studies have reported that using self-regulation strategies at almost all stages of education positively affects academic performance (Bembenutty & Zimmerman, 2003; Cantwell, 1998; Eom & Reiser, 2000; Nota, Soresi, & Zimmerman, 2004; Pintrich & De Groot, 1990; Trainin & Swanson, 2005; Üredi & Üredi, 2005). Similarly, Pitrinch and Garcia (1994) indicated that students who could regulate their behaviors were more successful than those who could not do so effectively. In their study, Eom and Reiser (2000) reported that students who had higher level of self-regulation skills were better at computer-based courses than students who had lower levels. Üredi and Üredi (2005) reported that self-regulation strategies and motivational beliefs could predict success in mathematics. Cantwell (1998) found that high self-regulation skills correlated positively with academic success; conversely, low self-regulation skills correlated with low academic success. A study by Nota et al. (2004) found that self-regulation predicted academic success. Lastly, Bembenutty and Zimmerman (2003) emphasized a causal relationship between self-regulation and academic achievement. All these studies lead to the conclusion that if the students who have high self-regulation skills can control their learning behaviors and if they can re-regulate these behaviors according to different learning situations, their academic performances are affected positively.

As indicated above, burnout happens in gradual steps: emotional burnout, cynicism, and then low personal accomplishment. In addition, student burnout relates to the components of self-regulation skills, such as personal expectations, personal control level, and regulation of emotions, thoughts, and motivational behaviors. So now, we can ask: What are the direct and indirect roles of self-regulation in relation to burnout and academic achievement? The answer may serve as a basis for intervention programs to reduce students' burnout levels and improve their academic efficacy and academic achievement within the school setting.

Purpose of the Study

By creating two theoretical structural equation models (SEMs), this study tested the relationship among emotional exhaustion, cynicism, reduced academic efficacy, self-regulation, and academic achievement. Additionally, a further benefit is the use of the structural equation model to investigate relationships among burnout, academic achievement, and self-regulation. In the first model, the relationship among emotional exhaustion, cynicism, academic success, and reduced academic efficacy was tested; in the second model, the relationship among these variables was tested by adding self-regulation. Predicted relationships of the structural models are shown in Figures 1 and 2.

In the first model, as Freudenberger (1974) and Edelwich and Brodsky (1980) emphasized, if burnout occurs as a result of an inter-relatedness among emotional exhaustion, cynicism, and reduced academic efficacy, it can be concluded that, first,
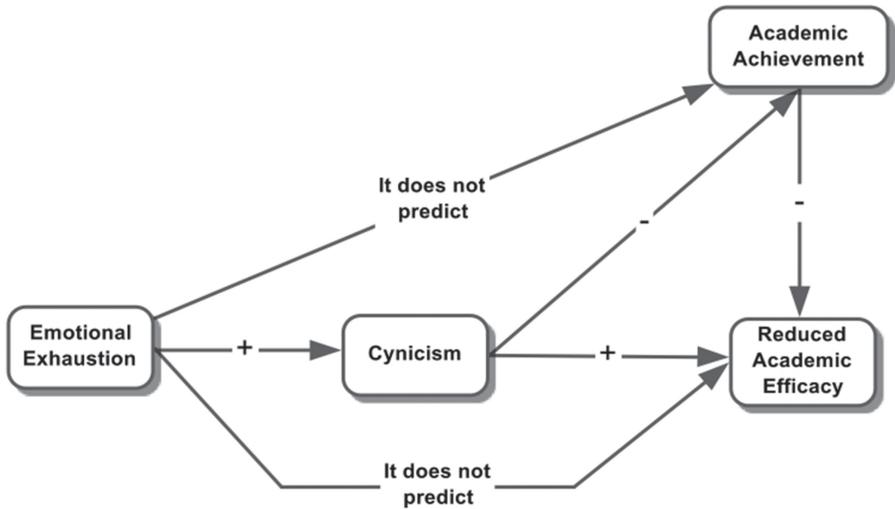
Figure 1

