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VALIDATION OF THE MOTIVATION TO TEACH SCALE

ÖĞRETME MOTİVASYONU ÖLÇEĞİNİN GEÇERLİK ÇALIŞMASI

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ABSTRACT: The purpose of this study was to develop and validate a self-report psychological instrument assessing pre-service teachers' relative intrinsic and extrinsic motivation to teach. One hundred forty seven undergraduate students taking Educational Psychology courses from a large US University participated in this study completed the 12 item MTS along with four other questionnaires. Exploratory factor analysis on the MTS revealed a two factor solution accounting for 54% of the variance. Construct validity evidences further show that a) these factors reflect intrinsic and extrinsic motivation to teach and b) the two factors seem to be orthogonal. This study provides initial evidence for a new motivation instrument that seems to be a reliable and valid measure of pre-service teachers' intrinsic and extrinsic motivation to teach. Implications for further research and practice are also discussed.

Keywords: Intrinsic Motivation, Extrinsic Motivation, Self-Determination, Teaching

ÖZET: Bu çalışmanın amacı öğretmen adaylarının içsel ve dışsal öğretme motivasyonunu ölçen öz-bildirimli (kendi görüş ve ifadelerine dayalı) psikolojik bir araç geliştirip, geçerliğini kanıtlamaktır. Amerika Birleşik Devletleri'ndeki bir üniversitede Eğitim Psikolojisi dersi alan 147 lisans öğrenci bu çalışmaya katılarak 12 maddelik Öğretme Motivasyonu Ölçeği ile diğer dört ölçeği doldurmuşlardır. Öğretme Motivasyonu Ölçeği'ne uygulanan açıklayıcı faktör analizi, varyansın % 54'ünü açıklayan iki faktör çözümünü ortaya çıkarmıştır. Yapı geçerliği kanıtları a) bu faktörlerin içsel ve dışsal öğretme motivasyonunu yansıttığını, b) bu iki faktörün dikey düzlemde olduğunu göstermiştir. Bu çalışma, öğretmen adaylarının içsel ve dışsal öğretme motivasyonunu ölçmede geçerli ve güvenilir olduğunu gösteren yeni bir motivasyon aracı için öncül kanıtları sağlamaktadır. Gelecek çalışmalar ve uygulamalar için çıkarımlar tartışılmıştır.

Anahtar sözcükler: İçsel motivasyon, Dışsal Motivasyon, Öz-Belirleme, Öğretme

1. INTRODUCTION

Psychologists and educators recognize that motivation has a real and significant influence on human behavior (e.g. Ryan & Deci, 2000a). Without motivation, students are less likely to apply themselves or to persist in the face of challenge. Most researchers agree that given choices human beings will engage in activities they either find inherently enjoyable or that are prerequisite to achieving a desired outcome (Deci & Ryan, 2001; Dweck & Leggett 1988; Elliot & Thrash, 2001). Furthermore, individuals engage in activities they believe are instrumental to their future (e.g., Miller & Brickman, 2004), in activities they believe they possess the skills to accomplish successfully (e.g., Pajares, 1996), and in activities at which they have previously been successful (e.g., Weiner, 1985). Arguably one of the most widely studied motivational perspectives is self-determination theory (e.g., Deci & Ryan, 2001; Deci, Vallerand, Pelletier, & Ryan, 1991; Hardre & Reeve, 2003, Reeve, Deci, & Ryan, 2004, Ryan & Deci 2000a, 2000b). From this perspective, motivation is defined relative to the degree to which behavior is volitional, or the extent to which individuals engage in actions with a full sense of choice. In the present study, we incorporated a self-determination theory perspective in the design and validation of a self-report psychological instrument assessing pre-service teachers' motivation to teach. Before describing the study in further detail, we begin with a brief description of self-determination theory and then discuss some of the more controversial issues related to the theory..

1.1. Self-Determination Theory

Self-determination theory (SDT) is a complex meta-theory designed to explain motivation and personality (Reeve, Deci, & Ryan, 2004; Ryan & Deci, 2000a). It consists, in part, of three sub-

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theories, including Basic Needs Theory (BNT), Cognitive Evaluative Theory (CET), and Organismic Integration Theory (OIT) that describe the extent to which an individual believes his or her behavior is volitional, internally driven, and based on choice.

Basic Needs Theory assumes human behavior is guided by three fundamental needs, including the needs for competence, autonomy, and relatedness (Deci & Ryan, 2001; Reeve, et al., 2004). Need for Competence refers to the extent to which an individual understands how to accomplish certain things and possesses the confidence to do so. Need for Autonomy refers to an individual's ability to initiate and regulate their actions independently. Need for Relatedness refers to an individual's sense of connectedness with others. SDT theory proposes that in order to maintain psychological well being, individuals actively strive to meet all three of these basic needs.

Cognitive Evaluation Theory (CET) assumes that people have an innate need for self-determination (Deci & Ryan, 1985). From this perspective, an individual's motivation depends on the extent to which he or she views their behavior as being either controlled or guided by his or her personal sense of self. Whereas environments that support students' needs for competence, autonomy, and connectedness represent self-determined environments, those that frustrate these needs represent controlling environments (Hardre & Reeve, 2003; Reeve et. al, 2004).

