

The Relationship between Self-Efficacy and Attitude of Measurement and Evaluation: Mediating Role of Hope and Life Satisfaction

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Abstract

Education is the foundation of everything. Teachers are the primary builders of quality education. The quality of education is enhanced by preparation before education, coordinated management of the education process, and reliable measurement and evaluation of educational outcomes. In this context, teachers' attitudes towards measurement and evaluation play a significant role in quality education. Cognitive and affective characteristics are crucial factors that influence teachers' or candidates' attitudes toward measurement and evaluation. The present study is unique in its development of a hypothetical model to examine the relationships among self-efficacy, attitude of measurement and evaluation, hope, and satisfaction. The study sample consisted of 534 individuals from Turkey, with 351 women and 183 men aged 18-25. Convenience sampling was used to select the participants, which is a non-probability sampling method that involves selecting participants who are easily accessible to the researcher. In this case, the participants were university students from Turkey who were recruited via Google Forms. Participants completed the Self-Efficacy Scale, the Hope Scale, the Life Satisfaction Scale, and the Attitude of Measurement and Evaluation Scale. Mediation analysis was conducted using Hayes' (2017) process macro. The findings of the study support the proposed model, which suggests that hope and life satisfaction mediate the relationship between self-efficacy and attitude of measurement and evaluation. In other words, as individuals' hope and life satisfaction increase, their self-efficacy and attitude of measurement and evaluation also increase. The conceptual framework presented within this research demonstrates considerable potential as a pioneering approach for academic exploration. This framework may potentially function as an original blueprint for scholars within the discipline. Both professionals and academics can utilize the conclusions drawn from this study to formulate psycho educational interventions with a wellness emphasis, directed at individuals. These interventions aspire to augment the self-efficacy, hope, and life satisfaction of university students.

Keywords: Self Efficacy, Attitude of Measurement and Evaluation, Hope, Life Satisfaction.

In today's world, education is a process that focuses on the individual while also taking into account the expectations of society (Sahin & Atasoy, 2018). The fundamental goal of education systems is to cultivate individuals who respect the values of their society, can communicate effectively with others, adapt easily to existing changes, utilize their resources efficiently, make independent decisions in harmony with themselves and others, and maintain inner peace (Gökyer, 2019). Among the decisive factors actively involved in the healthy implementation of educational activities, in other words, in achieving the objectives through successful education, are teachers and educational programs. The extent to which teachers develop themselves in their respective fields and possess the skills and abilities to convey their knowledge and experience to others significantly impacts their ability to raise students with the desired qualities. The more attention they pay to the implementation phases of pre-prepared educational programs and the more they prioritize it, the better they will educate students (McMillian, 2004; Usta & Uğurlu, 2018).

One of the characteristics teachers need to possess is sufficient knowledge in the area of educational measurement and evaluation. To be competent in educational measurement and evaluation, it is necessary to have a positive attitude toward this field. In this context, the attitudes of prospective teachers, who will become the teachers of the future, towards educational measurement and evaluation are of great importance, especially considering the measurement and evaluation courses they take in universities and the resulting attitudes towards measurement and evaluation (Yaşar, 2014; Maeroff, 1991).

Attitude is a psychological structure consisting of cognitive, affective, and behavioral dimensions, which includes emotional reactions, behaviors, and beliefs directed toward a situation or event (Anderson, 1988; Yaşar, 2014). An individual's thoughts, feelings, and actions towards a particular situation or event constitute their attitude towards it (Yaşar, 2014; Morgan, 1991). These behaviors can manifest positively or negatively and can be observed directly or indirectly (Aiken, 2006; Kağıtçıbaşı, 2010). It represents an individual's mental predisposition towards oneself or the events and individuals in their surroundings. These attitudes exhibited by individuals can change over time or new ones can emerge (İnceoğlu, 2011).

Attitudes towards the measurement and evaluation process, which are of great importance in maintaining the vitality and functionality of educational programs, form positive or negative behaviors regarding measurement and evaluation. When examining past studies, it is evident that teachers or candidates often struggle to fully comprehend the measurement and evaluation process and encounter numerous problems during their university studies or in the schools where they work. The root of this issue has been attributed to the inadequate teaching of necessary knowledge and skills in the field during the teachers' and candidates' undergraduate education (Kilmen & Çıkrıkçı-Demirtaşlı, 2009; Gelbal & Kelecioğlu, 2007).

