The explanation and prediction of the student’s school performance on the basis of explanation of internal motivational factors with structured functional model at Rural in Sanandaj City high schools

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Abstract

The main aim of the present study was to test a motivational model to explain the conditions in which rural high school students form their school performance. The model argues that motivational variables motivate school performance whereas this motivation can be either supported in the classroom by autonomy-supportive teachers, or it would be frustrated by controlling teachers. LISREL analyses of questionnaire data obtained from 365 rural high school students showed the degree of perceived value of schooling predicted students’ self-determined motivation and perceived competence. The provision conditions of autonomy support within classrooms predicted perceived competence and school performance.

Keywords: perceived value of schooling, Perceived teacher autonomy support, Self-determined motivation, Perceived competence, School performance;

1. Introduction

The academic performance of the students is influenced by different factors including socio-economic status, family atmosphere, relational network of the persons, the type of the school and training facilities, the interaction of the teacher and student and so forth and these factors contributed to a series of academic problems which some of them cannot be resolved without the eradication of the essential factor; but some of the academic problems and underachievement were not stem from those factors, rather one can attribute them in shortage of the performance in psychological organization level and in other word, in personality and motivational factors.

When schools face severe limitations in external resources (e.g., Socioeconomic constraints), as it is common with geographically remote rural schools, they must rely on other kinds of resources to support the goals of achievement and persistence. Although some rural students have resources at home to support positive academic outcomes, many face resource deficits at home and community associated with low achievement and dropout risk (e.g., low socioeconomic status, single-parent families, low parental education, low parental and community valuing of education; Fowler & Walberg, 1991; Haller & Virkler, 1993; Murray & Keller, 1991). Looking at the conducted studies concerning drop out of high school indicates that motivation factor is involved in deciding to drop out (Bean, 1985; Rumberger, 1987; Tidwell, 1988; Tinto, 1975). Most studies have shown that motivation could be resulted in important outputs. Some of these outputs are trying to experience positive emotions in the classroom, psychological...

Furthermore, most of the experimental studies have shown that people show less durability when motivated to do a task externally, in comparison with those who motivated internally, (Deci & Ryan, 1985). Although teachers do not control students’ out of school circumstances, they can nevertheless provide classroom contexts that foster situational engagement, nurture interest, and promote the development of internal motivational resources (Deci, 1995; Hidi & Harackiewicz, 2000; Reeve, 1996; Sansone & Morgan, 1992). When teachers support their students’ interests (rather than control their behavior), students are more likely to find value in their schooling (Vallerand & Bissonnette, 1992; Vallerand, Fortier, & Guay, 1997). Once nurtured and developed in the classroom, motivation can therefore function as a student-owned internal resource that contributes significantly to the decision to persist in school. One promising theory to understand the motivational influences underlying students’ intentions to continue versus dropout of school is self-determination theory (Deci & Ryan, 1985; Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan & Deci, 2000; Vallerand et al., 1997; Reeve & Jang 2006). According to this theory, students become actively engaged in educational activities to the extent that classroom endeavors affirm their competencies and prove themselves to be interesting and relevant to students’ lives. The basic needs of competence and self-determination explain the motivational source underlying students’ experiences of becoming interested in school and internalizing school related values. As needs, both competence and self-determination represent energizing states that, if nurtured, facilitate interest enjoyment, engagement, and well-being (Ryan and Deci, 2000).

The purpose of this study is the explanation and prediction of the student’s school performance on the basis of explanation of the internal motivational factors in self-determined motivation theory (Deci and Ryan, 1985) with structured functional model at rural high school. The proposed motivational model for predicting student’s school performance is shown below at the figure 1. This model is composed of five latent constructs - Perceived value of schooling, Perceived teacher autonomy support, Self-determined motivation, Perceived competence and School performance.

![Figure1. Hypothesized motivational model to explain rural high school students' school performance](image)

2. Research Methods

This study is structural functional modeling that its purpose is investigating the relationship of internal and external hidden constructs in this model and finally providing motivational model in order to predict student’s school performance.

3. Subjects

The population of this study is all third grade secondary and high school students of Sanandaj City. Due to the formulation of a structural functional modeling, a large sample was selected. Thus, 365 students were selected by
categorical sampling. We have tried to choose the rate of participants equally and from the same school grades which all are in the same range in number.

4. Measures

4.1. Perceived Teacher Autonomy Support

We assessed perceived teacher autonomy support with a modified version of the Learning Climate Questionnaire (LCQ; Williams & Deci, 1996).

4.2. Perceived Value of Schooling

In order to assessing the school perceived value, we used three-item scale of Deci and Colleagues (1991).