Deci and Ryan's (2001) recognition that human behavior is not always intrinsically driven, but that even extrinsically motivated behaviors could be self-determined is the foundation of SDT's third mini theory. Organismic Integration Theory (OIT) describes extrinsic motivation as existing along a continuum from pure extrinsic motivation to highly self-determined motivation (e.g., Reeve, et al., 2004). Four levels of extrinsic motivation exist along this continuum, including external regulation, introjected regulation, identified regulation, and integrated regulation. OIT proposes that extrinsically motivated behaviors become self determined through the developmental processes of internalization and regulation.

1.2. Intrinsic and Extrinsic Motivation

One key aspect of SDT is it's depiction of human motivation as a continuum ranging from pure intrinsic to pure extrinsic forms (Reeve, et al., 2004). Intrinsic motivation is seen in individuals who engage in an activity or behavior for its own sake with no focus on material gain (Deci & Ryan 2001). An individual is said to be intrinsically motivated when he or she participates in an activity because the activity is somehow inherently satisfying to that individual (Ryan & Deci, 2000a). Individuals who are intrinsically motivated to teach, for example, would likely choose to participate in teaching-related activities even in the absence of perceived rewards. There exists much research suggesting that intrinsically motivated individuals perform at higher levels and are more likely to persist in the face of challenge as compared to extrinsically motivated individuals (e.g.; Deci, et al., 1991; Ryan & Deci, 2000a; Vallerand, Fortier, & Guay, 1997).

On the other end of this theoretical continuum lays extrinsic motivation which describes behaviors engaged in as a means to an end and involves actions that are, at least to some extent, perceived as being controlled by forces external to the individual (See also; Deci, et al., 1991; Ryan & Deci, 2000a). Whereas intrinsically motivated individuals tend to focus on the process of a particular task, extrinsically motivated individuals generally focus on the outcome. For example, a teacher who chooses to enter the teaching profession for the paycheck, in order to coach, or because his parents were teachers and she feels is her destiny to follow in their footsteps, would be considered extrinsically motivated because the outcome (receiving a paycheck, coaching, or fulfilling a legacy) is the individual's primary motivation for entering the teaching profession.

1.3. Relationship Between Intrinsic and Extrinsic Motivation

Early SDT researchers (e.g., Deci, 1975) argued that most human behaviors could be described as either intrinsically or extrinsically motivated. More recently, Deci and others (e.g., Deci et al., 1991, Reeve, et al., 2004) have moved away from traditional dichotomous descriptions of motivation to a more continuous description; primarily due to the complexities of extrinsic motivation. Specifically, many researchers (e.g., Deci, et al., 1991; Ryan & Deci, 2000a) now recognize that not all extrinsic motivation is the same and have thus identified four levels of extrinsically-motivated behavior--

external regulation, introjected regulation, identified regulation, and integrated regulation--that are defined by the extent to which the behavior is internalized and regulated by the individual. Nevertheless, most current SDT depictions still describe intrinsic and extrinsic motivation as more or less two constructs existing on opposite ends of a single continuum (Amabile, Hill, Hennessey, & Tighe, 1994; Covington & Müeller, 2001, Pintrich, 1999; Pintrich & Garcia, 1991). Accordingly, we chose to define extrinsic motivation as a single factor for the purposes of this study.

Some have argued (Covington & Müeller, 2001), that viewing intrinsic and extrinsic motivation as existing on opposite ends of a single continuum is problematic. For one, given that neither intrinsic nor extrinsic motivation operates in absence of external influences, it is difficult to imagine how they can be incompatible. Covington and Müeller, (2001), for example, argued that "Human beings always anticipate some payoff for their actions, intrinsically driven or not" (pg. 162). Consequently, it may be impossible for intrinsic motivation to occur in absence of at least some extrinsic focus.

A second, related problem is that current depictions of intrinsic and extrinsic motivation make it almost impossible to account for the multiple motivations people typically have for engaging in a single activity (Covington & Müeller, 2001). For example, it is possible that the student described above chose to enter the teaching profession not only because his parents were teachers and he wants to coach, but also because he loves the process of teaching and cannot imagine doing anything else. In short, it is possible (and even likely) that a student would choose to enter the teaching profession for both intrinsic and extrinsic reasons. This can be viewed as a critical limitation of current SDT depictions, as there is almost no question that people engage in almost any behavior for several reasons. If intrinsic and extrinsic motivation are described as dichotomous constructs existing on opposite ends of a single continuum, then it is difficult (if not impossible) to account for how these multiple motivations can interact.

A third problem with current depictions of SDT relates to how to interpret the motivation continuum. Covington and Müeller (2001) pointed out that a linear depiction of intrinsic and extrinsic motivation makes it difficult to interpret the mid point on this continuum. These authors ask whether the midpoint constitutes a lack of motivation all together or does it suggest a "canceling out" of extreme intrinsic and extrinsic motivations. There may be better ways to depict the relationship between these two important motivational constructs.