An individual's self-perception during their undergraduate education, their expectations from life, and their opinions about the course they've taken shape their attitudes towards measurement and evaluation courses, along with their abilities

and inadequacies in this field. In other words, the cognitive and affective characteristics such as self-efficacy, hope, and life satisfaction that an individual possesses, as well as their understanding of the necessity and significance of this process and their expectations from life, all influence their attitudes towards measurement and evaluation.

One of the significant factors that influence teachers' or candidates' attitudes toward measurement and evaluation is their general self-efficacy. According to Bandura (1986), "self-efficacy is the judgment of one's capabilities to organize and execute the courses of action required to produce given attainments" (Gökçyer, 2019). In other words, it's the belief that individuals can exhibit the necessary behavior to achieve the desired outcome in any situation they encounter, based on their judgment of what they can do using their skills and potential (Üstüner, et al., 2009; Kaufman & Sawyer, 2004; Koçak Macun et al., 2019).

Teachers who possess a sense of competency tend to have important qualities such as improving student learning, ensuring successful students, providing quality teaching, developing challenging courses, implementing curriculum innovations, effectively managing classroom issues, and establishing productive collaborations with colleagues and parents (Betoret, 2006; Cho & Shim, 2013; Guo et al., 2012; Miller et al., 2017; Tucker et al., 2005).

Another characteristic that influences teachers' and candidates' attitudes toward measurement and evaluation is hope. Hope is a dynamic force that facilitates an individual's easy adaptation to the future, fosters a positive outlook, helps establish and maintain positive relationships with others, and motivates individuals to move toward or be enthusiastic about their desired goals (Atik & Kemer, 2009; Sarıçam & Akin, 2013). In other words, individuals without hope or with low hope tend to have negative emotions about reaching and achieving their goals (Snyder, 2002). There are multiple paths for an individual to reach their set goals. Individuals with low levels of hope perceive fewer of these paths and are more prone to succumbing to hopelessness when faced with a problem. Their ability to generate alternative thoughts is limited (Snyder, 2005). On the other hand, individuals with high levels of hope feel

better about themselves, access opportunities more quickly, and tend to be more successful in reaching their goals (Snyder, 2002). When considering teachers, a teacher with low hope may exhibit negative attitudes in communication and interaction with students, have weak beliefs in students' potential for success, and appear reluctant to adapt to changes in the curriculum, student assessment, or the education system. In short, students are negatively affected as well (Mcafee et al., 2019; Tarhan & Bacanlı, 2015).

Life satisfaction is another characteristic that affects the attitudes of teachers and candidates toward measurement and evaluation. Satisfaction is the fulfillment of expectations, needs, desires, and wishes of an individual based on the characteristics they possess and their environment (Diener et al., 1985; Çalışandemir & Baltacı, 2017). Taking into account the criteria established by the individual, life satisfaction is defined as the positive evaluation of one's entire life (Haybron, 2007; Tagay et al., 2016). In this context, when considering the preparation process for education, the implementation of the curriculum, and the evaluation phase, it is expected that the life satisfaction of teachers and candidates is high for the successful completion of effective education and instruction.

The study put forth a theoretical framework aimed at comprehending the interplay dynamics amongst self-efficacy, hope, life satisfaction, and the attitudes toward measurement and evaluation within individuals' lives. Given the ages and life roles inherent to the university students comprising the study's participant cohort, it is reasonable to assert that the investigated group primarily encompasses aspiring educators, given their pursuit of becoming future teachers.

This study is important for focusing on effective factors that contribute to teacher candidates' ability to conduct reliable measurement and evaluation, which is one of the essential stages for ensuring successful education and instruction in the future. Consequently, it aims to foster a positive attitude towards measurement and evaluation. Furthermore, the psychological state of teacher candidates, their self-efficacy, hopes, and level of life satisfaction are valuable in revealing the potential positive or

negative impacts of fully embracing the teaching profession.

