

Academic buoyancy of university students and its relationship with academic average in light of some demographic variables

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Abstract

Academic buoyancy reflects students' ability to encounter ordinary challenges they face in the academic context, and it positively contributes to their behaviour. This study aims to measure the level of academic buoyancy among university students, identify its relationship with their academic average and determine the differences in their academic buoyancy levels in terms of gender and academic discipline. The descriptive-analytical research design was utilised. The academic buoyancy scale was applied to 243 university students (male and female). Data were statistically analysed using correlation coefficient, arithmetic mean and two-way analysis of variance. The results demonstrated that students have a high level of academic buoyancy; there was a significant correlation between academic buoyancy and academic average; and there were no significant differences in the academic buoyancy level with regard to gender (male and female) and academic discipline (theoretical and practical). The research recommended increasing students' academic buoyancy level to help them encounter academic pressures and challenges and to solve the problems they face in their academic lives effectively.

Keywords: Academic buoyancy, academic average, demographic variables, university students.

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1. Introduction

Academic buoyancy is one of the positive psychology concepts that results in students' positive feelings, happiness and well-being. Positive psychology contributes to the expansion of positive feelings at the time of thinking and at work, based on students' permanent resources (Fredrickson, 2001). The concept of academic buoyancy focuses on the individual's response to daily challenges rather than its presence in their daily school life. Rodrigues and Magre (2018) defined it as the student's ability to negotiate successfully with daily academic stress and swing up and down with it until they have overcome it.

Academic buoyancy level varies from one individual to another according to his characteristics, skills and environmental variables. In addition, the buoyancy process occurs through various social and emotional resources and students' self-regulation (Martin et al., 2017). Buoyancy is also described as a positive variable that helps students encounter scholastic challenges, especially dangers that occur continuously, and is emphasised as a factor that helps students deal with academic difficulties.

Previous studies have agreed on the direct positive impact of academic buoyancy on academic outcomes and attitudes as adherence to classroom rules, absence of subversive behaviours, participation in school assignments, exertion, focus, attention, perseverance, participation in school activities and enjoyment of the task that yield positive student attitudes towards academic performance (Carrington, 2013; Martin et al., 2013, 2017).

Academic buoyancy can contribute to students' success by promoting positive feelings, such as enjoying learning (Martin et al., 2017). It also helps to control negative emotions such as anxiety (Collie et al., 2017). In this context, the results of Riikka et al.'s (2019) study indicated that academic buoyancy supports positive expectations and adaptive behaviours in learning situations through organising emotions and is positively related to the enjoyment of mission and hope, while negatively related to the failure of expectations.

Hirvonen et al. (2020) demonstrated that academic buoyancy strengthens positive expectations and adaptive manners in learning through organising emotions as it is positively correlated to the enjoyment of mission and hope, while negatively related to failed expectations. In addition, Rodrigues and Magre (2018) revealed a positive correlative relationship between buoyancy and positive participation among students. In addition, Abdin's (2018) study demonstrated that academic buoyancy indirectly affects academic accountability by reducing test anxiety as a mediator variable.

Buoyancy helps students manage what hinders their normal school life, such as exam stress, school assignment difficulty, weak grades and negative feedback (Datu & Yuen, 2018; Hirvonen et al., 2020; Martin et al., 2010). It is defined within the context of the current research as students' ability to respond efficiently to challenges and encounter academic pressures with conscious planning. Therefore, academic buoyancy represents one of the successful mechanisms and psychological factors that contribute to expecting students' success and behaviour directed to accomplishing tasks indirectly through creating a positive emotional atmosphere in learning situations (Pekrun et al., 2006).

Reviewing previous research and studies (Abdin, 2018; Ali et al., 2020; Carrington, 2013; Comerford et al., 2015; Halim, 2019; Mahmoud, 2018; Mohamed, 2020; Piosang, 2016) posits that academic buoyancy concentrates on the following dimensions:

- *Self-efficacy*: The judgments imposed by students who express their conceptions about their ability to learn and conduct the assigned tasks confidently and persistently.