The problems with current depictions of intrinsic and extrinsic motivation described above lead us rethink how to best articulate the relationship between these two constructs. If the dichotomous, linear depiction is as problematic as described by Covington and Müeller (2001), then perhaps we should explore other more efficient and descriptive ways to depict this relationship. In this study, we propose that intrinsic and extrinsic motivations are unique motivations that exist on orthogonal axes rather than along a single continuum (Figure 1). This perspective not only seems to have much more theoretical explanatory power than conventional approaches, but also allows researchers to address the issues above. For example, from this perspective an individual can be described as simultaneously possessing differing levels (e.g., high or low) of intrinsic and extrinsic motivation for a single behavior. The middle point indicates moderate levels of both intrinsic and extrinsic motivation, and what is traditionally thought of as amotivation (e.g., Vallerand et al., 1993) can be seen in the quadrant corresponding to low levels of both intrinsic and extrinsic motivation. Despite these seemingly large alterations to SDT, we consider SDT to be an excellent theoretical framework for thinking about motivation for entering the teaching profession.

There is a little doubt that students' motivations to enter the teaching profession are both complex and vary from purely extrinsic (e.g., to earn a paycheck) to purely intrinsic (e.g., for the love of teaching). Furthermore, students undoubtedly possess multiple motivations for entering the teaching profession (e.g., for the love of teaching AND for the paycheck) that will have both direct and indirect influences on various aspects of teaching. Consequently, we judge that a scale designed to assess pre-service teachers' motivations for entering the teaching profession is an important and valuable tool that can assist administrators, educators, and researchers in understanding how to prepare and retain excellent teachers. The Motivation to Teach Scale (MTS) is designed to do just that.

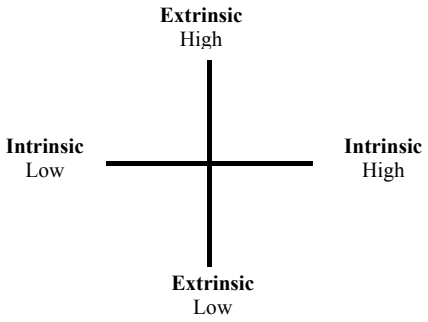

Figure 1. Proposed orthogonal relationship between intrinsic and extrinsic motivation (Adapted from Covington & Müeller, 2001)

The purpose of this study was twofold. First, we aimed to develop and validate the Motivation to Teach Scale, a summative scale designed to measure pre-service teachers' motivation to teach from a SDT perspective. Second, we sought to clarify the empirical relationship between intrinsic and extrinsic motivation. This study is important because, positive relationships among intrinsic motivation, persistence, and achievement are well documented (e.g., Deci, et al., 1991; Pintrich, 1999; Pintrich & Garcia, 1991; Reeve, et al., 2004). Moreover, it is important for teacher education programs to attend to the motivation of their students as a means of increasing achievement, teacher quality and potentially minimizing attrition. We believe the MTS has the potential to provide direction to accomplish just that.

We accomplished our goals in a series of four steps. First, we developed a pool of 160 potential items corresponded to intrinsic and extrinsic motivation to teach. Second, we winnowed the pool of items down to a 12-item scale and collected responses from approximately 150 pre-service teachers. Third, we conducted an exploratory factor analysis on the student responses. Finally, it was sought concurrent, convergent, and divergent validity evidence by comparing students responses to their responses on several other related instruments.

2. METHOD

Hinkin (1995) stated that sound measures must demonstrate content-validity, criterion-related validity, construct validity, and internal consistency to determine the psychometric validation of behavioral measures. To capture validation constructs the following sections were undertaken in this study: 1) Development stage and 2) Validation stage.

2.1. Development Stage

The development stage was comprised of the item development, item selection, content validation, and pilot testing phases.

The item development phase began with the creation of an initial pool of items within the context of a doctoral level instrument development course. Members of the research team along with their classmates independently wrote 20 items they believed assessed intrinsic motivation and 20 items they believed assessed extrinsic motivation to teach. After combining all items and removing repetitive and/or poorly worded items we agreed upon an initial pool of 160 items (80 intrinsic and 80 extrinsic).

During the item selection phase, the research team discussed each item in the initial pool. These items were assessed in terms of theoretical consistency, conceptual clarity, and ease in interpretation. Next, we ensured each item was phrased to fit within a framework of a 6 point Likert-type scale anchored by strongly agree and strongly disagree. We chose a six point scale to ensure we had ample variability in our responses and to force students to either agree or disagree with each item. This process resulted in the winnowing of our initial pool down to a sample of 40 items (20 intrinsic and 20 extrinsic). Prior to pilot testing, the research team solicited feedback from three educational psychologists who have extensive backgrounds and expertise in motivation. These experts read the

items and provided several suggestions regarding the clarity and coverage of items as they related to the constructs of intrinsic and extrinsic motivation.

Pilot testing phase included 24 undergraduate education majors from an undergraduate Educational Technology course. Students completed and commented on the initial 40 item MTS scale. Items that seemed to replicate each other or that the students felt were confusing were removed. Based on feedback from the students in the pilot study, the research team agreed on12 items (6 reflecting intrinsic motivation and 6 items reflecting extrinsic motivation) that would comprise the Motivation to Teach Scale.