The Relationships among Emotional Exhaustion, Cynicism, Reduced Academic Efficacy, and Academic Achievement

emotional exhaustion, then cynicism, and last, reduced academic efficacy appear. In other words, emotional exhaustion predicts cynicism, and subsequently cynicism predicts reduced academic efficacy. Second, if individuals think they do not have enough resources and energy for the struggle because of increasing cynicism as a function of emotional exhaustion, they will be less interested in academic processes; therefore they might feel themselves insufficient in academic life, and their academic achievement might decline. In other words, a high level of emotional exhaustion does not directly predict academic achievement and reduced academic efficacy; however, it predicts these variables as a means of mediation of cynicism. Third, if the cynicism level reduces interest and attendance to academic processes, the individual's academic achievement also decreases. Therefore, reduced academic success causes the individual to feel insufficient. In other words, academic success is expected to mediate the relationship between reduced academic efficacy and cynicism.
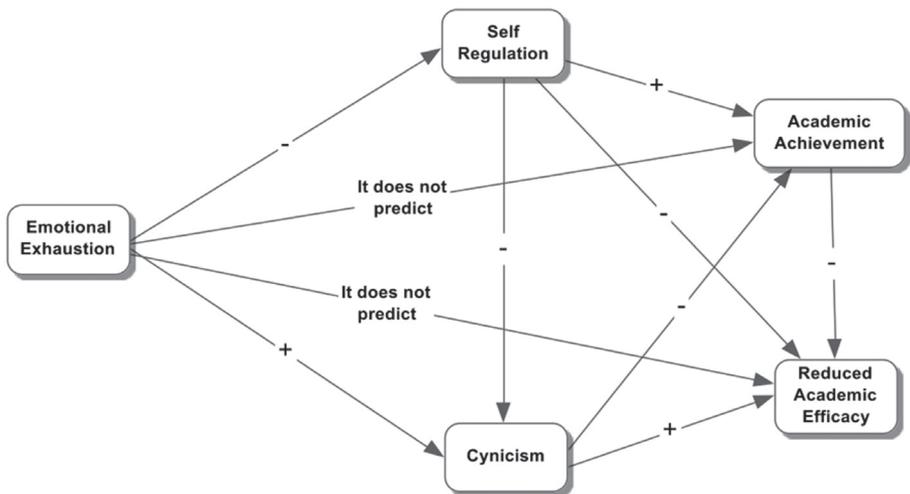

Figure 2

The Mediating Role of Self-Regulation in relation to Burnout and Academic Achievement

In the second model, if individuals feel lacking in power, resources, motivation, and energy to deal with new situations, their academic achievement declines due to emotional exhaustion. They consider themselves less capable, depending on decreasing academic performance. Individuals can be helped to develop self-regulation skills, and thus, not only deal with new situations more effectively but also reduce the effect of cynicism on academic success and academic efficacy, and attain higher levels of academic success and feelings of sufficiency.

Therefore, the following hypotheses were tested. In the *first model*: 1) Students' emotional exhaustion levels would predict their cynicism levels, 2) students' emotional exhaustion levels would predict their academic achievement and reduced academic efficacy levels by mediation of their cynicism levels; 3) students' cynicism levels would predict their academic achievement and reduced academic efficacy levels; and 4) students' cynicism levels would predict their low academic efficacy levels by mediation of their academic achievement. In the *second model*: 5) students' self-regulation skills would mediate the relationships among emotional exhaustion, cynicism, academic achievement, and reduced academic efficacy.

Method

Participants

The sample included 383 undergraduate students (60.6% women, 39.4% men; age 18 to 24 years ($M = 21.05$, $SD = 1.55$) from a university in the western part of Turkey. Participants included 9.6% freshmen, 42.6% sophomores, 24.8% juniors, and 23% seniors.

Measures

The Maslach Burnout Inventory-Student Survey (MBSS), the Self-regulation Scale (SRS), and a demographics information sheet including personal information, such as gender and age, were used to gather the data.

Maslach Burnout Inventory-Student Survey (MBI-SS): The scale, designed to measure burnout levels of students, contains 15 items that evaluate the dimensions of Emotional Exhaustion (5 items), Cynicism (4 items), and Academic Efficacy (6 items). Students specify their agreement on each item, scored on a 7-point Likert response scale from 1 (never) to 7 (always). High scores on Exhaustion and Cynicism dimensions and low

perception of Academic Efficacy are indexes of burnout (Schaufeli, Martínez et al., 2002). The reported adequate internal consistencies (α) for each measure of this study were as follows: .80 for emotional exhaustion, .86 for cynicism, and .67 for academic efficacy. Balkıs, Duru, Buluş, and Duru (2011) examined psychometric characteristics of MBI-SS for a Turkish population. They reported that the total percentage variance explained by the three-factor solution was 55.3% with emotional exhaustion, cynicism, and reduced academic efficacy accounting for 31.08%, 14.79%, and 9.42% of variance, respectively. The internal consistency coefficient alpha was .83 for emotional exhaustion, .80 for cynicism, .70 for academic efficacy, and .83 for the total scale in the Turkish sample.

