Clinical Cancer Investigation Journal-ISSN: 2278-0513

Predicting Academic well-being based on Perceived Classroom justice, Cognitive abilities, and Academic buoyancy In Students

Abstract

This study aimed to predict academic well-being based on the perception of classroom justice, cognitive abilities, and academic buoyancy. According to the purpose of the research, the descriptive-correlation method was used. The statistical population of the study included all high school male students who were studying in the 3rd district of Kermanshah in the academic year 2020-2021 (5381 people). From this number, according to the Morgan table and multi-stage cluster sampling method, 415 people were selected as the sample who answered the questionnaires on academic well-being of Tuminin-Soini et al (2012), perception of classroom justice of Kazemi (2016), cognitive abilities of Nejati and Shiri (2013) and academic buoyancy of Hossein Chari and Dehghanizadeh (2012). Multivariate regression and Pearson correlation analysis were used to analyze the data. The results of data analysis showed that the relationship between class justice perception, cognitive abilities, and academic buoyancy with academic well-being was significant ($P \leq 0.01$). Also, the results of multivariate regression analysis showed that the components of information justice and procedural justice with 99% confidence and the components of selective attention, decision making, planning, and sustainable attention with 95% confidence predict academic well-being. Keywords: Academic well-being, Perception of classroom justice, Cognitive abilities, Academic buoyancy.

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Mohammad Sajad Heydari
Master of educational psychology, Allameh Tabatabai University, Tehran, Iran

Esmaeil Saadipour
(Corresponding Author)
Professor, Faculty of Psychology and Educational Sciences, Allameh Tabatabai University, Tehran, Iran
e.sadipour@atu.ac.ir

Fariborz Dortaj
Professor, Faculty of Psychology and Educational Sciences, Allameh Tabatabai University, Tehran, Iran

Introduction

Nowadays, health today no longer just not having physical illness and mental disorders, but also includes well-being (Seligman et al., 2005). Well-being is in fact the more scientific term for happiness (Seligman and Csikszentmihalyi, 2000). Well-being and mental health are related to optimal performance in the life process and meeting basic psychological needs. Well-being is one of the most important indicators of health. The role of schools in cultivating this component is being considered due to the importance of well-being during the critical periods of adolescence (Moore et al., 2020). Academic well-being is one of the most important concepts that need to be investigated because school is one of the most important and basic centers in supporting and meeting the mental health needs of students (Arslan, 2018). Students' well-being is also related to their academic achievement (Jørring et al., 2019). Academic well-being is a positive emotional state that is achieved in light of meeting the needs and in line with the positive understanding of students of the desired relationship between the components of academic achievement, anxiety experience, and difficulties in the path of education (Thuy-vy and Deci, 2016).

Academic justice perception can contribute to the well-being and development of students to some extent (Dalbert and Stoeber, 2006). Classroom justice is defined as the perception of fairness about the results or processes that take place in the area of education (Chory-Assad and Paulsel, 2004). Class injustice perception increases negative behaviors by reducing students' positive feelings about their sense of worth and their interest in learning-related tasks (Waldrip and Fisher, 2003). Class justice perception includes procedural justice, information justice, and interpersonal justice (Kazemi, 2016). Procedural justice includes issues such as classroom planning and policies and teacher feedback (Hirvonen et al., 2020). Information justice refers to the appropriate awareness of decisions and outcomes that are relevant to people, and interpersonal justice refers to respect and justice in the relationship between individuals (Colquitt et al. 2006).

In addition to class justice as a contextual component, it is essential to investigate the individual factors of academic well-being. One of the most important individual factors that seem to play a major role in explaining academic well-being is cognitive abilities. Cognitive abilities are the link between the brain and behavior (Madrigal, 2008). Functions derived from cognitive abilities have a significant relationship with health prediction (Marioni et al., 2018). Cognitive abilities play a major role in predicting academic achievement (Berkowitz and Stern, 2018). Academic buoyancy is another personal ability of students that seems to play a major role in explaining the well-being of students. Academic buoyancy is the ability to cope successfully with common academic challenges such as poor grades or deadline pressures (Martin and Marsh, 2006). There is an inverse association between academic buoyancy and test anxiety (Putwain et al., 2012). Results suggest that high academic buoyancy is associated with high pleasure and hope and less fatigue and frustration (Hirvonen et al., 2020).