2.2. Participants

Using convenient sampling technique, one hundred forty seven (30 Males; 117 Females) students were recruited from undergraduate Educational Psychology courses at a large university in the Southwestern part of the United States. Data were collected in groups of approximately 25 students. Participants were instructed to work at their own pace to respond as accurately as possible.

On average students were 23 years of age, were of junior standing, and were enrolled in approximately 15 credit hours. All students were education majors. Approximately 54% were early childhood or elementary education majors planning to teach in a preschool or elementary school. The remaining 46% were secondary education majors of various specialties who reported they wanted to teach in a middle or high school setting.

2.3. Instruments

Participants completed a demographic instrument, the MTS, a Teacher Self-Efficacy Instrument (Schwarzer, Gerdamarie, Schmitz, & Daytner, 1999), the Academic Motivation Scale (AMS) (Vallerand, Pelletier, Blais, Briere, Senecal, & Vallieres, 1993), and the Approaches to Learning (ATL) scale (Miller, Greene, Montalvo, Ravindran, & Nichols, 1996). These instruments were chosen in order to establish convergent, discriminate, and concurrent validity evidence. The instruments were adapted from their original contexts in order to meet the context of the present study (e.g., motivation to enter the teaching profession), however no substantial changes were made to item content.

The Teacher Self-Efficacy Scale (Schwarzer, et al., 1999) was a 10 item scale that was adapted to assess participants' self-efficacy for entering the teaching profession. Students responded to items on a 4 point scale anchored by "exactly true of me" and "not at all like me." Schwarzer et al. (1999) reported Cronbach's alphas ranging from .76 to .82 across three samples. In the present study, internal consistency evidence was adequate as well (= .80).

The ATL scale (Miller et al., 1996) is a 32 item questionnaire containing six subscales assessing learning goals, performance goals, future consequences, pleasing the teacher, pleasing the family, and perceived ability. In their initial validation study, Miller and colleagues reported subscale internal consistency scores ranging from .65-.93 for each subscale across two studies. For purposes of the present study, we removed the perceived ability and pleasing the teacher subscales, shortening the ATL to 20 items assessing learning goals (= .84), performance goals (= .86), future consequences (= .69), and pleasing the family (= .75).

Finally, the AMS (Vallerand et al, 1993) was designed to assess intrinsic and extrinsic motivation within academic contexts. Students answered 28-items asking why they go to college. Students respond to these items on a 6-point scale anchored by "does not correspond to me" and "corresponds exactly to me." In their validation study, Vallerand and colleagues (1993) reported subscale internal consistency scores ranging from .60-.81 on the intrinsic and extrinsic subscales of the AMS. For purposes of the present study, we collapsed the AMS into two scales corresponding to intrinsic motivation (= .76) and extrinsic motivation (= .68).

2.4. Procedure

Students first read and signed the informed consent and then completed the demographic survey, MTS, Teaching Self-Efficacy, ATL, and AMS in that order. They were instructed to work at their own pace and to respond as accurately as possible. Students were asked to sit quietly their desks

once they completed their questionnaires. Students took between 25 and 30 minutes to respond to the questionnaires. After all data had been collected, students were debriefed, thanked and dismissed.

3. ANALYSIS AND FINDINGS

3.1.Factor Analytic Phase

In order to explore dimensions of the scale factor analysis was conducted. An exploratory factor analysis using principal components analysis with Varimax rotation yielded two factors with eigen values greater than 1.00 that corresponded to intrinsic and extrinsic motivation to teach (Table 1). The intrinsic motivation factor had an eigen value of 3.79 and accounted for approximately 31.56.% of the variance, whereas the extrinsic motivation factor had an eigen value of 2.77 and accounted for 23.04% of the variance. Together, intrinsic and extrinsic motivation factors accounted for 54.59 of the variance in MTS scores.

Table 1. Factor Loadings For The 12 Item MTS

Item	Intrinsic Factor	Extrinsic factor
1	-.131	.702
2	.783	.043
3	.134	.641
4	-.134	.775
5	.223	.725
6	.757	.038
7	-.108	.628
8	-.109	.601
9	.710	-.014
10	.791	-.008
11	.714	-.184
12	.876	-.098

Once we established the factor structure of the MTS, we calculated internal consistency estimates for each factor using Chronbach's alpha. We chose to use Chronbach's alpha because it is widely viewed as the most conservative estimate of internal consistency. As seen in Table 2, internal consistency estimates for the Intrinsic (α =.86) and Extrinsic (α =.76) motivation subscales on study one revealed adequate internal consistency estimates.

Table 2. Internal Consistency Estimates For The Intrinsic And Extrinsic Subscales Of The MTS

	Intrinsic subscale	Extrinsic subscale
MTS	.855	.755

3.2. Instrument Validation Phase

To gather construct validity evidence, we calculated correlations among the MTS, ATL, and AMS subscales, as well as the Teacher Self-Efficacy scale. A correlation table showing relationships among the MTS, AMS, ATL, and Teaching Self-Efficacy instrument is presented in Table 3.