Self-Regulation Scale (SRS): The SRS is a nine-item, self-report measure of self-regulation (Tuckman, 2002). Participants indicate the extent to which they believe statements such as "I create and reach my goals." The statements are rated on a 4-point Likert scale, with response options of "never," "sometimes," "frequently," and "always." Tuckman (2002) reported the measure's adequate internal consistency with a coefficient alpha of .88. Duru, Balkıs, Buluş, and Duru (2009) also examined psychometric characteristics of SRS for a Turkish population. Duru et al. (2009) reported that the SRS had one factor accounting for 36.60% of the variance (eigenvalue = 2.90). Alpha was .73 for this population.

Academic Achievement: GPA represented the academic achievement that the students had achieved by the semester prior to completing the questionnaire.

Data Analyses

The proposed theoretical models (Figures 1 and 2) were tested via observed variable path analysis using maximum likelihood parameter estimation with AMOS 7.0 (Arbuckle, 2006).

Results

Relationships among Students' Burnout, Self-Regulation, and Academic Achievement

Descriptive statistics and bivariate zero-order correlations were conducted between the variables. The results from correlation analyses showed statistically significant correlations between burnout scores, self-regulation scores, and reported academic achievement. All dimensions of student

Table 1
Descriptive Statistics and Correlation Analyses

	M	SD	1	2	3	4	5
1. Emotional Exhaustion	17.70	6.96	-	.564***	.283***	−.362***	−.173**
2. Cynicism	13.45	6.09		-	.425***	−.500***	−.250***
3. Reduced Academic Efficacy	15.17	5.30			-	−.446***	−.286***
4. Self-Regulation	24.88	3.87				-	.361***
5. Academic Achievement	2.46	.40					-

**$p < .01$, ***$p < .001$

burnout (emotional exhaustion, cynicism, and reduced academic efficacy) were positively correlated with each other and were negatively correlated with reported academic achievement and self-regulation (Table 1).

Structural Equation Model (SEM)

To test the adequacy of model 1, SEM was employed using AMOS.7 (Arbuckle, 2006; Kline, 2005). The results indicate that the model was accepted as adequate: X^2 (1, N = 383) = 1 and p > .321. Furthermore, the X^2 ratio was below the suggested 2:1 ratio (X^2/df = 1). GFI = 1, AGFI = .99, RMSEA = .00 (00; 135), SRMR = .012, CFI = 1, TLI = 1, IFI = 1, NFI = .99 (Kline, 2005). The result of the path analysis is presented in Figure 3. The results show that emotional exhaustion directly predicts cynicism (β= .56, p < .001). In other words, students with a high level of emotional exhaustion are more likely to be cynical.

The emotional exhaustion predicted academic achievement indirectly through cynicism (β = −.22, p < .001). Bias-corrected confidence intervals further supported a significant indirect effect of emotional exhaustion on academic achievement via cynicism (Standardized indirect effect = −.126, p < .01, 95% CI: −.203 to −. 049). Furthermore, emotional exhaustion predicted reduced academic efficacy by mediation of cynicism (β = .38, p < .001). Bias-corrected confidence intervals further supported a significant indirect effect of emotional exhaustion on reduced academic efficacy via cynicism (Standardized indirect effect = .246, p < .001, 95% CI: .184 to .307). Cynicism directly predicted academic achievement (β = −.22, p < .001), directly predicted reduced academic efficacy (β = .38, p < .001), and by mediation of academic achievement (β = −.19, p < .001). Bias-corrected confidence intervals further supported a significant indirect effect of cynicism on reduced academic efficacy via academic achievement (Standardized indirect effect = .043, p <
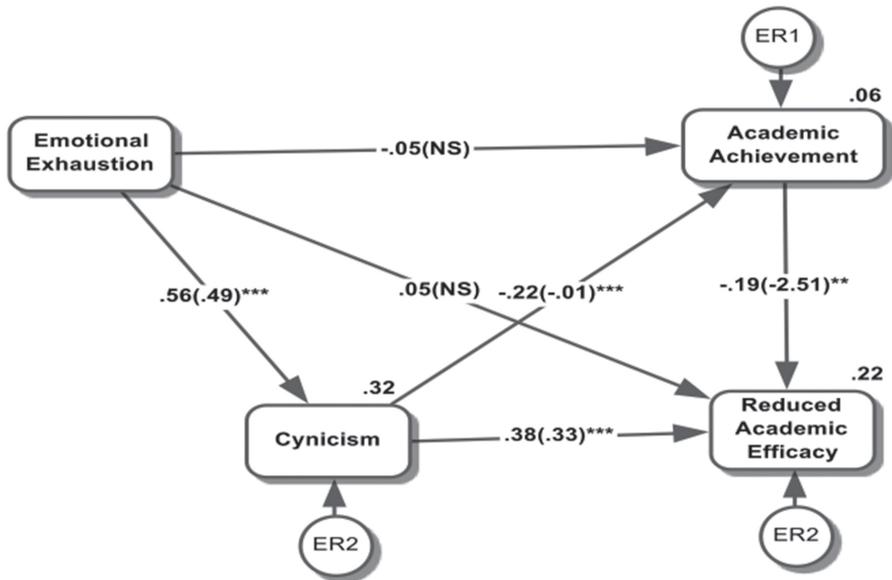

