



Research Paper

Causal Explanation of Academic Buoyancy Based on Teacher-Student Interaction, Self-Efficacy and Academic Hope

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Abstract

The aim of this study was to investigate the relationship between teacher-student interaction and academic buoyancy with the mediating role of academic self-efficacy and academic hope. This study is descriptive and study design is correlational plans type of the structural equations. Statistical population of the study comprised all senior high school students of Urmia in the academic year 2019-2020. A total of 205 individuals were selected through cluster random sampling. Murray and Zvoch teacher-student interaction scale (2011), Patrick, Hicks and Ryan's academic self-efficacy scale (1997), Khormaie and Kamary academic hope scale (2017) and Hoseinchary and Dehganizade academic buoyancy scale (2012) were used to collect the data. Lisrel software was used to analyze the data and the proposed model was evaluated using structural equation modeling. The results of this study revealed that teacher-student interaction, academic self-efficacy and academic hope were directly related to the academic buoyancy of students. Furthermore, teacher-student interaction was indirectly related to the academic buoyancy of students through academic self-efficacy and academic hope. These findings support the mediating role of academic self-efficacy and academic hope in the causal relationship between teacher-student interaction and academic buoyancy. Accordingly, it can be

concluded that improved teacher-student interaction combined with students' academic self-efficacy and academic hope increases their academic buoyancy.

Keywords: *Academic buoyancy, Teacher-student interaction, Academic self-efficacy, Academic hope*

Introduction

Academic buoyancy is among the factors that protect students against academic problems (Golestaneh & Behzadi, 2019). Academic buoyancy refers to students' capacity to successfully overcome academic setbacks, difficulty and adversity (Martin & Marsh, 2019). Academic buoyancy is affected by various factors, one of which is self-efficacy (Ranjbar, et al., 2019), defined as an individual's belief in their ability to complete academic tasks and achieve academic goals (Friesen, 2019). The results of various studies have shown a direct and significant relationship between academic self-efficacy and academic buoyancy (Yun, et al., 2018).

Another factor affecting academic buoyancy is academic hope (Dehghani, et al, 2018), defined as a belief or expectation of education, a belief by which one expects to achieve positive results in one's education (Hansen, et al., 2014). Sadoughi & Hesampour (2019) reported a positive and significant relationship between hope and academic buoyancy.

Teacher-student interaction is another factor affecting academic buoyancy (Roorda, et al., 2019), defined as classroom management, classroom and non-classroom communication between teachers and students (Zendarski, et al., 2020). Martin and Marsh (2008) concluded that there is a direct relationship between academic buoyancy and the teacher-student interaction, self-efficacy and academic engagement.

Considering the relationship between these variables, the present study aims to investigate the relationship between teacher-student interaction and buoyancy with the mediating role of academic self-efficacy and academic hope.

Methodology

Given the nature of the subject and purpose of the research, this study is descriptive with correlational design of structural equation modeling. The direct and indirect effects of variables can be investigated in the hypothetical model through this method. We used Lisrel software to analyze the data. Statistical population comprised all senior high school students of Urmia in the academic year 2019-2020. A total of 205 individuals were selected through cluster random sampling.

In this study, the following questionnaires were used to collect data:

A. Teacher-student Interaction Questionnaire Murray & Zvoch (2011):

This questionnaire consists of 17 items in three subscales of relationship (8 items), trust (5 items) and alienation (4 items). Cronbach's alpha of 0.86 confirmed the reliability of this instrument.

B. Academic Hope Scale (Khormae & Kamari, 2017). This scale consists of 27 items that measure academic hope in four dimensions: hope to gain opportunity, hope to gain life skills, hope to usefulness of school and hope to gain competency. In this study, Cronbach's alpha test was used to evaluate the reliability of this instrument, which was 0.90.

C. Academic Self-efficacy Questionnaire (Patrick, Hicks & Ryan, 1997). This scale has five items that reflect students' perceptions of their competence in completing class assignments. Cronbach's alpha of 0.93 confirmed the reliability of this instrument in the present study.

D. Academic Buoyancy Questionnaire (Hosseinchari & Dehganizade, 2010): This questionnaire consists of 9 items. Cronbach's alpha of 0.94 confirmed the reliability of this instrument in the present study.

Results

Of the study population, 102 were boys and 103 were girls. Furthermore, 30 were in the tenth grade, 40 in the eleventh grade and 135 in the twelfth grade. Table 1 shows the results for direct and indirect effect coefficients.

Table 1: Direct and indirect effects of the tested research model.

Indirect effect	value t	Direct effect	Path
	6.48	0.63***	teacher-student interaction < academic hope
	6.77	0.60***	teacher-student interaction < academic self-efficacy
	2.92	0.36***	teacher-student interaction < academic buoyancy
14.0	2.28	0.22*	teacher-student interaction < academic hope < academic buoyancy
*11.0	2.31	0.19***	teacher-student interaction < academic self-efficacy < academic buoyancy

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

According to Table 1, the direct effect of student-teacher interaction on academic hope (0.63), on academic self-efficacy (0.60) and on academic buoyancy (0.36) are significant at $P < 0.001$. The direct effect of academic hope on academic buoyancy (0.22) and the direct effect of academic self-efficacy on academic buoyancy (0.19) are also significant at $P < 0.001$. Student-teacher interaction indirectly and significantly affected academic buoyancy with the mediating role of academic hope (0.14, $P < 0.01$) and with the mediating role of academic self-efficacy (0.11, $P < 0.05$). To evaluate the fit of the tested model, three categories of indicators of absolute, comparative and parsimonious fit were used. According to Kline (2011) criteria, the results showed that the model of the present study has a good fit.

Conclusion

The results showed that teacher-student interaction is directly related to academic buoyancy, and indirectly related to academic buoyancy through academic hope and academic self-efficacy. Meanwhile, academic hope and self-efficacy are both directly related to academic buoyancy. Teacher-student interaction is directly related to academic hope and self-efficacy. Among the limitations of the present study are statistical population of the research limited to high school students, failure to prove cause and effect in the structural equation model, and the lack of confidence in the answers of the participants. It is suggested that future research examine the role of other social and individual factors affecting academic buoyancy.

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