Intrinsic motivation subscale. A number of researchers have identified relationships between intrinsic motivation and self-efficacy (Moneta, Csikszentmihalyi & Schneider, 2000; Csikszentmihalyi & Rathunde, 1993). Csikszentmihalyi and colleagues, for example, noted that intrinsically motivated students were characterized by high self-efficacy and regularly sought out challenging and personally relevant activities as a means of building their interest. The relationship between performance goals and intrinsic motivation is a bit more complex. Some believe that negative relationships exist between performance goals and intrinsic motivation (Covington & Müeller, 2001), yet others believe this relationship is not quite so clear (e.g., Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002). Important relationships exist between intrinsic motivation and achievement goals, as well (Curry, et al., 2002; Harackiewicz & Sansone, 2000, 1991). Considering these findings, we predicted intrinsic motivation subscale would correlate positively with the intrinsic motivation subscale of the AMS, the learning goals subscale of the ATL, and the self-efficacy scale. We also predicted this subscale would be uncorrelated with performance, future, and social goals. Results revealed the intrinsic motivation subscale of the MTS to correlate positively with the intrinsic motivation subscale on the AMS ($r = .40$; $p < .001$), the learning goals subscale of the ATL ($r = .25$; $p = .002$) and the self-efficacy scale ($r = .37$;

p < .001). Results further revealed no significant relationships between the intrinsic motivation subscale and the performance, future, or social goal subscales of the academic goals scale, or the extrinsic motivation subscale of the AMS.

Extrinsic motivation subscale. Much less has been written about relationships among extrinsic motivation, self-efficacy, and achievement goals. Rawsthorne and Elliot (1999) pointed out that some performance goals focus on the possibility of failure and thus may produce threat appraisals and promote anxiety that is detrimental to *intrinsic motivation***.** Theoretically, self-efficacy should be a good measure to establish discriminate validity because it is certainly possible that an extrinsically motivated individual could report either high or low self efficacy depending on a number of factors, including perceptions of task difficulty. Further, we believe mastery goals should be a good measure of divergent validity for the extrinsic factor because whereas extrinsically motivated individuals tend to focus on the outcome of a task (e.g., the reward), mastery goals are characterized by a focus on the process of mastery. Finally, we believe performance goals should be a good measure of convergent validity because both are focused on outcome. Results revealed the MTS's extrinsic motivation subscale to be related positively to the extrinsic motivation subscale of the AMS (r = .342; p < .001), as well as to performance (r = .327; p < .001), future (r = .247; p = .002), and social (r = .373; p = .001) goal subscales of the ATL. No relationships existed between MTS's extrinsic motivation subscale and the learning goals or self-efficacy scale. Once again, both the relationships and the lack of relationships were consistent with our predictions.

Finally, as seen in Table 3, intrinsic and extrinsic motivation subscales of the MTS were uncorrelated (r = -.039; p > .05), providing further evidence of the independent nature of the two constructs.

Table 3. Correlations Among Subscales Of The MTS, AMS, AGS, The Self-Efficacy Scale

	1	2	3	4	5	6	7	8
MTS Intrinsic	-.039	.404**	.122	-.074	-.089	-.079	.250**	.370**
MTS Extrinsic (1)	-	-.064	.342**	247**	.327**	.373**	-.036	-.006
AMS Intrinsic (2)		-	.344**	-.088	-.080	-.032	.484**	.312**
AMS Extrinsic (3)			-	.448**	.335**	.460**	.048	.244**
ATL Future (4)	.			-	.520**	.464**	-.011	.066
ATL Perform (5)					-	.496**	-.05	-.017
ATL Social (6)						-	-.086	.174*
ATL Learning (7)							-	.227**
Self-Efficacy (8)								-

* = p < .05 ** = p < .01

4. DISCUSSION and RESULTS

The purpose of this study was to develop and validate the Motivation to Teach Scale, a summative scale is designed to measure pre-service teachers' motivation to teach based on Self Determination Theory. Two questions guided our study. First, does a two- factor model corresponding to intrinsic and extrinsic motivation provide the most clear and concise depiction of pre-service teachers' motivation to enter the teaching profession? Second, whereas traditional perspectives view intrinsic and extrinsic motivation as existing more or less on opposite ends of a single continuum, we questioned whether the relationship between intrinsic and extrinsic motivation may better described as orthogonal.. Results seem to support the both the factor structure and proposed theoretical relationships between intrinsic and extrinsic motivation. The remainder of discussion is divided into three sections. In the first section we discuss results relative to the first issue. In the second section we discuss the theoretical relationship between intrinsic and extrinsic motivation in general. Finally, we

conclude by discussing the limitations with the present study and making some recommendations for future research studies.