Figure 3
Burnout Cycle for Students

.001, 95% CI: .013 to .085). Academic achievement partially mediated relationships between cynicism and reduced academic efficacy. Emotional exhaustion accounted for 32% of the variance in cynicism. Emotional exhaustion and cynicism accounted for 6% of the variance in academic achievement. Collectively, emotional exhaustion, cynicism, and academic achievement accounted for 22% of the variance in reduced academic efficacy.

The Mediation Role of Self-Regulation

To test the mediation role of self-regulation (Model 2), SEM was employed using AMOS.7 software (Arbuckle, 2006). The results indicated that the model was adequate: X^2 (3, N = 384) = 3.062 and p > .382. Furthermore, the X^2 ratio was below the suggested 2:1 ratio (X^2/df = 1.021). GFI = 1, AGFI = .98, RMSEA = .007 (000; 087), SRMR = .022, CFI = 1, TLI = 1, IFI = 1, NFI = .99. Analysis revealed that self-regulation mediated relationships between emotional exhaustion, cynicism, reduced academic efficacy, and academic achievement. The result showed that emotional exhaustion directly predicted cynicism (β = .44, p < .001), and by mediation of self-regulation (β = −.34, p < .001), it also directly predicted self-regulation (β = −.34, p < .001). Bias-corrected confidence intervals further supported a significant indirect effect of

emotional exhaustion on cynicism via self-regulation (Standardized indirect effect = .123, p < .001, 95% CI: .085 to .176). Self-regulation partially mediated the relationships between emotional exhaustion and cynicism. Emotional exhaustion predicted reduced academic efficacy by mediation of self-regulation (β = −.27, p < .001) and by mediation of cynicism (β = .26, p < .001). Bias-corrected confidence intervals further supported a significant indirect effect of emotional exhaustion on reduced academic efficacy via self-regulation and cynicism (Standardized indirect effect = .261, p < .001, 95% CI: .201 to .324). The self-regulation and cynicism constructs fully mediated the relationships between emotional exhaustion and reduced academic efficacy. Emotional exhaustion predicted academic achievement by mediation of self-regulation (β = .36, p < .001). Bias-corrected confidence intervals further supported a significant indirect effect of emotional exhaustion on academic achievement via self-regulation (Standardized indirect effect= −.131, p < .001, 95% CI: −.184 to −.089). Self-regulation fully mediated the relationship between emotional exhaustion and academic achievement. Cynicism predicted reduced academic efficacy (β = .26, p < .001). Self-regulation also predicted reduced academic efficacy directly (β = −.27, p < .001), by mediation of cynicism (β = .26, p < .001), and by mediation of academic achievement (β = −.12, p < .01).
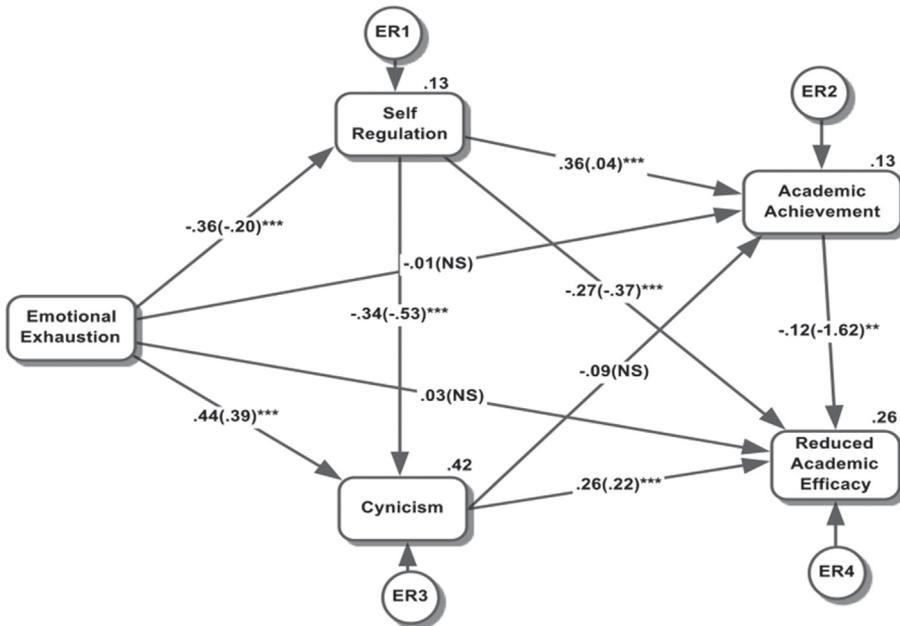