H1. Self efficacy is related to hope, life satisfaction, and attitude of measurement and evaluation.

H2. Hope mediates the relationship between self efficacy and attitude of measurement and evaluation.

H3. Life satisfaction mediates the relationship between self efficacy and attitude of measurement and evaluation.

Method

Participants and Procedure

The study sample consisted of 534 people from Turkey, with 351 women and 183 men aged 18-26. Convenience sampling was used to select the participants, which is a non-probability sampling method that involves selecting participants who are easily accessible to the researcher. In this case, the participants were university students from Turkey who were recruited via Google Forms. The researchers made it clear that participation was voluntary and that personal information should not be included in the survey responses. Mediation analysis was conducted using Hayes' (2017) Process Macro.

Measures

Self Efficacy Scale: The Self Efficacy Scale, developed by Jerusalem and Schwarzer. This scale consists of 10 items. This scale was adapted to Turkish by Yeşilay (1996), is rated as 4-point Likert, and consists of 10 items. The score range of the scale varies between 20-80. In studies conducted in many countries, the Cronbach Alpha reliability coefficient of the General Self-Efficacy Scale ranged between .76 and .90 (Schwarzer & Jerusalem, 1995).

Life Satisfaction Scale: Diener et al. (1985) developed the life satisfaction scale and it was adapted to Turkish by Köker (1991). The scale is rated as 7-point Likert, and consists of 25 items. The statements in the life satisfaction scale vary between 1 - I strongly disagree with the given statement and 7 - I completely agree with the given statement. Diener et al. (1985) determined the test-retest re-correlation coefficient is 0.82 and Cronbach's alpha coefficient is 0.87 for reliability studies at two months intervals and found that the scale had adequate validity and

reliability coefficients. [Köker \(1991\)](#) applied the scale to the sample group at three-week intervals and determined the test-retest consistency coefficient. 0.85.

The Hope Scale: The Hope Scale is a 8-point Likert-type scale developed by [Snyder et al. \(1991\)](#) and adapted to Turkish by [Akman & Korkut \(1993\)](#). As indicated by Akman & Korkut, the measurement scale is comprised of a singular dimension, encompassing a total of 12 items. The assessment of internal consistency yielded a coefficient of .65, while the test-retest reliability coefficients were established at .66 and .85, respectively, through a 4-week test-retest procedure.

The Attitude of Measurement and Evaluation Scale: The Attitude of Measurement and Evaluation Scale, devised by [Aktas & Alici \(2012\)](#), is constructed as a 5-point Likert-type scale comprising 20 items categorized into 3 sub-dimensions. The internal consistency coefficient calculated on the whole scale was .944, the cognitive level sub-dimension was .911, the behavioral level sub-dimension was .898, and the affective level sub-dimension was .845 for reliability. The observed internal consistency values suggest that the scale maintains satisfactory levels of internal consistency. Consequently, it is reasonable to assert that the Attitude of Measurement and Evaluation Scale serves as a valid and reliable measurement instrument suitable for gauging the emotional reactivity of university students.

Data Analysis

The collected data underwent analytical scrutiny employing a statistical software application. Prerequisite assumptions for subsequent analyses were rigorously addressed before their actual execution. Specifically, an assessment of kurtosis-skewness magnitudes within the dataset was conducted to ascertain adherence to the essential conditions of normality and linear correlation, imperative for implementing parametric tests. Furthermore, an evaluation of the inter-variable correlations indicated a lack of substantial correlation. To assess the presence of multicollinearity, pertinent diagnostic measures such as tolerance, Variance Inflation Factor (VIF), and Condition Index (CI) were computed. Conforming to established criteria

([Albayrak, 2005](#)), where tolerance values ought to fall below .10, VIF values should not exceed 10, and CI values should range between 10 and 30, the analysis yielded no indications of multicollinearity. As a part of outlier detection, Mahalanobis distance metrics were employed, revealing the presence of outliers within the data points contributed by 42 participants. Subsequently, these identified outliers were excluded from the analytical proceedings, resulting in a final dataset comprising 534 observations for analysis.

