Association of Academic Buoyancy with School-Related Anxiety and Social Participation among Students Educated via the Educational Approaches of Mizan and Regular Schools

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Abstract

Background: Academic buoyancy can be a major factor in the psychological-educational perspective and can contribute to solving students' problems in their school life. The present study aimed to investigate the association of academic buoyancy with school-related anxiety and social participation among students educated via the educational approaches of Mizan and regular schools in Tehran, Iran.
Methods: The current study was descriptive-correlational. The study population comprised of all elementary-school students in Tehran in the 2018-2019 academic year. A sample of 606 students was selected from regular and guided discovery schools (300 students from regular and 306 from Mizan guided discovery schools). The research instruments included the Academic Buoyancy Scale, the School Anxiety Scale, and School Bonding Questionnaire. Data were analyzed using the Pearson correlation coefficient and structural equation modeling was applied to predict the relationships among variables.
Results: The results showed that the scores of academic buoyancy and social participation were significantly higher among students receiving guided discovery than that of those receiving traditional education (P=0.014). The scores of school-related anxiety were significantly lower among students receiving guided discovery than that of those receiving traditional education (P<0.001). According to the results, there was a negative association between school-related anxiety with school-related social participation and academic buoyancy. Moreover, the association between school-related social participation and academic buoyancy in the students was positive and significant (P<0.001).
Conclusions: The study findings further highlighted the significance of considering academic buoyancy and social participation in school-related anxiety. It is considered a crucial step in understanding the factors affecting school-related anxiety in students.

Keywords: Anxiety, Social participation, Schools, Self-concept, Students

Introduction

Discovery-based approaches highlight the development of personal skills and capabilities in addition to education. Social skills acquisition is one way for emotional-moral development. Academic buoyancy has been defined as the students' ability to successfully overcome failures and challenges that are common in everyday school life, including poor performance, the pressure of competition, and difficult tasks (1). Based on this definition, academic buoyancy can be a major factor in the psychological-educational perspective and can contribute to solving students' problems in their school life. Academic buoyancy is a factor helping students deal with educational risk factors repeatedly occurring in academic life particularly in difficult situations, such as preparing for an exam, in the face of poor performance, negative feedback from teachers, educational pressure, and at high school (2).

In this sense, academic buoyancy can be regarded as an educational empowerment structure that can facilitate students' participation in teaching and learning in the classroom (3).

Students' school performance depends on a wide range of factors, including intelligence, motivation, educational atmosphere, self-discipline, parental support, and the school environment (4). Meanwhile, there are factors influencing students' performance, academic achievement, and academic buoyancy, including their school-related stress and social (school-related) participation, viewed in the present study as a conceptual model (5).

School-related stress is observed in most students (6). New studies deal with students' educational problems in different forms of stressors, namely the learning curve, competitive pressure, and classification

of students into intelligent and normal in transition from high-school to university (7, 8). Stress has risen among adolescents in recent decades and schools have become a source of stress with negative impacts on youths' psychological well-being and health. Stress can be viewed as a state of disequilibrium, occurring when the environmental demands exceed the individual's perception or evaluated capability for coping with them (9). Adolescents spend considerable time doing school assignments, which exposes them to educational challenges and a negative correlation is often found between stress and academic achievement in school performance. Moreover, concerns about the future and the newly emerging responsibility associated with transition into adulthood increase perceived stress (10). Research shows that there is a negative correlation between health problems and academic success. In other words, by reducing stressors, school performance decreases school-perceived stress, thereby raising academic buoyancy (11). Dalir Naser and Hosseini Nasab (12) demonstrated that students of smart elementary schools scored higher than other students in terms of academic achievement motivation and academic help-seeking. Students at Mizan schools also had a significantly lower level of anxiety.

Another effective factor in the academic buoyancy model is social participation at school. In recent decades, the concept of cooperative learning has expanded in education by focusing on the mutual dependency among students (13). People's characteristics affect how they react to their social environment and their development is affected by their interaction with their micro-system. Furthermore, the person and context have an interaction effect on development; in other words, social relationships affect academic success and participation (14). Östberg and colleagues (11) showed that there is a negative correlation between health problems and academic success. Moreover, Collie and colleagues (15) reported that the use of learning strategies is predicted by several motivational variables, including academic buoyancy, and higher levels of academic buoyancy are associated with a higher perception of learning strategies. Shin and Ryan (16) reported a correlation between social relationships, school participation, and academic achievement. In other words, students with higher social and school participation demonstrate marked development owing to their interaction and meaningful presence in the school's educational atmosphere.