- *Resisting pressures*: A student's capability to encounter the pressures he/she faces flexibly and calmly and to overcome the difficulties positively.
- *Engagement*: It includes the elements of student perseverance, study enjoyment, participation and good relationship with teachers and colleagues.
- *Planning*: The student's capability to accurately set his objectives and seeks to achieve them through thoughtful practical steps.

Research has also indicated that students' capability to be buoyant in encountering academic challenges is associated with significant motivational (Martin et al, 2010) and emotional outcomes (Putwain et al., 2012) that may affect their academic average. Academic buoyancy has been noted to relate to high performance in standardised literacy tests (Collie et al., 2015; Martin, 2014; Putwain et al., 2015). Moreover, academic buoyancy has been related to high self-efficiency, resilience and planning (Martin et al., 2010); high school engagement (Datu &Yuen, 2018; Martin, 2014; Martin et al., 2017); effective study strategies (Collie et al., 2017); and low self-helplessness (Martin et al., 2013). Thus, all students encounter various challenges and pressures to some degree, and buoyancy is the ability to recover from these challenges, determining positively how students react in different situations.

Martin et al. (2010) explain that academic buoyancy can enhance students' educational self-perceptions and support subsequent achievement expectations and task behaviours as it creates a positive learning atmosphere that further supports their success (Pekrun et al., 2006). It helps them handle previous frustration. High buoyant students set more positive control situations and consequently concentrate on the success probability rather than on failure (Collie et al., 2015). It is clear from the above that academic buoyancy can contribute to developing a learner's experience and outcomes. Therefore, this study is relevant as it provides a descriptive analysis that may identify students' academic buoyancy level according to some sociodemographic features (gender and academic discipline).

Hence, this study seeks to identify the level of academic buoyancy among university students, determine its relationship to their academic average and explore the differences in their academic buoyancy level in terms of gender and academic discipline. In line with the study objectives, the hypotheses are as follows:

H1: The university students – the study sample – have a high level of academic buoyancy.

H2: There is no correlative relationship between academic buoyancy and academic grade point average among the study sample.

H3: There is no statistically significant effect of the interaction between gender (males and females) and academic discipline (theoretical faculties and practical faculties) on the academic buoyancy of the study sample.

2. Methodology

2.1. Study design

The current study adapted the descriptive–analytical research approach to describe and explain why certain differences exist.

2.2. Sample

The pilot study sample consisted of 87 university students from Prince Sattam bin Abdul Aziz University (male = 46, female = 41; mean age = 21.56; SD = 1.62). They were selected to verify the study tool’s psychometric properties. The basic research sample comprised 243 students (male = 111; female = 132; theoretical disciplines = 137, practical disciplines = 106; mean age = 21.34, SD = 1.84) from the same university.

2.3. Instruments

2.3.1. The academic buoyancy scale

The academic buoyancy scale for university students was developed by the researcher after reviewing the related literature and instruments (Abdin, 2018; Amer, 2018; Halim, 2019; Piosang, 2016; Victoriano, 2016; Yun et al., 2019) to measure academic buoyancy among university students. The scale consisted of 20 items distributed into 4 dimensions: resisting pressures, self-efficacy, engagement and planning.

The participants were asked to rate each item on a 5-point Likert-type scale (strongly agree–strongly disagree). All items were formulated into positive statements. The scale was presented to five arbitrators from psychology and curricula and instruction staff members to ensure the scale’s face validity. They stated that the scale statements were suitable.

The exploratory factor analysis using the principal axis factoring was examined, where Bartlett’s test = 978.309 and the Kaiser–Meyer–Olkin test = 0.782. According to the factor analysis, the above-mentioned four factors have 62.66% of the total variance, confirming the scale’s structural validity.