Results

Preliminary Analyses

The study variables are summarized in Table 1, which includes descriptive statistics, correlations, and reliabilities. Hope was positively associated with life satisfaction ($r = .307, p < .001$) self efficacy ($r = .577, p < .001$), and attitude of measurement and evaluation ($r = .310, p < .001$). Life satisfaction was n positively associated with self efficacy ($r = .254, p < .001$), and attitude of measurement and evaluation ($r = .191, p < .001$). Self efficacy was positively associated with attitude of measurement and evaluation ($r = .259, p < .001$).

Table 1 Descriptive Statistics and Bivariate Correlations among Variables among the Total Sample (N = 534)

	H	L.S	S.E	A.M.E
H	-			
L.S	.307	-		
S.E	.577	.254	-	
A.M.E	.310	.191	.259	-
Mean	64.85	17.94	27.49	71.99
Std. Deviation	9.939	6.290	5.579	11.111
Skewness	-.013	.101	.191	.005
Kurtosis	-.238	-.422	-.513	-.394
Range	50	28	27	59

$p < .001$. H = Hope; L.S = Life Satisfaction; S.E = Self Efficacy; A.M.E =Attitude of Measurement and Evaluation

Note. The gathered data includes correlations among the primary constructs examined within this research, namely Hope, Life Satisfaction, Self Efficacy, and Attitude of Measurement and Evaluation. Through

bivariate analysis, it was observed that there exists a moderate level of association among these variables.

Serial Multiple Mediation Analyses
Self Efficacy-Attitude of Measurement and Evaluation-Hope-Life Satisfaction

Findings of the serial mediation analyses are visually depicted in Figure 2. The analysis revealed a significant direct impact of self-efficacy on the attitude of measurement and evaluation. (total effect, $\beta = .26, p < .001$). Upon integrating the mediators (hope and life satisfaction) into the model, the analytical outcomes continued to indicate the substantial significance of this coefficient (direct effect, $\beta = .22, p < .05$). Furthermore, self-efficacy exhibited a constructive predictive relationship

with hope ($\beta = .58, p < .001$) as well as with life satisfaction ($\beta = .25, p < .001$). In accordance with the findings, Hypothesis 1 has been corroborated.

It was found a significant indirect effect of self efficacy on attitude of measurement and evaluation via hope (*indirect effect* = .13, *SE* = .03, *95% CI* = [.06, .19]). Also, the indirect effect of self efficacy on attitude of measurement and evaluation via life satisfaction was also significant (*indirect effect* = .02, *SE* = .01, *95% CI* = [.01, .05]). Based on the outcomes pertaining to the association between self-efficacy and attitude of measurement and evaluation, it is evident that hope and life satisfaction exert mediating influences. Consequently, both Hypothesis 2 and Hypothesis 3 have been validated.

Table 2 Completely Standardized Indirect Effect of Self Efficacy on Attitude of Measurement and Evaluation Via Hope and Life Satisfaction

Path	Coefficient	95% CI	
		LL	UL
Self efficacy → Hope → Attitude of Measurement and Evaluation	.13	.06	.19
Self efficacy → Life satisfaction → Attitude of Measurement and Evaluation	.02	.01	.05
Total effect	.26	.35	.68
Direct effect	.11	.02	.41
Total indirect effect	.15	.09	.21

Note. CI = confidence interval, LL = lower limit, UL = upper limit

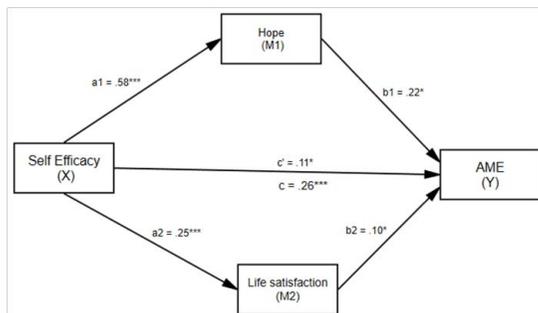


Figure 3 The results of serial multiple mediational model

Note. Y = Attitude of Measurement and Evaluation, X = Self Efficacy, M1 = Hope, M2 = Life Satisfaction

Consequently, all hypotheses posited within the current study have been substantiated, as outlined in Table 2. The findings affirm that self-efficacy demonstrates a predictive relationship with attitudes toward measurement and evaluation. It was found

that there is an indirect relationship between self efficacy and attitude of measurement and evaluation. The results showed that the relationship between self efficacy and attitude of measurement and evaluation is partially mediated by hope and life satisfaction (see figure 3).