Figure 4
The Mediation Role of Self-Regulation

Bias-corrected confidence intervals further supported a significant indirect effect of self-regulation on reduced academic efficacy via academic achievement and cynicism (Standardized indirect effect = −.133, $p < .001$, 95% CI: −.183 to −.084). Finally, academic achievement predicted reduced academic efficacy ($\beta = −.12$, $p < .01$). Emotional exhaustion accounted for 13% of the variance in self-regulation. Emotional exhaustion and self-regulation accounted for 42% the variance in cynicism. Collectively, emotional exhaustion, cynicism, self-regulation, and academic achievement accounted for 26% of the variance in reduced academic efficacy. Emotional exhaustion, cynicism, and self-regulation accounted for 13% of the variance in academic achievement.

Discussion

This study proposed to test the relationship among emotional exhaustion, cynicism, reduced academic efficacy, self-regulation, and academic achievement by using two structural models. In the first model, the analysis confirmed that higher emotional exhaustion levels related to higher cynicism levels. Similarly, higher cynicism levels not only directly estimated lower academic achievement and reduced academic efficacy but also played a mediating role between emotional exhaustion–academic achievement and emotional exhaustion–reduced academic efficacy. In the second model, the analyses demonstrated that self-regulation skills mediated the relationships between emotional exhaustion, cynicism, academic achievement, and reduced academic efficacy. In light of these findings, self-regulation skills played both a direct and indirect role in the relationship between burnout and academic achievement.

The study results supported *H1*, confirming that higher emotional exhaustion related to higher cynicism level. This finding suggested that the students reporting higher emotional exhaustion also reported higher cynicism. This also confirmed previous research findings and theoretical explanations (Edelwich & Brodsky, 1980; Freudenberger, 1974). Emotional exhaustion refers to feeling busy, tired, overloaded, and burned out to the detriment of academic duties and responsibilities (Kaçmaz, 2005). Thus, individuals who consider themselves as lacking in resources and energy might be expected to manifest withdrawal, indifference, and apathy toward academic responsibilities.

The study results also supported *H*2, which affirmed that the students' emotional exhaustion levels would predict their academic achievement and academic

efficacy levels through the mediation of cynicism. The analyses show that emotional exhaustion predicted academic achievement and reduced academic efficacy through the mediation of cynicism. These findings confirmed the theoretical explanations on burnout as characterized by Edelwich and Brodsky (1980) and Freudenberger (1974). According to these writers, if the students realize that they do not have enough power, resources, and energy to deal with academic expectations stemming from new roles and responsibilities, they may become frustrated, indifferent, or less wishful when participating in academic processes, and therefore, withdraw from them. Thus, indifference, apathy, and exhaustion might negatively affect students' performance and academic success in meeting academic responsibilities and expectations. Based on decreasing academic performance and success, students may feel less capable, less successful, and more tired. These findings confirmed the results of previous studies that reported burnout related negatively to academic achievement (Caballero et al., 2007; Garden, 1991; Jacobs & Dodd, 2003; McCarthy et al., 1990; Schaufeli, Martínez et al., 2002; Yang, 2004). In addition, the present study also revealed that cynicism and apathy, as components of burnout, were more effective indicators of academic achievement and academic efficacy than emotional exhaustion.

The third hypothesis of our study was that students' cynicism levels would predict their academic achievement and reduced academic efficacy. The hypothesis was deduced based on the idea that if the students' cynicism level has a mediating role relationship between emotional exhaustion–academic achievement and emotional exhaustion–reduced academic efficacy, the role might be direct. In line with this expectation, our analysis showed that higher cynicism levels related with lower academic achievement and reduced academic efficacy levels. Schaufeli, Martínez et al. (2002) defined cynicism as students' indifference and apathy towards schoolwork, duties, and responsibilities. Previous studies have shown that burnout was related to inefficient study strategies (Boudreau et al., 2004) and inefficient academic studies (Durán et al., 2006; Salmela-Aro et al., 2009; Uludag & Yaratan, 2010; Zhang et al., 2007). Thus, indifferent individuals who display apathy toward schoolwork will likely have lower motivation and thus will report low academic achievement. Similarly, individuals who feel insufficient in dealing with academic-processes problems and who have low academic achievement may be expected to consider themselves as less capable, less successful, and more powerless.