4.3. Self-determined Motivation

We assessed self-determined academic motivation with the Academic Self-Regulation Questionnaire (ASRQ; Ryan & Connell, 1989), (Fortier et al., 1995).

4.4. Perceived Competence

In order to assessing, we used the perceived competency of the Harter (1982).

4.5. School performance

We assessed school performance with two indicators. The first was self-reported grade point average (GPA). A single item asked students to “estimate your grade point average,” using a 0.0 to 4.0 scale. The second indicator was a scale to assess anticipated academic performance which used the following three items: “In terms of academic performance, I expect to do well,” “In terms of academic performance, I expect to do better than most of my classmates,” and “My expectancies for career success are very, very high.” Hadre and Reeve (2003) reported the reliability of this scale 0.79 (\(\alpha = .79\)).

5. Data Analysis

We tested the hypothesized motivational model using structural equation modeling (using LISREL 8.25). Although in order to investigating fitness of presumed model with observed data and comparison to the substitute model, we relied on two chi-square statistics. As you can see in the table, the model has two internal variables (school perceived value and perception of teacher support of self-autonomous) and the three external variables (self-determined motivation, perceived competence and school performance). The mean, standard deviation, matrix of correlation is calculated for the five variables.

<table>
<thead>
<tr>
<th>variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived value of schooling</td>
<td></td>
<td>0/476”</td>
<td>0/434”</td>
<td>0/559”</td>
<td>0/373”</td>
<td>0/165”</td>
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</tbody>
</table>
In order to evaluating the presumed model to which extent is fitted with the acquired data, in addition to chi-square and the critical size of the sample, we also rely on the three fitness indices (Bollen and Long, 1993). The non-significant chi-square indicates fitting model with the data. When the sample size is large, the other indices indicate fitness of the model (Hadrre and Reeve, 2003). Thus, the chi-square index equal or less than 2 suggesting adequate fitness and the sample size should be more than 200 subjects. The other important indices are including Root Mean Square Error of Approximation (RMSEA) Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), Standardized Root Mean Square Residual (SRMR), and Comparative Fit Index (CFI).

The higher the GFI and CFI (higher than 0/90), the better and compare the lack of the presumed fitness model with independent model, while whatever the SRMR is lower (lower than 0/50, the acquired model show the better fitness (Hu and Bentler, 1999). In sum, for assessing the fitness of model, researchers are using 5 indices that are including: Chi2, sample size, GFI, CFI, and SRMR.

<table>
<thead>
<tr>
<th>index</th>
<th>standardized coefficient</th>
<th>non-standardized coefficient</th>
<th>Quantity of T</th>
<th>(p)</th>
<th>Significant</th>
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<tbody>
<tr>
<td>$\Phi_{11}$</td>
<td>0/72</td>
<td>0/59</td>
<td>6/59</td>
<td>0/05</td>
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</tr>
<tr>
<td>$\Phi_{11}$</td>
<td>0/67</td>
<td>0/67</td>
<td>6/36</td>
<td>0/05</td>
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<tr>
<td>$\Phi_{21}$</td>
<td>0/82</td>
<td>0/95</td>
<td>4/09</td>
<td>0/05</td>
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<tr>
<td>$\Phi_{22}$</td>
<td>0/25</td>
<td>0/19</td>
<td>2/00</td>
<td>0/05</td>
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<tr>
<td>$\beta_{21}$</td>
<td>0/30</td>
<td>0/35</td>
<td>2/69</td>
<td>0/05</td>
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<tr>
<td>$\beta_{22}$</td>
<td>0/77</td>
<td>0/45</td>
<td>7/85</td>
<td>0/05</td>
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</tr>
</tbody>
</table>

**P<0.01, N=365**
6. Discussion and Conclusion

One important role that teachers play in helping students developing these internal motivational resources is through the provision of autonomy supportive classrooms, which we define as those that support and nurture students ‘Like those before us’ (Vallerand et al., 1997). We found out that as far as students perceived that these needs are being neglected or frustrated, they become vulnerable to begin formulating dropout intentions. Our essential finding was that an autonomy supportive climate, as perceived by students, nurtured critical motivational variables (i.e., self-determined motivation, perceived competence) that predicted students to persist in high school. And they did so in a way that was above and beyond the effect which perceived school performance had upon intention to persist. Poor achievement is an especially strong predictor of dropout intentions (e.g., Battin-Pearson et al., 2000). We strongly agree that poor achievement forecasts and helps shape students’ intentions to drop out of school. We further agree that focusing dropout prevention efforts on improving students’ academic success is a promising strategy, especially when prevention strategies focus on the academic achievement of children at earlier ages.