Conclusion and Discussion

This study proposed a hypothetical model to examine the relationships among attitude of measurement and evaluation, self efficacy, hope, and life satisfaction. The findings revealed that life satisfaction mediates the relationship between hope and self efficacy, such that hope and self efficacy both positively predict life satisfaction, and life satisfaction in turn positively predicts attitude of measurement and evaluation. This suggests that individuals who have a positive attitude towards measurement and evaluation are more likely to have high levels of hope and self-efficacy, which in turn

lead to greater life satisfaction. Individuals with higher levels of life satisfaction have higher levels of self-efficacy, are more hopeful about the future and have higher levels of measurement and evaluation. Because they show more conscious and positive behaviors.

Firstly, the study examined the relationship between self-efficacy and hope. The findings showed that there is a significant positive relationship between self-efficacy and hope, such that individuals with high self-efficacy are also more likely to have high levels of hope. This suggests that self-efficacy and hope are two interrelated constructs that contribute to positive psychological well-being.

There are many studies in which the concepts of self-efficacy and hope have been studied together. The results of similar studies conducted in the literature on self-efficacy and hope demonstrate parallels with the findings of this current study. In other words, a positive relationship between self-efficacy and hope is indicated ([Carifio & Rhodes, 2002](#); [Feldman & Kubota, 2015](#); [Lackaye et al., 2006](#); [Magalleta & Oliver, 1999](#); [Tarhan & Bacanlı, 2015](#); [Sarioğuz, 2021](#); [Teranlı & Demir, 2012](#)).

In similar studies conducted by [Bandura \(1997\)](#) and [Geiger et al. \(2017\)](#), individuals with high self-efficacy have been noted to possess high levels of effectiveness in their behaviors and beliefs in their ability to succeed. [Ryan and Deci \(2000\)](#) emphasized in their research that self-efficacy influences individuals' perceptions of success in challenging tasks, promoting a proactive orientation towards events instead of avoidance and endorsing an achievement-oriented mindset. When examining existing cognitive and motivational studies in the literature, a positive relationship between the sense of hope and academic achievement, as well as between academic achievement and self-efficacy, is underscored ([Adelabu, 2008](#); [Onwuegbuzie & Snyder, 2000](#); [Snyder et al., 2002](#); [Snyder & Shorey, 2002](#)). In [Tarhan's \(2012\)](#) study with university students, it was demonstrated that self-efficacy is one of the significant predictors of hope. In this context, it is anticipated that a positive relationship between hope and self-efficacy would be an expected outcome.

According to the general purpose of the study, another outcome of the study was the relationship between self-efficacy and attitude of measurement and evaluation. Findings showed that there is a relationship between self-efficacy and attitude of measurement and evaluation. There is no study in the literature in which the findings obtained in this study can be compared. Furthermore, it is observed that there are very few attitude scales developed to measure the attitudes of teachers and candidates regarding measurement and evaluation ([Tekindal, 2002](#); [Erdoğan, 2010](#); [Aktaş & Alici, 2012](#); [Çalışkan & Yazıcı, 2013](#)).

One of the factors influencing the establishment of a positive learning environment and the attainment of the specified characteristics in the instructional program is the cognitive, affective, and behavioral attributes of both teachers and students ([Gürefe & Kan, 2013](#); [Messick & Reynolds, 1992](#)). In this context, considering cognitive and affective attributes, the level of self-efficacy of the teacher, being one of these attributes, is an expected outcome to affect the educational process and consequently the teacher's attitude towards measurement and evaluation.

