Validation of the Motivation to Teach Scale

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Imagine you are a high school principal interviewing three candidates for a teaching position in the English department. What candidate characteristics would most influence on your hiring decisions? Certainly, you are looking for individuals with relevant knowledge and expertise in the classroom. However, it may be difficult to distinguish among candidates along these dimensions because each undoubtedly possesses the requisite knowledge and experience. Suppose you learn during the interviews that one candidate chose teaching because it will provide him an opportunity to coach and to eventually acquire an administration position within the district. The second candidate chose to enter teaching because her parents were teachers and it was “just expected” of her. The third candidate entered teaching because she simply loves the process of teaching and cannot imagine doing anything else. Now, which candidate would you be most interested in hiring? Clearly, individuals are motivated to enter the teaching profession for a variety reasons and each may have unique influences on many aspects of their teaching.

This study was designed to develop and validate a scale designed to measure pre-service teachers’ motivation for entering the teaching profession. Motivation was defined relative to self-determination theory (SDT) (e.g., Ryan & Deci, 2000a, 2000b, 2000c), which, at its most basic level distinguishes between intrinsic and extrinsic forms of motivation (Deci, Vallerand, Pelletier, & Ryan, 1991). Whereas intrinsic motivation is reflected in activities an individual finds “...interesting and would do in the absence of operationally separable consequences” (Deci & Ryan, 2000, p. 233), extrinsic motivation is seen in behaviors done as a means to an end.
Deci’s (1971) early research suggested that virtually all human behavior can be described as either intrinsically or extrinsically motivated. More recently, he and other researchers (e.g., Deci et al., 1991) have moved away from this categorical description of motivation, identifying four levels of extrinsically-motivated behavior that are separated by the extent to which the behavior has been internalized by the individual: external regulation, introjected regulation, identified regulation, and integrated regulation. Nevertheless, even the most current depictions of motivation from a SDT perspective still depict intrinsic and extrinsic motivation as more or less dichotomous. One problem with this approach is that it is difficult to account for multiple motivations people often have to engage in a single activity (e.g., “I entered teaching because my parents did and because I love it.”).

The present study proposes an alternative view to traditional SDT approaches to motivation. Specifically, we believe that intrinsic and extrinsic motivation are unique motivations existing on orthogonal axes rather than on a single continuum. From this perspective, an individual can be described as possessing differing levels (e.g., high or low) of intrinsic and extrinsic motivation. Despite this unique perspective, we consider SDT to be an excellent framework for our study in that we believe a deeper understanding of human motivation can only enhance an already well defined theory.

The Motivation to Teach Scale (MTS) is a summative scale designed to measure pre-service teachers’ levels of intrinsic and extrinsic motivation for entering the teaching profession. This scale is important for many reasons. Deci and
Ryan (2000) noted, for example, that those who possess high levels of extrinsic motivation to perform a behavior are typically less interested, less excited, and less confident than are those who are intrinsically motivated. Consequently, overall teacher effectiveness, teachers’ behaviors toward students, and possibly attrition may be affected. Deci and Ryan (2000) also noted that intrinsic motivation is associated with better learning, better performance, and well being. Clearly, these are characteristics we would like to see in our educators.

Item and Subscale Development and pilot study

The MTS was developed in a series of phases. Phase one involved the creation of a pool of 160 items. During Phase two, we removed repetitive and/or poorly worded items and agreed on a pool of 40 (20 intrinsic and 20 extrinsic) that could be answered on a 6-point Likert scale. We established content and face validity in Phase three by soliciting feedback from three expert educational psychologists who provided feedback on the items. Several suggestions were made by these individuals and appropriate changes to the instrument were made.

Face validity evidence was established when twenty-four students completed the initial MTS item pool and provided feedback regarding the content. Few substantive suggestions were made regarding the face validity of the instrument. Items that held together well during the analysis of the pilot were included in MTS. A total of 14 items (7 reflecting intrinsic motivation and 7 items reflecting extrinsic motivation) were selected for the instrument.
Instrument Validation

Participants and Materials

One hundred thirty-five students (29 Males; 126 Females) 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) (Miller, Greene, Montalvo, Ravindran, & Nichols, 1996). These instruments were chosen in order to establish convergent, discriminate, and concurrent validity. The instruments were adapted to meet the context of the present study (e.g., motivation to enter the teaching profession).

Results from the demographic instrument indicated that, on average students were 23 years of age, were of junior standing, and were enrolled in approximately 15 credit hours.

The Teacher Self-Efficacy Scale (Schwarzer, et al., 1999) assessed participants’ self-efficacy for entering the teaching profession ($\alpha = .80$). The ATL assesses the extent to which students adopt learning, performance, future, and social goals. For the context of this study, the ATL shortened to 20 items and combined two factors (pleasing the teacher and pleasing the family) to form the social goals factor ($\alpha = .83$). Finally, the AMS assessed students’ levels of intrinsic and extrinsic motivation within academic contexts ($\alpha = .91$).