The literature indicates a correlation between social relationships, school participation, and academic achievement (16, 17). Meanwhile, the effect of parents and peers is more prominent on different educational outcomes, including interaction with school and success. Students' school participation indicates their presence, participation, and positive behavior at school and comprises psychological and behavioral commitments, including a sense of attachment to teachers and peers, commitment to school, and educational and non-educational behavior (18). Studies revealed a relationship between school participation, peer relations, and academic achievement. In addition, school participation correlates with a wide range of positive outcomes, such as excellent academic achievement and high psychological adjustment (19, 20). Wang and colleagues (20) demonstrated that school participation correlates with a wide range of positive outcomes, such as excellent academic achievement and high psychological adjustment.

Some students in academic settings are similar in terms of talents, capabilities, and learning opportunities, but show a considerable difference in academic performance. On the other hand, there are students who demonstrate high performance and perseverance despite having average talents. This suggests that, in learning and teaching, there is another key factor to progress in addition to personal characteristics, such as intelligence, talents, and capabilities. Overall, creativity, self-esteem, and mental skills (problem-solving and decision-making) were higher among the students at Mizan elementary school than among those at private schools. Accordingly, the present work aimed to investigate the association and comparison of academic buoyancy with school-related anxiety and social participation among students educated via the educational approaches of Mizan and regular schools.

Methods

The present study was descriptive-correlational. The statistical population comprised elementary-school students in Tehran in the 2018-2019 academic year. A sample of 606 students was selected from regular and guided discovery schools (300 students from regular and 306 from Mizan guided discovery schools). To select the sample, four public elementary-schools and six Mizan guided discovery elementary-school were chosen from the elementary-schools in Tehran city using simple random sampling. After making coordination with the selected schools for administering the questionnaires, the research objectives were explained to the participants, who then provided written informed consent for participation.

To this end, a letter of introduction was first obtained from the Research Unit of the Department of Education (Tehran) to enter the schools. Afterwards, by visiting the target schools, coordination was made to access the students. Three classes from each regular school (12 classes in total) and 25 students from each class were considered as samples (a total of 300 students). Additionally, three classes from each guided discovery school (18 classes in total) and 17 students from each class were selected as a sample (a total of 306 students). The participants were homogeneous in terms of sex, age, grade, and their parents' education level. Subsequently, the questionnaires were administered, collected, and scored. The inclusion criteria were as follows: elementary-school students with average intelligence quotient (IQ) and without any disorder (learning, attention, or concentration disorder). The exclusion criteria were not responding to >5% of the questions.

Research Instruments

Academic Buoyancy Scale: This nine-item scale was designed by Martin and Marsh (21). The items are scored on a five-point Likert scale from 1 (totally disagree) to 5 (totally agree). The minimum and maximum scores obtainable on this scale are 9 and 45, respectively. This scale is reliable in terms of internal consistency and test-retest reliability (Cronbach's alpha=0.80, test-retest coefficient=0.67). The results of examining its internal consistency showed a Cronbach's alpha of 0.80 by removing one item and a test-retest coefficient of 0.73. The content validity of the Persian version of the scale was examined and confirmed. Moreover, in the Persian version of academic buoyancy scale, the content validity ratio (CVR) and content validity index (CVI) were reported to be 0.86 and 0.80, respectively (22). In the present paper, the validity of the Persian version of this scale was assessed and confirmed by 10 experts (CVI=0.90, CVR=0.89). Cronbach's alpha coefficient of the scale was 0.88.

The School Anxiety Scale: This scale was developed by Phillips (23). It has 74 items and assesses four domains. The responses are yes, no, and sometimes. The scores on this scale ranges between 0 and 70. Although a certain level of anxiety is necessary for performing daily tasks, if anxiety exceeds the normal level, it will hinder the tasks. Anxiety has different forms, including school anxiety. This scale measures four domains, fear of self-expression, test anxiety, lack of self-confidence, and physiological reactions. Based on face, concurrent criterion, and construct validity measures, the validity of the Persian version of scale is confirmed and its reliability is reported to be 0.94. (24). In the study of Vafa and colleagues, the CVR and CVI of the Persian version of scale were reported to be 0.89 and 0.84, respectively (25). In this work, 10 experts confirmed the content validity of the school anxiety scale (CVI=0.93, CVR=0.86) and Cronbach's alpha coefficient was 0.87 for the scale.

School Bonding Questionnaire (SBQ): SBQ was designed by Rezaei Sharif and colleagues (26). This 40-item questionnaire assesses six components, attachment to teachers, attachment to school, attachment to school's staff, involvement in school, and belief in and commitment to the school. School bonding refers to the students' relationships with the school and other aspects of academic life. A five-point Likert Scale was employed for scoring, starting from never (1) to always (5). The minimum and maximum scores obtainable on this questionnaire are 40 and 200, respectively. A Cronbach's alpha coefficient of 0.93, 0.88, 0.80, 0.81, 0.73, and 0.73 were reported respectively for the subscales of attachment to teachers, attachment to school, attachment to school's staff, involvement in school, belief in and commitment to the school (26). Rezaei Sharif and colleagues (26) reported that the content validity of the questionnaire was assessed and confirmed by five experts. Moreover, the CVR and CVI were reported to be 1.00 and 0.99, respectively.