4.1. MTS Factor Structure

Results suggest the Motivation to Teach Scale is a reliable and valid measure of pre-service teachers' motivation to enter the teaching profession. Results revealed that factors corresponding to intrinsic and extrinsic motivation to teach accounted for over one half of the variance in scores on the MTS. Further, all of the predicted relationships between the MTS factors and other constructs measured during the validation stage were verified, providing construct validity evidence. For example, whereas scores on the self-efficacy instrument (Schwarzer, et al., 1999) were related positively to the intrinsic motivation factor (r = .370) providing convergent validity evidence, there was essentially no relationship between self-efficacy and scores on the extrinsic motivation factor of the MTS (r = -.006). This is consistent with some previous research (e.g., Moneta, et al. 2000; Csikszentmihalyi & Rathunde., 1993) suggesting self-efficacy is positively related to intrinsic motivation and not extrinsic motivation. Furthermore, the observed relationships between the MTS factors and mastery goals and performance goals seem to be consistent with previous research (e.g., Covington & Müeller, 2001; Curry, et al., 2002; Durik & Harackiewicz, 2003), providing additional convergent and discriminate validity evidence, and thus supporting our conclusion that the two MTS factors correspond to intrinsic and extrinsic and extrinsic motivation. Next, concurrent validity evidence between scores on the two MTS factors and scores on the Academic Motivation Scale (Vallerand, et al., 1993) seem to clarify any ambiguity regarding the nature of the two factors in the MTS.

4.2. Intrinsic and Extrinsic Motivation

In contrast to some current views of the relationship between intrinsic and extrinsic motivation (e.g., Covington & Müeller, 2001) results from the present study suggest that intrinsic and extrinsic motivation may operate as more or less orthogonal constructs. Specifically, the correlation between the two factors in study was essentially zero (r = -.039). Results seemed to fit the two factor model much better than the one factor model, suggesting the two are indeed separate factors. If they are independent, then depicting interactions between intrinsic and extrinsic motivation along an XY axis (See Figure 1) addresses the problems with most current depictions outlined by Covington and Müeller (2001).

For one, the proposed model seems to more clearly describe how multiple motivations for a single behavior can occur. For instance, an untenured assistant professor might be expected to score relatively high on intrinsic motivation for his/her field. At the same time, however, this individual almost certainly needs to be extrinsically motivated by the possibility of obtaining tenure. Using this model, it becomes possible to pinpoint where on the XY axis best describes an individual's motivation. For example, the assistant professor described above likely would fall somewhere in the quadrant corresponding to high levels of both intrinsic and extrinsic motivation.

Second, the model suggested in Figure 1 allows for a more clear interpretation of the mid-point. Covington and Müeller (2001), argued that the mid-point in a linear depiction is nearly impossible to decipher. In contrast, the middle point in Figure 1 more clearly represents moderate levels of both intrinsic and extrinsic motivation.

Finally, as Covington and Müeller (2001) point out, the lack of motivation—amotivation—described by Deci and colleagues (e.g., Deci, et al, 1991; Deci & Ryan, 2000; Ryan & Deci, 2000) is very difficult to articulate using the linear depiction suggested by SDT. In contrast, the model proposed in this study may better articulate where amotivation exists. In particular, the quadrant corresponding to low levels of both intrinsic and extrinsic motivation seems to very clearly articulate amotivation and its relationship to intrinsic and extrinsic motivation. Clearly, more work needs to be done to clarify this model; however we believe results from this study point us in the right direction.

4.3. Conclusions, Limitations, and Future Directions

Results presented here are important for theoretical, empirical, and practical reasons. First, despite significant advances in SDT, current conceptions of intrinsic and extrinsic motivation still

depict the two as relatively dichotomous (Covington & Müeller, 2001). Our results suggest otherwise. If dichotomous, then the relationship between the intrinsic and extrinsic subscales should be not only negative, but strong and negative. Further, the relationships among each subscale to the other scales used in study 1 should indicate dichotomous relationships. In our study, the factor analyses in studies 1 and 2 revealed two, relatively orthogonal and independent factors, suggesting there may be minimal relationship between intrinsic and extrinsic motivation to teach. Finally, concurrent validity evidence gathered from the AMS further supports our claim that intrinsic and extrinsic motivations are more or less orthogonal.

Empirically, the present study offers an initial glimpse at a new motivation instrument that seems to be a reliable and valid measure of intrinsic and extrinsic motivation to teach. Clearly, subsequent research needs to establish further evidence for the validity of the MTS. Specifically, further validating the MTS with a new sample and using confirmatory factor analysis would provide significantly more evidence for the scale's reliability, validity, and usability.

From a more practical perspective, if intrinsic motivation and extrinsic motivation are orthogonal rather and dichotomous constructs, then it might be possible for educators to build students' intrinsic motivation without focusing on extrinsic motivation. Finally, the study showed that this instrument can provide college of education faculty as well as school administrators with a valuable tool for helping to identify areas to concentrate on with respect to supporting students' motivation to enter the teaching profession.

Despite our promising results, we recognize limitations with the present study. In particular, whereas we defined extrinsic motivation as a single construct, many current perspective define extrinsic motivation along fours levels defined by the extent to which a behavior is internalized by the individual (e.g., Vallerand et al., 1991). Our decision to define extrinsic motivation as a single construct was based on two observations. First, despite theoretical descriptions indicating extrinsic motivation is multi-factor construct, we believe many researchers still operationalize the construct as a single factor (e.g., Amabile, Hill, Hennessey, & Tighe, 1994; Covington & Müeller, 2001, Pintrich, 1999; Pintrich & Garcia, 1991). Second, we claim our depiction of extrinsic motivation as a single factor is not necessarily inconsistent with current models. Although we did refer to it as a unique construct, it may be possible to identify cut points that more or less correspond to external, introjected, identified, and integrated regulation levels proposed by Deci and colleagues (e.g., Deci et al., 1991). Certainly, additional research is needed to better clarify the nature of the extrinsic motivation continuum. Nevertheless, we believe we have begun to illuminate an important issue in the study of the relationship between intrinsic and extrinsic motivation.