Due to the importance of explaining academic well-being as an important component and since no study was not found to investigate the role of class justice perception, cognitive abilities and academic buoyancy in predicting academic well-

being, conducting the present study seems to be necessary. Due to the relevance of the concepts described, academic well-being is expected to be predictable based on class justice perception, cognitive abilities, and academic buoyancy. The present was an attempt to answer the question of whether academic well-being is predictable based on the class justice perception, cognitive abilities, and academic buoyancy?

Methods

The present study is descriptive-correlational in terms of the aim of the study. The statistical population of the present study included all high school male students who were studying in the 3rd district of Kermanshah in the academic year of 2020-2021 (5381 people). Among them, 415 people were selected as a sample according to the Morgan table and multi-stage cluster sampling method. Descriptive statistics (frequency, mean and standard deviation) and inferential statistics (Pearson correlation coefficient and regression) with SPSS software were used to analyze the data.

Measurement tool

Tuominen-Soini et al. (2012) Academic Well-being Questionnaire Tuominen-Soini et al. (2012) developed the Academic Well-being Questionnaire by modeling the characteristics of well-being psychology related to the school context. This questionnaire is a self-assessment questionnaire that asks the respondent whether he or she agrees or disagrees with the 31 items that are about his or her opinions on the Likert scale. Tuominen-Soini et al. (2012) evaluated the validity of the scale at a desirable level. The researchers calculated Cronbach's alpha for the four dimensions of school value, school burnout, academic satisfaction, and engagement in school work at 0.64, 0.77, 0.91, and 0.94, respectively. The reliability of this whole questionnaire in the present study was obtained at 0.718 using Cronbach's alpha coefficient and it was obtained at 0.900, 0.867, 0.788, and 0.880, respectively, for the components of school value, school burnout, academic satisfaction, and engagement in school work,

Kazemi Class Justice Perception Questionnaire (2016): This questionnaire includes 22 questions and three components of information justice, procedural justice, and interpersonal justice in the classroom. In his research, Kazemi (2016) obtained an alpha coefficient of 0.89 for the whole questionnaire, 0.81 for the components of information justice, 0.81 for procedural justice, and 0.76 for the interpersonal. He also evaluated the validity of the questionnaire at a desirable level. The reliability of the whole questionnaire in the present study using Cronbach's alpha coefficient was obtained at 0.904 for the whole questionnaire and 874, 0.712, and 0.730, respectively, for the components of information justice, procedural justice, and interpersonal justice.

Nejati Cognitive Abilities Questionnaire (2013): This questionnaire was designed and standardized by Nejati in 2013. It includes 30 items and 7 components (memory, inhibitory control, selective attention, decision-making, planning, sustainable attention, social cognition, and cognitive flexibility. Nejati and Shiri (2013) reported the validity of the questionnaire at a desirable level. The reliability of the 30-item questionnaire was calculated by Cronbach's alpha method and its alpha coefficient was obtained at 0.834. Thus, the validity of the 30-item questionnaire was determined at a very desirable level. The reliability of the whole questionnaire was obtained at 0.914 in the present study using Cronbach's alpha coefficient and it was found at 0.827 for memory component, 0.739 for inhibitory control and selective attention, 0.783 for decision-making, 0.790 for planning, and 0.688 for sustainable attention, 0.683 for social cognition, and 0.708 for cognitive flexibility.

Hossein Chari and Dehghanizadeh Academic Buoyancy Questionnaire (2012): Hossein Chari and Dehghanizadeh (2012) developed the Academic buoyancy Questionnaire with 9 items by modeling the Martin and Marsh (2006) Academic Buoyancy Scale which had 4 items. The results of Hossein Chari and Dehghanizadeh (2012) obtained Cronbach's alpha coefficients at 80% and its test-retest coefficient at 73%. These researchers evaluated the validity of the questionnaire at a desirable level. The reliability of this questionnaire in the present study was obtained at 0.861 using Cronbach's alpha coefficient.

Results

Among the 415 respondents, 174 were studying in the tenth grade (41.9%), 148 were in the eleventh grade (35.7%) and 93 were in the twelfth grade (22.4%). Table 1 describes the descriptive indices of mean, standard deviation, skewness, and kurtosis of the research variables.