The fourth hypothesis was that cynicism levels would predict reduced academic efficacy by mediation of academic achievement. In line with this expectation, the analyses confirmed that academic achievement partly mediated the relationship between cynicism and reduced academic efficacy. This finding suggests that students might have the perception of reduced academic efficacy due not only to their cynical attitude but also to low academic achievement. As Bandura (1986) emphasized, this finding makes sense when we consider that efficacy perception relates to individuals' cognitive attributions, to some extent, and is caused by their actions. Because of apathy and indifference toward academic studies, individuals who cannot meet their efficacy need through academic studies might be expected to feel insufficient, unsuccessful, and weak at higher levels when they also cannot meet this need because of low academic achievement.

The last hypothesis of our study was that students' self-regulation skills would mediate the relationships between emotional exhaustion, cynicism, academic achievement, and reduced academic efficacy. Our research finding aligned with previous findings (Brackett et al., 2010; Carver, 2004; Celik et al., 2010; Duru et al., 2009; Lee, 2010), showing that self-regulation mediated the relationships between emotional exhaustion, cynicism, reduced academic efficacy, and academic achievement. This finding is very important in that it demonstrates the key role of self-regulation skills in the relationships between academic achievement, academic efficacy, and burnout. Baumeister and Vohs (2007) indicated that self-regulation skill eases the adaptation of individual actions to conditional and social demands by increasing the action's flexibility. In light of these findings, we conclude that individuals with high self-regulation skills can manage their emotions, thoughts, behaviors, and time more effectively, and use their power and resources more successfully. At the same time, they have less emotional exhaustion, and show less indifference and apathy toward their academic responsibilities. Therefore, they have greater academic achievement and feel more capable.

Implications, Limitations, and Directions for Future Research

This study made two important findings in terms of theory. First, as components of burnout, indifference and apathy (cynicism), rather than emotional exhaustion, are more important variables in the relationships between burnout, academic achievement, and reduced academic efficacy. According to Edelwich and Brosky (1980) burnout is caused progressively, by emotional exhaustion, indifference, and low personal accomplishment. When these theoretical explanations are considered, why emotionally exhausted individuals exhibit indifference and apathy, why they report lower academic achievement, and why they feel insufficient, unsuccessful, and weak are better understood. The key point is that emotional exhaustion is a warning signal for low academic performance and low academic sufficiency. Analysis results show that emotional exhaustion affects academic achievement and academic efficacy not directly, but through the mediation of cynicism. Thus, students with emotional exhaustion may be expected to display apathy and indifference to academic processes; as a result, their academic achievement might decline, and they might feel even more insufficient and unsuccessful due to a lack of energy, power, and resources while dealing with environmental demands.

The study findings have some important implications for higher education personnel including faculty, advisers, and mental health counselors. In the framework of developmental and preventive guidance, clearly, some students might have higher levels of burnout and lower levels of academic performance; thus, they might need help and support in the academic setting. Jacobs and Dodd (2003) pointed out, "When counselors or advisors are faced with a student who appears to be suffering from burnout, it is important to recognize that the student may be experiencing feelings of depersonalization and reduced sense of accomplishment, in addition to emotional exhaustion" (p. 301). Before students feel less successful and less capable based on lower academic success, academic staff and advisers might recognize this warning signal, assume an active role, and implement some caring strategies, such as building close, supportive relationships in the school setting and collaborating with counseling professionals.

Finally, the study should be considered in light of its limitations. The findings and predictions are based on SEM analyses and should be interpreted accordingly. Another limitation relates to the research design: It was cross-sectional. Qualitative research, such as in-depth interviews or a case study, might be helpful in better understanding the relationships between burnout, self-regulation, and academic achievement. In addition, using longitudinal methods, future research could offer other important insights about students with high levels of emotional exhaustion, cynicism, and reduced academic efficacy.

References/Kaynakça

Arbuckle, J. (2006). *Amos 7.0 user's guide*. Amos Development Corporation: Spring House, PA.

Balkıs, M., Duru, E., Buluş, M. ve Duru, S. (2011). Tükenmişliğin öğretmen adayları arasındaki yaygınlığı, demografik değişkenler ve akademik başarı ile ilişkisi. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi, 29*, 151-165.