To ensure the academic buoyancy scale’s reliability, confirmatory factor analysis was administrated to the participants of the pilot study. The Cronbach’s alpha coefficients ranged from 0.740 to 0.908 and from 0.637 to 0.850, with a split-half reliability method, which had high coefficients and was significant at the 0.01 level. Accordingly, the scale achieved high validity and reliability.

2.4. Analysing of the data

The following statistical methods were used: correlation coefficient, arithmetic mean and two-way analysis of variance (ANOVA) through SPSS v.24.

3. Results

3.1. The first hypothesis’ validation results: ‘The university students – the study sample – have a high level of academic buoyancy’

To test this hypothesis, arithmetic mean was utilised for the overall scores of the academic buoyancy as indicated in Table 1.

Table 1 Descriptive Statistics of the Academic Buoyancy Level Among University Students (n = 243)

Scale	Number of items	Arithmetic mean	Std.	Highest score	Lowest score	Relative weight
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Academic buoyancy scale	20	73.74	13.18	100	20	73.74%
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According to the results presented in Table 1, the academic buoyancy level of the study participants was high, and the relative weight was 73.74%, indicating the validity of the first hypothesis.

3.2. The second hypothesis' validation results: 'There is no correlative relationship between academic buoyancy and academic grade point average among the study sample'

To test the validity of this hypothesis, correlation coefficients were calculated as indicated in Table 2.

Table 2. *Correlation Coefficient Values Between Academic Buoyancy and Academic Average (n = 243)*

Academic buoyancy	Self-efficacy	Resisting pressures	Engagement	Planning	Whole degree
Academic average	0.532**	0.411**	0.323**	0.388**	0.410**

**Significant at 0.01

It is clear from Table 2 that there is a positive, statistically significant correlation at the 0.01 level between academic buoyancy (dimensions and total degree) and the academic average.

3.3. The third hypothesis validation results: 'There is no statistically significant effect of the interaction between gender (males and females) and academic discipline (theoretical faculties and practical faculties) on the academic buoyancy of the study sample'

To test the validity of this hypothesis, the two-way ANOVA was used, and this is indicated in Table

Table 3. Results of the Two-Way ANOVA for the Effect of Gender (Males and Females) and Specialisation (Theoretical Colleges and Practical Colleges) on the Academic Buoyancy Level (Dependent Variables: All)

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	65.757 ^a	3	21.919	0.125	0.945
Intercept	806,290.643	1	806,290.643	4,585.676	0.000
Sex	8.461	1	8.461	0.048	0.827
Tahasos	0.070	1	0.070	0.000	0.984
Sex * tahasos	45.163	1	45.163	0.257	0.613
Error	42,022.910	239	175.828		
Total	1,363,449.000	243			
Corrected total	42,088.667	242			

* $R^2 = 0.002$ (adjusted $R^2 = -0.011$).

Table 3 reveals that there were no statistically significant differences between the mean scores of the study sample on the academic buoyancy scale with regard to gender (males and females) where f -value was 0.048, which is not significant at the 0.05 level in academic buoyancy. In addition, there were no statistically significant differences between the mean scores of the study sample on the academic buoyancy scale with regard to specialisation (theoretical colleges and practical colleges) where f -value was 0.000, which is not significant at the 0.05 level in academic buoyancy.

Hence, there was no statistically significant interaction between gender (males and females) and specialisation (theoretical faculties and practical faculties) in the academic buoyancy of the study sample where f -value was 0.257, which is not significant at the 0.05 level in academic buoyancy.

4. Discussion

In this research, the level of academic buoyancy among university students was measured, and the relationship between this level and the academic average was examined. In addition, the extent to which the variables of gender and academic discipline can affect the students' academic buoyancy was examined. The overall results of this research support the hypotheses presented.