Statistical Analyses

Data were analyzed using the Pearson correlation coefficient and analysis of variance. Structural equation modeling was employed to investigate the association among variables. SPSS software version 21.0 was used to analyze the data.

Results

The participants included 606 male and female students of Mizan and regular schools of Tehran, aged between 10 and 13 years old. The demographic variables of the participants are shown in Table 1. The descriptive statistics, such as mean and standard deviation (SD), of the research variables are presented in Table 2. Based on Table 2, the Mean±SD score of academic buoyancy was 36.44±3.49 and 31.66±9.30 among students receiving guided discovery and regular education, respectively. Thus, the mean scores of academic buoyancy was higher among students receiving guided discovery than that of those educated with regular methods. Moreover, the mean scores of the school-related anxiety were lower among students receiving guided discovery (9.88±2.31)

Table 1: Demographic variables of the participants.

Groups	Mean±SD age (years)	Mothers' education		Gender	
		High school education	College education	Male	Female
Discovery-based approaches	11.25±1.72	20.00% (n=60)	80.00% (n=240)	56.33% (n=169)	43.67% (n=131)
Traditional education	11.62±1.35	76.67% (n=230)	23.33% (n=70)	67.67% (n=203)	32.33% (n=97)
P	0.860	0.079		0.411	

Table 2: Mean and standard deviation (SD) of the research variables

Variable	Discovery-based approaches	Traditional education	P
	Total score Mean±SD	Total score Mean±SD	
Academic buoyancy	36.44±3.49	31.66±9.30	0.014
School-related anxiety	9.88±2.31	25.38±6.41	<0.001
School-related social participation	117.88±11.45	79.20±10.95	<0.001

M: Mean; SD: Standard Deviation

Table 3: Pearson correlation coefficients of the research variables

Variable	1	2	3
1- Academic buoyancy	1		
2- School-related anxiety	-0.27**	1	
3- School-related social participation	-0.72**	0.22**	1

**P<0.001

Table 4: Path coefficients of effects among the research variables

Paths	β	P
School-related anxiety to school-related social participation	-3.57	<0.001
School-related anxiety to academic buoyancy	-0.29	0.008
School-related social participation to academic buoyancy	1.75	<0.001

than that of students receiving regular education (25.38±6.41). The mean score of school-related social participation was higher among students receiving guided discovery (117.88±11.45) than that of those receiving traditional education (79.20±10.95).

The results of the Pearson correlation coefficient revealed that there was a significant relationship between all the research variables (P<0.001) (Table 3). According to Table 3, there was a negative correlation between school-related anxiety (r=-0.27) and school-related social participation (r=-0.72) with academic buoyancy. The correlation between school-related anxiety and school-related social participation was positive and significant (r=0.22).

According to the results, there was a significant difference in the mean scores of academic buoyancy, school-related anxiety, and school-related social participation. In other words, the scores of academic buoyancy (P=0.014) and school-related social participation were higher (P<0.001) and the scores

of school-related anxiety were lower among students receiving guided discovery education than that of those educated with traditional methods (P<0.001).

The findings in Table 4 showed that there was a negative association between school-related anxiety with school-related social participation (β=-3.57, P<0.001) and academic buoyancy (β=-0.29, P=0.008). In addition, there was a positive association between school-related social participation and academic buoyancy in the students (β=1.75, P<0.001) (Table 4).

Discussion

The present study aimed to evaluate the association and comparison of academic buoyancy with school-related anxiety and social participation among students educated via the educational approaches of Mizan and regular schools. The findings revealed a significant difference in the mean scores of academic buoyancy among the students of discovery-based and traditional schools. As this difference was positive, it can be

concluded that the scores of academic buoyancy were significantly higher among students receiving guided discovery than that of those receiving traditional education. In daily school life, students face different challenges, obstacles, and pressures threatening their self-confidence, motivation, and therefore their academic performance. Some students succeed in coping with these pressures while some others do not succeed equally. Thus, academic buoyancy refers to a positive, constructive, and adaptive response to different forms of educational challenges and obstacles, including low grades, reduced motivation, and stress, and is a component of psychological well-being. When students perform their assignments spontaneously, they do not feel tired or hopeless, but energetic. Having such a feeling about education increases their efforts, perseverance, and eventually, academic performance. There are many educational challenges that need contemplation and are the staple of students' academic life (3). When solving these challenges, students with academic buoyancy show higher resistance, have better reflection and attention, and are probably more successful and these factors improve their academic performance.