Balogun, J. A., Pellegrini, E. A., Miller, T. M., & Katz, J. S. (1999). Pattern of physical therapist students' burnout within an academic semester. *Journal of Physical Therapy Education, 13*(1), 12-17.

Bandura, A. (1986). *Social foundations of thought & action: A social cognitive theory.* New Jersey: Prentice Hall.

Baumeister, R. F., & Vohs, K. D. (2007). Self-regulation, ego depletion, and motivation. *Social and Personality Psychology Compass, 1*, 1-14.

Bembenutty, H., & Zimmerman, B. J. (2003, April). *The relation of motivational beliefs and self regulatory processes to homework completion and academic achievement.* Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.

Boekaerts, M., Pintrich, P. R., & Zeidner, M. (Eds.). (2000). *Handbook of self-regulation.* San Diego: Academic Press.

Boudreau, D., Santen, S. A., Hemphill, R. R., & Dobson J. (2004). Burnout in medical students: Examining the prevalence and predisposing factors during the four years of medical school. *Annals of Emergency Medicine, 44*(4), 75-76.

Brackett, M. A., Palomera, R., Mojsa, J., Reyes, M., & Salovey, P. (2010). Emotion regulation ability, job satisfaction, and burnout among British secondary school teachers. *Psychology in the Schools, 47*, 406-417.

Caballero, D., Cecilia, C., Abello, L. L, R., & Palacio, S. J. (2007). Relationship between burnout, academic performance, and satisfaction concerning study in College students. *Avances en Psicología Latinoamericana, 25*(2) 98-111.

Cantwell, R. H. (1998). The development of beliefs about learning from mid- to late adolescence. *Educational Psychology, 18*(1), 27-40.

Carver, C. S. (2004). Self-regulation of action and affect. In R. Baumeister & K. Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications* (pp. 130-148). New York: Guilford Press.

Celik, M., Tabak, A., Pasa Uysal, M., Sıgrı, U., & Turunc, O. (2010). The relationship between burnout and emotional labour of the employees in hospital sector. *International Journal of Business and Management Studies, 2*(1), 47-54.

Cushman, S., & West, R. (2006). Precursors to college student burnout: Developing a typology of understanding. *Qualitative Research Reports in Communication, 7*, 23-31

Durán, A., Extremera, N., Rey, L., Fernández-Berrocal, P., & Montalbán, F. M. (2006). Predicting academic burnout and engagement in educational settings: Assessing the incremental validity of perceived emotional intelligence beyond perceived stress and general self-efficacy. *Psicothema, 18*, 158-164.

Duru, E., Balkıs, M., Buluş, M. ve Duru, S. (2009, Ekim). *Öğretmen adaylarında akademik erteleme eğiliminin yordanmasında öz düzenleme, akademik başarı ve demografik değişkenlerin rolü.* 18. Eğitim Bilimleri Kongresi'nde sunulan bildiri, İzmir.

Edelwich, J., & Brodsky, A. (1980). *Burn-out: Stages of disillusionment in the helping professions.* New York: Human Sciences Press.

Eom, Y., & Reiser, R. A. (2000). The effects of self regulation and instructional control on performance and motivation in computer-based instruction. *International Journal of Instructional Media, 27*(3), 247-261.

Etzion, D., & Zvi, Z. (2004, July). *Stress and burnout among students before and after the Passover break – Vacation activities and personality variables as moderators.* Paper presented at the Star 25th. International Conference, Amsterdam. Retrieved from http://recanati.tau.ac.il/_Uploads/Personnel/EtzionVitae.pdf

Freudenberger, H. J. (1974). Staff burnout. *Journal of Social Issue, 30*, 159-165.

Garden, A. M. (1991). Relationship between burnout and performance. *Psychological Reports, 68*, 963-977.

Gündüz, B. (2005). İlköğretim öğretmenlerinde tükenmişlik. *Mersin Üniversitesi Eğitim Fakültesi Dergisi, 1*(1), 152-166.

Hu, Q., & Schaufeli, W. B. (2009). The factorial validity of the Maslach Burnout Inventory- Student Survey in China. *Psychological Report, 105*(2), 394-408.

Jacobs, S., & Dodd, D. (2003). Student burnout as a function of personality, social support, and workload. *Journal of College Students Development, 44*(3), 291-303.

Jia, Y. A., Rowlinson, S. M., Kvan, T., Lingard, H., & Yip, B. (2009). Must burnout end up with dropout? *The Built & Human Environment Review, 2*, 102-111.

Kaçmaz, N. (2005). Tükenmişlik (BURNOUT) sendromu. *İstanbul Tıp Fakültesi Dergisi, 68*, 29-32.