The findings illustrate that Prince Sattam bin Abdul Aziz University's students have a high level of academic buoyancy. These results can be attributed to the nature of university life which concentrates on the student. In addition, the staff members and teaching methodologies seek to help students to solve their problems and identify their needs, making them feel more self-confident and lower the level of anxiety. In this regard, the study concludes that self-confidence, low anxiety level and commitment affect students' academic buoyancy (Amer, 2018; Victoriano, 2016). Employing effective learning strategies and a low level of anxiety among students contributes to a high level of academic buoyancy, so students feel responsible and self-confident (Amer, 2018; Collie et al., 2017).

The high level of academic buoyancy among Prince Sattam University's students was also explained in light of the continuous psychological support and academic guidance which gave students high self-efficacy, the ability to face pressures, ability to plan and think more deeply. The ease of use and training students on it also contributed to the high level of their academic buoyancy. This result is consistent with various study results indicating that the motivational factors that students receive from professors and mentors contribute to the development of academic buoyancy (Amer, 2018; Collie, et al., 2017; Martin, et al., 2010; Rezvani et al. 2019; Victoriano, 2016).

In addition, the results illustrated that there was a correlative relationship between academic buoyancy and academic grade point average among the study sample. This result is consistent with the results of previous studies (Al Azamat & Al Mualla, 2020; Jahedizadeh et al., 2019), which concluded a positive correlative relationship between academic average and academic buoyancy level. High academic average students have a high level of academic buoyancy at the university level because they have gone through experiences that require them to raise their academic level through good planning, self-efficacy, investing free time, perseverance and overcoming difficulties.

Previous studies have supported this result indicating that academic buoyancy is associated with positive academic variables, such as high persistence and planning (Martien et al., 2010), and effective learning strategies (Collie et al., 2017). Furthermore, high buoyant students have low avoidance behaviours, encounter failure expectations, and have high planning skills. They enjoy their learning and have low boredom and helplessness.

The findings also prove that there were no differences in the academic buoyancy level among the participants with regard to gender (males and females). This result is in line with previous studies

(Jahedizadeh et al., 2019; Martin et al., 2010; Rezvani et al., 2019; Selim, 2018) and inconsistent with other study results (Al Azamat & Al Mualla, 2020; Collie et al., 2016; Datu & Yuen, 2018; Haliem, 2019). These results can be attributed within the context of the current study to the recent conditions imposed by the corona pandemic that shifted learning to e-learning in general. The educational environment provided the participants (male and female) with equal learning opportunities and goals, making them face equal pressures, challenges and costs.

In addition, there were no significant differences between the university students' level of academic buoyancy according to the academic discipline (theoretical and practical). Students of theoretical and practical disciplines are similar in setting objectives to be achieved. They have equal costs, pressures, duties and challenges in close proportions. This result agrees with Selim's (2018) study. They received technical support and academic guidance alike.

5. Conclusion

Universities are locations in which academic challenges are a common feature of adolescents' lives. Moreover, the e-learning environment creates more pressure. However, with the existence of everyday academic challenges, some students effectively manage and encounter these problems. Academic buoyancy is one factor proposed by positive psychology to be encountered. The present study represents an attempt to illustrate the significance of academic buoyancy and investigate it in light of some demographic variables (gender, academic discipline and academic average). The results of the current research were limited to its population, which were students from Prince Sattam bin Abdul Aziz University. Further studies are recommended to investigate the differences between students' academic buoyancy levels according to gender, discipline and academic average in more countries and at several educational stages. The study does not address the effect of some mediating variables such as students' family socio-economic level. Therefore, further studies are recommended to examine the factors that may affect the level of students' academic buoyancy level, such as cognitive load, or factors that may contribute to its development, such as psychological hardiness.

6. Recommendations

In light of these results, the research recommends the following: to develop academic buoyancy for undergraduate and pre-university students to improve their abilities and skills in dealing with academic pressures and challenges and to solve their problems flexibly; to hold training courses and workshops for faculty members on how to develop the students' academic buoyancy; and officials should pay attention to the fields of psychological and academic counselling for the necessity of developing training programmes to develop students' academic buoyancy during learning.

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