Table 1: Descriptive indices of the research variables

Variable	Component	Mean	SD	Skewness	Kurtosis
Academic well-being	Academic well-being	1.43	7.36	502.-0	405.-0
Class justice	Information justice	8.37	3.13	138.-0	658.-0
	Procedural justice	6.22	3.5	260.-0	235.-0

	Interpersonal justice	1.25	3.3	418.-0	582.0
Cognitive ability	Memory	4.36	3.5	705.-0	863.0
	Selective attention	7.33	0.5	789.-0	315.0
	Decision-making	1.29	9.4	955.-0	793.0
	planning	3.17	0.3	864.-0	694.0
	Sustainable attention	4.13	8.2	701.0	223.0
	Social cognition	3.8	3.2	230.0	626.0
	Cognitive flexibility	5.20	0.3	029.-0	724.0
Academic buoyancy	Academic buoyancy	8.31	8.8	479.-0	362.-0

Before using correlation tests and regression analysis, the assumptions that allow their use were examined. As shown in Table 1, all components of the study had a normal distribution. To examine the multivariate outliers, Mahalanobis distance was used. Accordingly, 5 outliers in the component of class justice perception and 8 outliers in the component of cognitive abilities were identified and deleted. Hence, to analyze the data, multivariate outliers were not found among the research components. With the fulfillment of the assumptions, Pearson correlation coefficient and multivariate regression analysis were used to analyze the data.

The Pearson correlation method was used to examine the correlation matrix between research variables. As can be seen from the results of Table 2 related to the correlation matrix between the variables, all research variables have a significant correlation with each other ($P \leq 0.01$). In general, examining the correlation matrix between the variables showed that there was no relationship with very high intensity that causes multicollinearity and a non-significant relationship that causes their independence from each other in the variables.

Table 2: Correlation matrix between research variables ** ($P \leq 0.01$)

Variable	**1**	**2**	**3**
Academic well-being	1		
Class Justice	591**.0	1	
Cognitive ability	419**.0	297**.0	1
Academic buoyancy	308**.0	361**.0	263**.0

Multivariate regression analysis was used to examine the relationship between class justice perception variables and cognitive abilities with academic well-being. With regard to the relationship between the components of class justice perception and academic well-being, as the results of Table 3 related to regression coefficients showed, the component of information justice with a beta coefficient of 0.471 and procedural justice with a beta coefficient of 0.168 has a significant relationship with academic well-being at 99% confidence level. The coefficient of determination also showed that the components of class justice perception as a whole explain 35.2% of the changes in academic well-being.

Table 3: Regression coefficients of class justice perception

Variable		**B (non-standardized)**	**Standard error**	**β**	**sig**	**Tolerance**	**VIF**
class justice perception	Information justice	301.1	130.0	471.0	001.0	717.0	395.1

	Procedural justice	163.1	168.0	168.0	001.0	738.0	354.1
	Interpersonal justice	690.0	059.0	059.0	150.0	933.0	072.1

Table 4: Cognitive ability regression coefficients

Variable		B (non-standardized)	Standard error	β	sig	Tolerance	VIF
Cognitive abilities	Memory	258.0	449.0	105.0	519.0	535.0	868.1
	Selective attention	813.0	536.0	120.0	038.0	404.0	475.2
	Decision-making	281.1	561.0	164.0	023.0	368.0	715.2
	planning	358.1	831.0	281.0	001.0	445.0	248.2
	Sustainable attention	252.1	654.0	117.0	049.0	772.0	295.1
	Social cognition	287.0	898.0	018.0	749.0	609.0	643.1
	Cognitive flexibility	501.0	595.0	039.0	400.0	866.0	155.1

With regard to the relationship between cognitive abilities and academic well-being, as the results of Table 4 related to regression coefficients showed, the component of selective attention with a beta coefficient of 0.20, decision-making with a beta coefficient of 0.164, planning with a beta coefficient of 0.281 and sustainable attention with a beta coefficient of 0.117 have a significant relationship with academic well-being at 95% confidence level. The coefficient of determination also showed that the components of cognitive abilities as a whole explain 23.1% of the changes in academic well-being.

Regarding the relationship between academic buoyancy and academic well-being, since the aim was to examine the linear relationship between the two variables, the Pearson correlation method was used due to the normal distribution of data. The correlation test between the variables of academic buoyancy and academic well-being showed that the correlation between academic buoyancy and academic well-being was 0.308, which is statistically significant at a 99% confidence level.