Procedures

Groups of approximately 25 completed the demographic, MTS, Teaching self-efficacy, ATL, and AMS in that order. After all data had been collected, students were
debriefed, thanked and dismissed.

Results

Reliability estimates on the Intrinsic ($\alpha = .88$) and Extrinsic ($\alpha = .77$) subscales of the MTS established that the subscales had sufficient internal consistency. Next, an exploratory factor analysis using principal component analysis with Varimax rotation yielded two factors, corresponding to Intrinsic and extrinsic motivation. The two factors had eigenvalues of 4.4 and 3.0, respectively and accounted for 53% (31.2 % on factor 1; 21.66% on factor 2) of the variance in MTS scores. Table 1 provides the means (and standard deviations) and commonalities for the fourteen items in the MTS.

Validation of the MTS

To gather convergent, discriminate, and concurrent validity evidence, we calculated correlations among the MTS, ATL, and AMS subscales, as well as the Teacher Self-Efficacy scale (See Table 2)

Intrinsic motivation subscale. 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 show no relationships with performance, future, and social goals. Results revealed the intrinsic motivation subscale of the MTS to be related positively to 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 ($r = .37; \ p < .001$). There were no 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. We predicted the extrinsic motivation subscale of the MTS would correlate positively to the extrinsic subscale of the AMS, and with the performance, future, and social goal subscales of the ATL. We also predicted this subscale would show no relationships with self-efficacy, learning goals, or intrinsic motivation. 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 2, there was no relationship between intrinsic and extrinsic motivation subscale of the MTS, providing evidence of the independent nature of the two constructs.

Discussion

This study was designed to develop and validate the Motivation to Teach Scale (MTS), a summative scale designed to measure pre-service teachers’ levels of intrinsic and extrinsic motivation. Results yielded two distinct factors corresponding to intrinsic and extrinsic motivation. Additionally, validity evidence garnered for the MTS seems to provide ample support for the claim that the MTS assesses students levels of intrinsic and extrinsic motivation to teach.

Results of this study 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. Our results suggest otherwise. If dichotomous, then not only should the relationship between the intrinsic and extrinsic subscales be negative, but also the relationships among each subscale to the other scales should indicate a dichotomous relationship. In this study, the factor analysis revealed two independent factors; there was virtually no relationship between the subscales; and the relationships each subscale had to the other instruments supports the idea of orthogonal subscales over dichotomous subscales.

Empirically, the present study offers an initial glimpse at an alternative motivation instrument that, to this point, appears to be a reliable and valid measure of intrinsic and extrinsic motivation. Clearly, subsequent research needs to establish further evidence for the validity of the MTS. Specifically, by further validating the MTS with a new sample using confirmatory factor analysis would provide significantly more evidence for the scales reliability, validity, and usability. From a more practical perspective, if intrinsic and extrinsic motivation are orthogonal rather and dichotomous constructs, then it might be more beneficial for educators to concentrate on building students’ intrinsic motivation rather than lessening extrinsic motivation. Finally, we believe 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.
Motivation to Teach

References


Table 1. Means and commonalities for items on the MTS

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Commonalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.54 (1.17)</td>
<td>0.336</td>
</tr>
<tr>
<td>2</td>
<td>3.36 (1.44)</td>
<td>0.554</td>
</tr>
<tr>
<td>3</td>
<td>4.35 (1.29)</td>
<td>0.642</td>
</tr>
<tr>
<td>4</td>
<td>4.01 (1.12)</td>
<td>0.387</td>
</tr>
<tr>
<td>5</td>
<td>3.57 (1.33)</td>
<td>0.568</td>
</tr>
<tr>
<td>6</td>
<td>4.96 (1.04)</td>
<td>0.599</td>
</tr>
<tr>
<td>7</td>
<td>3.68 (1.15)</td>
<td>0.605</td>
</tr>
<tr>
<td>8</td>
<td>2.86 (1.09)</td>
<td>0.389</td>
</tr>
<tr>
<td>9</td>
<td>4.50 (1.41)</td>
<td>0.770</td>
</tr>
<tr>
<td>10</td>
<td>4.89 (0.97)</td>
<td>0.601</td>
</tr>
<tr>
<td>11</td>
<td>3.90 (1.20)</td>
<td>0.587</td>
</tr>
<tr>
<td>12</td>
<td>5.13 (0.76)</td>
<td>0.358</td>
</tr>
<tr>
<td>13</td>
<td>4.54 (1.26)</td>
<td>0.493</td>
</tr>
<tr>
<td>14</td>
<td>3.80 (1.07)</td>
<td>0.512</td>
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