When reviewing the literature, numerous studies indicate a positive relationship between self-efficacy and achievement ([Alivernini & Lucidi, 2011](#); [Bandura, 2002](#); [Bong, 2004](#); [Cybulski et al., 2005](#); [Goddard et al., 2004](#); [Hwang et al., 2015](#)). On the other hand, a successful teacher demonstrates a positive attitude toward measurement and evaluation, implying a positive relationship between achievement and attitudes toward measurement and evaluation ([Aiken, 2006](#); [Baykul, 1990](#); [Geiger et al., 2017](#)). Studies suggest that attitudes not only influence students' achievements but also possess the power to impact their future professional lives ([Auzmendi, 1991](#); [Gal & Ginsburg, 1994](#)). In this context, it can be stated that there is a positive relationship between self-efficacy and demonstrating a positive attitude towards measurement and evaluation, a result that parallels the findings of this study.

Another finding of the study was that there is a significant positive relationship between hope and attitude of measurement and evaluation. This means that individuals with high levels of hope are more

likely to have positive attitudes towards measurement and evaluation. This finding is novel, as no other study has previously investigated the relationship between hope and attitude of measurement and evaluation.

One of the cognitive and affective attributes that teachers and candidates need to possess to create a positive teaching environment is hope. Furthermore, numerous studies demonstrate a positive relationship between hope and achievement, similar to the positive relationship observed with self-efficacy ([Adelabu, 2008](#); [Onwuegbuzie & Snyder, 2000](#); [Snyder et al., 2002](#); [Snyder & Shorey, 2002](#)). Considering the positive relationship between achievement and a positive attitude towards measurement and evaluation, it can be anticipated that the findings of the study would suggest a positive relationship between hope and measurement and evaluation.

The proposed model of the study suggests that hope mediates the relationship between self-efficacy and attitude of measurement and evaluation. This means that hope plays a causal role in the relationship between self-efficacy and attitude of measurement and evaluation. In other words, as self-efficacy increases, so does hope, and as hope increases, so does the attitude of measurement and evaluation.

Having only field knowledge is not a sufficient criterion for quality education. Besides subject knowledge, it's also essential to take into consideration teachers' pedagogical competencies related to the field they will be teaching and their beliefs in their ability to fulfill the tasks and responsibilities associated with this profession. In this context, teacher candidates should receive a high-quality pedagogical education and have a strong self-belief ([Gökyer, 2019](#); [Bandura, 1997](#)). Therefore, there would be a positive relationship between a teacher's self-efficacy beliefs and hope values and their attitudes toward measurement and evaluation is expected. In a similar study, [Şahin \(2010\)](#) emphasized that no matter how high the teachers are in terms of their field knowledge, they cannot provide adequate and efficient education if their feelings of self-efficacy and hopes to perform are low.

The final output of the study determined that life satisfaction mediates the relationship between self

efficacy, attitude of measurement and evaluation, and hope according to the model proposed. An individual satisfied with their life has high self-efficacy, is hopeful, optimistic, and has higher attitudes towards measurement and evaluation. Although there are no studies in the literature to support this outcome, studies show that life satisfaction is directly or indirectly related to self efficacy, attitude of measurement and evaluation, and hope. In this context, it is an expected result.

Limitations and Future Research

The study's limitations pertain to both data acquisition and methodological approaches. Data was procured through the utilization of convenience sampling within a cross-sectional framework. Consequently, the scope of the data acquired is delimited by the employed data collection instruments. Conversely, the study is endowed with notable strengths. It boasts a robust theoretical framework and pioneers an original inquiry, unexplored hitherto.

The conceptual model introduced in this study holds promise as an innovative paradigm for scholarly investigation. This model could potentially serve as a novel template for researchers in the field. Practitioners and scholars alike can leverage this study's findings to devise wellness-focused psychoeducational interventions targeting individuals, with the aim of enhancing self-efficacy, hope, and life satisfaction among university students. The empirical foundation of this research rests on data sourced from Turkey's university student populace. Nonetheless, the scholarly discourse could be enriched by diversifying participant demographics, encompassing disparate age cohorts, and employing alternative methodologies like experimental research and Online Photovoice (OPV). Due to the study's geographical confinement to Turkey, the generalizability of its findings is inherently restricted. Therefore, a valuable endeavor would involve conducting analogous investigations on a more expansive scale, encompassing broader geographical contexts. It is postulated that the current study lays the groundwork for prospective research initiatives.

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