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York: Guilford.

Lee, H. (2010). *The Relationship between emotional intelligence and emotional labour and its effect on job burnout in Korean Organizations* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (Accession Order No. AAT 3396936).

Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Occupational Behaviour, 2*, 99-113.

McCarthy, M., Pretty, G., & Catano, V. (1990). Psychological sense of community and student burnout. *Journal of College Student Development, 31*, 211-216.

Nota, L., Soresi, S., & Zimmerman, B. J. (2004). Self-regulation and academic achievement and resilience: A longitudinal study. *International Journal of Educational Research, 41*, 198-215.

Pintrich, P. R., & De Groot, E. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82*(1), 33-50.

Pintrich, P. R., & Garcia, T. (1994). Self-regulated learning in college students: Knowledge, strategies, and motivation. In P. R. Pintrich, D. R. Brown & C. E. Weinstein (Eds.), *Student motivation, cognition, and learning* (pp. 113-134). Hillsdale, NJ: Lawrence Erlbaum Associates.

Salmela-Aro, K., Tolvanen, A., & Erik-Nuirmi, J. (2009). Achievement strategies during university studies predict early career burnout and engagement. *Journal of Vocational Behavior, 75*(2), 162-172. doi:10.1016/j.jvb.2009.03.009

Santen, S. A., Holt, D. B., Kemp, J. D., & Hemphill, R. R. (2010). Burnout in medical students: Examining the prevalence and associated factors. *Southern Medical Journal, 103*(8), 758-763.

Schaufeli, W. B., Martinez, I., Marques-Pinto, A., Salanova, M., & Bakker, A. (2002). Burnout and engagement in university students. *Journal of Cross-Cultural Psychology, 33*(5), 464-481.

Schaufeli, W. B., & Salanova, M. (2007). Efficacy or inefficacy, that's the question: Burnout and engagement, and their relationships with efficacy beliefs. *Anxiety, Coping and Stress, 20*, 177-196.

Schaufeli, W., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies, 3*, 71-92.

Schorn, N. K., & Buchwald, P. (2007, July). Burnout in Student Teachers. In P. Roussi, E. Vasilaki, K. Kaniasty & J. D. Barker (Eds.), *Electronic Proceedings of the 27th Conference of the STAR Society* (pp. 150-159). Rethymnon: University of Crete. Retrieved from http://www.petra-buchwald.de/Burnout-in-Student-Teachers.pdf

Senemoğlu, N. (2013). *Gelişim, öğrenme ve öğretim kuramdan uygulamaya*. Ankara: Yargı Yayınevi.

Tolan, B. (1981). *Çağdaş toplumun bunalımı anomi ve yabancılaşma* (2. basım). Ankara: İktisadi ve Ticari İlimler Akademisi Yayınları.

Trainin, G., & Swanson, H. L. (2005). Cognition, metacognition, and achievement of college students with learning disabilities. *Learning Disability Quarterly*, *28*(4), 261-272.

Tuckman, B. (2002, August). *Academic procrastinators: Their rationalizations and web-course performance*. Paper presented at the Annual Meeting of the American Psychological Association, Chicago, IL.

Tümkaya, S. (1996). *Öğretmenlerdeki tükenmişlik görülen psikolojik belirtiler ve başa çıkma davranışları* (Doktora tezi, Çukurova Üniversitesi, Sosyal Bilimler Enstitüsü, Adana). https://tez.yok.gov.tr/UlusalTezMerkezi/ adresinden edinilmiştir.

Uludag, O., & Yaratan, H. (2010). The effect of burnout on engagement: An empirical study on tourism students. *Journal of Hospitality, Leisure, Sport, & Tourism Education, 9*(1), 13-23.

Üredi, I. ve Üredi, L. (2005). İlköğretim 8. sınıf öğrencilerinin öz- düzenleme stratejileri ve motivasyonel inançlarının matematik başarısını yordama gücü. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, *1*(2), 250-260.

Yang, H. J. (2004). Factors affecting student burnout and academic achievement in multiple enrollment programs in Taiwan's technical–vocational colleges. *International Journal of Educational Development, 24,* 283-301.

Yang, H. J., & Farn, C. K. (2004). An investigation the factors affecting MIS students burnout in Technical -Vocational College. *Computers in Human Behavior, 21*(6), 917-932.

Zhang, Y., Gan, Y., & Cham, H. (2007). Perfectionism, academic burnout and engagement among Chinese college students: A structural equation modeling analysis. *Personality and Individual Differences, 43*, 1529-1540.