A second limitation relates to the sample used to validate the instrument. Whenever possible we tried to collect data from students unfamiliar with motivation theories in general and SDT in particular. We recognize that our findings, like much of the research in motivation, may be limited by issues of social desirability.

Finally, the present study offers an initial step into the process of exploring how pre-service teachers' motivation to enter the teaching profession influences a number of factors including, GPA, teaching effectiveness, burnout, and attrition-related issues. Additional research studies, exploring a variety of issues, including theoretical validity, predictive validity, and the utility of scores on the MTS needs to be done. For instance, this instrument has the potential to predict a new students' success in their training or in their career and could thus be used as a screening tool for education programs. Specifically, future research might explore how students' responses to the MTS relate to graduate or drop-out rates, the number of years a teacher stays in the profession, enrollment in graduate programs, or the teachers' involvement with professional development and other teacher-related activities following graduation. Despite our limitations, we recognize the present study addresses a number of complex issues and we are confident we have begun to better illuminate the relationship between intrinsic and extrinsic motivation.

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Extended Abstract

Eğitimciler ve psikologlar, motivasyonun insan davranışlarını üzerinde gerçek ve önemli bir etkisi olduğu konusunda birleşirler. Motivasyon olmadan öğrenciler zorluklarla karsılaştıklarında onları asmak için daha az ısrarcı olurlar. Birçok araştırmacı, bireylere verilen seçeneklerle ya içsel olarak eğlenceli buldukları ya da istenen sonuçlara ulaşmak için bir gereklilik olarak gördükleri zaman ilgilenmektedirler. Bununla birlikte, bireyler etkinliklere karsı ilgi duydukları zaman etkinliğin geleceklerini etkileyeceğine inandıklarını, bu etkinliği başarmak için gerekli becerilere sahip olduklarını düşündüklerini ya da daha önce de bu tip etkinliklerde başarılı olduklarına inandıklarını söyleyebiliriz.

Göreceli olarak üzerinde en çok çalışılan motivasyon kuramlarından biri de Öz-Belirleme Kuramıdır. Bu kuram acısından bakıldığında, motivasyonun bir dereceye kadar iradeye ya da bireylerin özgür seçimlerine dayalı olduğunu söyleyebiliriz.

Öz-Belirleme Kuramı, motivasyon ve kişiliği açıklayan karmaşık bir üst kuramdır. Üç alt kuramı kapsamaktadır. Bunlar: Basit İhtiyaçlar Kuramı, Bilişsel Değerlendirme Kuramı Ve Organizmam Entegrasyon Kuramı. Bu kuramlar, bir dereceye kadar bireylerin davranışlarının iradeli, içsel olarak kontrol edilen ve seçimlerine bağlı olduğunu belirtmektedir.

Öz-Belirleme kuramının en önemli özelliklerinden biri, birey motivasyonunun saf ve içsel biçimden dışsal biçime doğru uzayan bir süreklilik içinde olduğunu belirtmesidir. İçsel motivasyon, bireye içsel olarak doyum sağladığı için bireyin dışarıdan bir şey beklemeden katıldığı kişilerde gözlenir. İçsel öğretme motivasyonu olan bireyler karşılığında bir ödül olmasa bile, öğretme ile ilgili etkinlikleri seçerler. İçsel motivasyonu yüksek olan bireylerin zorluklarla mücadelede dışsal motivasyonu yüksek olanlara göre sabırlı ve ısrarcı olurlar.

Bir başka deyişle sürekliliğin öbür ucundaki dışsal motivasyon, bir noktaya kadar bireyin dışındaki güçler tarafından kontrol edilen etkinliklere karşı gösterdiği davranışlarla açıklanabilir. Dışsal olarak motive olmuş bireyler belli işlerin süreçlerine odaklaşmak yerine, sonuca odaklanırlar. Örneğin, bir öğretmen, eğitim camiasına girerken maaş, birilerini yönlendirme ya da aile bireylerini memnun etme amaçlarını güdüyorsa, bu bireyin dışsal olarak motive olduğu söylenebilir. Çünkü bireyi motive eden birincil kaynak sonucu yani her ay alınan düzenli para, birilerini kendi istediği doğrultuda yönlendirme ya da ailesi gözünde iyi bir yere sahip olmaktır.

Bu araştırmanın iki amacı vardır. Birincisi, öğretmen adaylarının öğretmeye karşı motivasyonunu Öz-Belirleme Kuramı perspektifinden ölçen Öğretme Motivasyonu Ölçeği geliştirip geçerliğini kanıtlamak, ikincisi ise, içsel ve dışsal motivasyon arasındaki ilişkiyi açıklığa kavuşturmaktır. Amaçlara ek olarak, bu çalışma öğretmen adaylarının başarısını, eğitim kalitesini ve öğretme motivasyonunu arttırmada öğretmen yetiştiren programlara katkı sağlayabilir.