Discussion and Conclusion

Class justice perception can maintain and improve students' academic motivation and increase their academic well-being by creating better emotions and more appropriate academic behaviors. This explanation is in line with that of a study conducted by Bakhtiari et al. (2019). School injustice perception is associated with increased negative emotions such as anger, anxiety, sadness, and depression in students. Thus, it can be stated that the class justice perception can improve academic well-being by preventing negative emotions about education. It seems that the procedural justice perception in the classroom increases the student's sense of academic satisfaction. Gini et al. (2018) also revealed a relationship between teachers' justice perception and academic satisfaction and a greater sense of satisfaction with education led to increased academic well-being. Information justice perception in the classroom can enable students to better predict the outcome of their behaviors. Hence, by adapting to the situation, their academic anxiety is reduced and it leads to increased academic well-being in them.

The lack of observing a relationship between the interpersonal justice perception in the classroom and academic well-being may be due to the coronavirus epidemic situation. Lack of interaction in virtual education during coronavirus might affect students' interpersonal justice perception. Concerning the relationship between cognitive abilities and academic well-being, it can be stated that if students have higher cognitive abilities, the probability of their academic success will be higher. Increasing academic achievement leads to improved academic well-being. This explanation is somewhat consistent with the result of research conducted by Karami et al. (2015).

As for the relationship between selective attention, inhibitory control, sustained attention, and academic well-being, it is necessary to pay attention to the application of these abilities. It seems that these abilities make students better pay attention to the teacher's points when learning, avoid unnecessary work and remember more important things more effectively when

assessing. These abilities are likely to result in a sense of academic satisfaction and academic well-being. In respect of the relationship between decision-making and academic well-being, it can be stated that the ability to make decisions helps one to select one option among several options, and people look for options that receive more reinforcement (Paulus et al., 2003; Sepasian and Sheikh al-Eslami, 2017). Therefore, students with higher decision-making ability receive more reinforcement and experience greater academic well-being. With regard to the relationship between planning and academic well-being, it can be stated that if people have higher ability in planning, their ability to recognize and organize the steps to achieve the desired goal will be higher (Lezak et al., 2004). It means that they can work better, adjust their academic activities to achieve the goals and it can lead to more academic well-being.

About the lack of a significant relationship between memory and cognitive ability, it can be stated that some students have probably learned over time to compensate for this deficiency by using cognitive strategies, even if they do not have a strong memory. It can also be due to the general shift of the education system from a memory-oriented system to a skill-oriented system. Also, the lack of observing a significant relationship between social cognition ability and academic well-being maybe since the research was carried out during the coronavirus epidemic and social distancing, and the students' reports about their relationships with others during the epidemic might have undergone unpredicted changes that are not consistent with their sense of academic well-being.

With regard to the lack of observing a significant relationship between cognitive flexibility and academic well-being, it can be stated that it might be due to teachers' educational measures since most teachers in normal and especially in virtual education try to plan and implement education to improve students' concentration in a way that reduces the cognitive burden of students and are less exposed to the situation that needs to shift the attention from one subject to another subject.

Given the relationship between academic buoyancy and academic well-being, it seems that with increasing academic buoyancy, students experience less academic anxiety, increasing their academic well-being. This explanation is consistent with the results of research conducted by Putwain et al. (2015).

Flett et al. (2014) indicated a relationship between academic buoyancy and the stability of social relationships. It seems that students with high academic buoyancy are also more likely to receive social support to solve the problems ahead.

Gaining this support can guide them towards better emotional interaction with their educational environment and experience greater academic well-being than those with lower academic buoyancy. Academic buoyancy is effective in the meaning of education and better academic performance (Fooladi et al., 2018). In other words, with increasing academic buoyancy of students, their education will be more meaningful for them, and it can improve the value of education for them and improve academic well-being. The present study faced some limitations such as the use of self-report tools for measurements. It might cause bias due to reporting errors. Since the present study was conducted during the coronavirus epidemic, some of the results might be affected by this disease. Also, based on the statistical population of the study, which was limited to high school boys in 3rd district Kermanshah, we should treat with caution in generalizing its results. It is recommended that similar studies be conducted in other populations. It is also recommended to use the experimental method to test the causal relationships between the components.

Acknowledgments

None.

Conflict of interest

None.

Financial support

None.

Ethics statement

None

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