Academic buoyancy is a multi-dimensional construct, comprising cognitive, motivational, and behavioral dimensions. The cognitive dimension makes students use different cognitive and metacognitive strategies in the learning process. The behavioral dimension increases their efforts and contributes to their success in doing the assignments with stability and help-seeking (15). In the discovery learning approach, problem-solving skills, correct planning, self-regulation, and responsibility increase students' efforts for placing and directing these behaviors to achieve higher academic buoyancy. Academic buoyancy is a high-level capability that cannot be expected from students spontaneously. It can rather be promoted by providing a conducive context, such as reducing mere competition pressure, not comparing the peers, and having great goals that contribute to assertiveness and self-confidence. Academic buoyancy is an element helping students deal with educational risk factors repeatedly occurring in academic life especially in difficult situations, namely preparing for an exam, in the face of poor performance, negative feedback from teachers, educational pressure, and at high school. In this sense, academic buoyancy can be regarded as an educational empowerment structure that can facilitate students' participation in teaching and learning in the classroom (22).

The results of this study also implied that the mean difference in school-related anxiety scores was significant among the two groups of students. As this difference was negative, it can be concluded that the scores of school-related anxiety were significantly lower among students receiving guided discovery than that of those receiving traditional education. The principle of "internalizing motivation" or "responsibility" is a principle observed in the method of Mizan schools. Based on this principle, education should be such that students view themselves as responsible for their affairs and perform tasks without recourse to external motivators, such as incentives, punishment, and reminders. Unsought and repeated reminders to children are the main reason for their forgetfulness and shrinking from responsibility. Contrary to the common belief that children should be reminded constantly, this reminding disrupts their sense of responsibility and participation (27). Excessive reminding is injurious from two perspectives: first, the receptor unconsciously feels defiant towards the reminding party and their relationship will be troubled; second, unnecessary reminders indirectly teach the receptors that they do not have to follow up their affairs because there is always someone else to remind them. Children who are constantly reminded of things have lower self-confidence, become dependent on others, cannot perform the simplest tasks in the absence of their parents, and eventually feel anxious. Most of the time, reminders given to children are the result of adults' unreasonable expectations and unnecessary rules or restrictions.

Herein, the mean scores of social participation were significantly different. As this difference was positive, it can be concluded that the scores of social participation were significantly higher among students receiving guided discovery than that of those receiving traditional education. In schools with a discovery learning approach (Mizan), all the students have the opportunity to interact and participate, which means the formation of an actual experience. In these schools, social participation is an inseparable part of the educational system, whereby the concept of participation is defined for students as an ongoing inherent duty. Students in these schools are regarded as living and dynamic elements that help realize the goals of education (28). High-school students' participation in school affairs is important with respect to the personal characteristics of adolescents in this period. At this stage of physical and mental development, the involvement of students in school affairs helps enhance their self-confidence, considers their youthful pride, and influences their other personality traits. To seek students' participation

in different school affairs, school authorities should pay attention to their behavioral sensitivity (29). Therefore, the school atmosphere is a determining factor in promoting students' social participation. Students' participation in school affairs enhances their self-confidence, reduces self-centeredness, increases their tendency to groups, and promotes their mental activity and dynamism. In addition to the psychological-personality dimension, students' participation affects the social dimension at small and large scales. If their participation in affairs is organized and based on school programs, they will be employed for organizational activity. The division of tasks and responsibilities and specification of each student's role in group activities will make social discipline the center of their activities. In this way, in addition to exploiting the outcome of students' activity to promote its affairs and reach educational goals, the school will prove to be effective in preparing today's adolescents and tomorrow's youth for accepting their roles and respectively in different social activities (30). As a result, students' participation will transfer from the small to the large scale of society and such individuals will have increasing participation in political, economic, and social affairs.

A limitation of this study was the lack of follow-up for a specific period to remeasure the differences in the scores of the two groups. Moreover, the physical and psychological status of the students was not measured when they completed the questionnaires, which could have affected the results. Another limitation was the lack of access to state-run schools whose data could demonstrate students' status in the examined variables more comprehensively. It is suggested that future studies repeat the research in at least two time periods with a three-month interval for a more reliable generalization of the results. It is also important to closely examine students' physical and psychological status as it can control the effect of other variables and provide more precise results. Finally, as there are a large number of students at state-run schools, accessing and measuring these students can provide more comprehensive information about the studied variables.

Conclusion

Overall academic buoyancy and social participation were higher among students receiving guided discovery than that of those receiving traditional education. Furthermore, school-related anxiety was lower in the students receiving guided discovery. Therefore, the study findings further highlighted the significance of considering academic buoyancy and social participation

in school-related anxiety. It is considered a crucial step in understanding the factors affecting school-related anxiety in students.

Acknowledgements

Ethical considerations

The Ethics Review Board of Islamic Azad University, Gorgan Branch, approved the present study with the following number: IR.IAU.REC.1399.09.

Conflicts of interest: None declared.

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