What is important about our findings, however, is that a unique and substantial portion of dropout intentions also arise from the two important motivational resources of self-determined motivation and perceived competence. Hence, much can be gained in both theory and practice by thinking about dropout as not only an achievement issue but also as a motivation issue. In order to confirm this topic, in this study, we added a variable to the model that its role was not identified at the model of Hadre and Reeve (2003). Also, we reviewed its relationship with other variables. School perceived value along with self-determined motivation in research of Wigfield and Eccles (1992, 2000) by deciding to drop out showed positive relationship and we brought these variables in our study. The results showed that there was a statistically significant relationship between this variable and the other mediating
motivational variables, perceived competence and self-determined motivation and influential on the school and persist to versus drop out. Meece, Vigfield and Eccles (1990) found that perceived value of mathematics predicts success and failure of the students in this subject in the coming academic terms and our study is consistent with those findings. Also, in the confirmed model of this study mediating variable, perceived competency showed its relationship to the independent variables, school perceived value and perceived teacher autonomy support. As we can conclude that perceived competency has a mediating role of motivational variables on the school performance and finally deciding to persist versus drop out of school and this important finding is consistent to the studies of Bandura (1994), Bandura and Schunk (1981) and Viegfield (1994) who proved that self-efficacy expectations and outcome has a big role as much as the perceived competence. In order to confirm this topic, in this study, we added to the model that is not identified its role at the model of Hadre and Reeve (2003).

Our investigation specifically focused on rural students. It is interesting to compare our findings on the beneficial effects of teachers’ autonomy support on students’ motivation across urban and rural samples. Also, we propose that the influence rate of the motivational variables in this study to be compared in two big sample of rural and urban. Because of the current literature, it seems that the influence of perceived teacher autonomy support on the school performance and deciding to persist versus drop out is strength that in rural students in relation to the urban students and the motivation of the rural students influenced more relatively than urban students of the teacher motivational styles.

We acknowledge three limitations that pertain to our measures and three more limitations that pertain to the generalizability of our findings. In terms of measurement-related limitations, the first is that we assessed students’ holistic perception of all their teachers, because our goal was to investigate students’ intentions to drop out of school (rather than to drop out of a particular subject area). We nonetheless acknowledge that students will perceive varying levels of autonomy support from different teachers and in different subject areas (e.g., English, science), as teachers’ motivating styles vary considerably even within the same school. The second measurement-related limitation is that we did not assess socioeconomic status as an individual difference characteristic. The third measurement-related limitation involved our outcome measure self-reported intention to persist in school. That is, we did not assess students’ actual dropout behaviors. We intentionally selected this particular outcome measure, however, because we wanted to investigate students’ decision-making process as they formulate intentions to continue versus drop out. Three aspects of our research limit the generalizability of our findings. The first was our reliance on a common method (self-reported questionnaire data) to assess each variable. Past studies show that our self-report measures do predict their behavioural manifestations (school performance, Battin-Pearson et al., 2000; dropout, Vallerand et al., 1997), but our reliance on a common method might overestimate the magnitude of the effects we found among the latent constructs. A second factor that might artificially increase these estimated effects is time. That is, we collected our data using a cross-sectional, rather than a longitudinal, research design. Experiences like having one’s autonomy supported and formulating an intention to drop out of school occur over time and in such a way that a longitudinal research design could estimate the effects in our model more precisely. The third generalizability-related limitation is that we studied students’ perceptions of only their teachers. In addition, students’ perceptions of the school climate as autonomy supportive versus controlling are influenced by their relationships with their parents (Grolnick & Ryan, 1989) and school administrators (Vallerand et al., 1997). Our findings have practical implications. When teachers provide their students with autonomy-supportive environments, they provide a classroom climate capable of nurturing motivation directly and nurturing achievement and persistence indirectly.

Small, rural schools need valid and achievable ways of compensating for the constraints they face as they strive to graduate 90% of their students. External opportunities and support systems are important allies to improve high school completion rates. Lacking access to these external resources, rural schools can turn to the more controllable inner resources of their students, namely, achievement and motivation. Dropout interventions that focus on the goal of reversing poor achievement have been shown to be effective. Our study goes one step further in suggesting a second ally to improving high school graduation rates in that we were able to highlight the potential effectiveness the motivational intervention strategy of providing students with a learning climate that support students’ autonomy. In practice, doing so means providing classroom climates in which teachers offer their students choices and options, respect students’ agendas, acknowledge their feelings and questions, and offer learning activities relevant to students’ goals and aspirations.
References