Yukarıda sözü edilen amaçlara dört adımda ulaşmaya çalışılmıştır. İlk adım 160 maddelik (80 içsel, 80 dışsal motivasyon) bir havuz oluşturulmuştur. İkinci adımda, uzman görüşü ve pilot testin ardından bu havuzdan 12 maddelik ölçeğe ulaşılmış ve bu ölçek öğretmen adaylarına uygulanmıştır. Üçüncü adımda, ikinci adımda eldi edilen verileri açıklayıcı faktör analizi ile inceleyerek ölçeğin kaç boyuttan oluştuğunu belirlenmiştir. Son adımda ise, ölçek ile diğer ilgili ölçekler arasındaki ilişkileri inceleyerek geçerliğe dair kanıtlar toplanmıştır.

Bu çalışmaya Amerika Birleşik Devletleri'ndeki büyük bir üniversitede Eğitim Psikolojisi dersi alan 147 öğretmen adayı katılmıştır. Katılımcılar formları kendi hızlarında ve içtenlikle cevaplamaları konusunda bilgilendirici bir eğitime tabi tutulmuşlardır.

Çalışmaya katılan öğretmen adayları Öğretme Motivasyonu Ölçeği ile birlikte demografik bilgileri toplamak üzere hazırlanmış bir form, öğretmen Öz-Yeterlik Ölçeği Akademik Motivasyon

Ölçeği ve Öğrenmeye Yaklaşım Ölçeği'ni doldurmuşlardır. Bu ölçekler, uyuşma(convergent), ayırıcılık (discriminate) ve eş zamanlılık (kesişim-concurrent) geçerliği kanıtları toplayabilmek için seçilmiştir. Ölçekler çalışma bağlamı doğrultusunda adapte edilmiş ancak üzerlerinde büyük bir değişiklik yapılmamıştır.

Ölçeğin boyutlarını tespit edebilmek amacı ile açıklayıcı faktör analizi kullanılmıştır. Varimax eksen döndürme sonucunda öz-değeri 1 in üzerinde olan iki boyuta ulaşılmıştır. İlk boyutun öz-değeri 3.79 dur ve varyansın % 31.56 sini açıklamaktadır. İkinci boyutun öz-değeri ise 2.77dir ve varyansın 23.04 unu açıklamaktadır. Bu boyutları oluşturan maddeler gruplandığında boyutların içsel ve dışsal motivasyonu temsil ettikleri görülmüştür. Buna göre yapılan güvenirlik analizi sonuçlarına göre içsel motivasyon ölçeğinin güvenirliği .86, dışsal motivasyon ölçeğinin güvenirliği ise .76 olarak bulunmuştur.

Geçerlik analizleri de anlamlı sonuçlar vermiştir. Örneğin, öz-yeterlik ölçeği sonuçları ve içsel motivasyon alt ölçeği arasında olumlu ve pozitif bir ilişki (r=.370) bulunmasına rağmen, öz-yeterlik ve dışsal motivasyon sonuçları arasında neredeyse hiçbir ilişki olmadığı (r=-.006) görülmüştür. Bu sonuç daha önceki çalışmalarla da örtüşmektedir. Ek olarak, içsel ve dışsal öğretme motivasyonu ile uzmanlık hedefleri (mastery goals) ve performans hedefleri (performance goals) arasında geçmiş çalışmalarla tutarlı ilişkiler bulunmuştur.

Bu çalışmanın sonuçları ölçeğin iki boyuttan (içsel ve dışsal motivasyon) oluştuğunu ve geçerli ve güvenilir bir ölçme aracı olduğunu göstermiştir. Bunun yanında çalışma sonuçları araştırmacıları içsel ve dışsal motivasyonun dikey düzlemde gösterilebileceğine yönelik bulgulara da taşımıştır. Özellikle faktörler arasında neredeyse hiçbir ilişkinin olmaması (r=.039) buna bir kanıt olarak gösterilebilir.

Elde edilen güçlü kanıtlara rağmen bu çalışmanın da bazı sınırlılıkları vardır. Çalışmada sözü edilen dışsal motivasyon bazı kaynaklarda birden çok boyutta ele alınmıştır. Bu çalışma bağlamında dışsal motivasyonun tek boyutlu olduğu görülse de ileriki çalışmalarda birden çok boyut içerip içermediği araştırılabilir. İkinci sınırlılık ise katılımcıların ölçek maddelerine sosyal kabul kuralları çerçevesinde samimi olmadan yanıt vermiş olabilecekleridir.

Son olarak, öğretmen adaylarının öğretme motivasyonu, onların bu meslekte gelişimlerini etkileyebilecek farklı değişkenlerle (not ortalaması, öğretme yeterliliği, yılgınlık ya da yıpranma ile ilgili konular vb.) olan ilişkileri daha sonraki çalışmalara konu olabilir.