

Predicting students' satisfaction with virtual education based on health-oriented lifestyle behaviors

Predicción de la satisfacción del alumnado con la educación virtual a partir de las conductas de estilo de vida orientadas a la salud

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ABSTRACT

The aim of this study was to investigate student satisfaction with virtual education based on their health-oriented lifestyle behaviours. The present study was a descriptive correlational study. The statistical population included all undergraduate students in engineering and psychological fields at Islamic Azad University of Shahr-e-Rey during the second semester of 2020-2021. Of these students, 188 (93 engineering students and 95 psychology students) were randomly selected. To collect the data, an instrument for measuring satisfaction with virtual education as well as the measurement scale for health-oriented academic lifestyle behaviours (Salehzadeh et al., 2017) were used. Findings revealed that the components of a health-oriented lifestyle as a whole explain 37.4% of the variance in student satisfaction with virtual education. The relationship between health-oriented lifestyle facilitators (academic optimism, mastery goal orientation, and academic resilience) and student satisfaction with virtual education was positive and significant. The relationship between health-oriented lifestyle inhibitor components (learned helplessness and procrastination) and student satisfaction with virtual education was negative and significant. The relationship between effort withdrawal and student satisfaction with virtual education was not significant ($p > 0.05$). There was no difference between the components of a health-oriented lifestyle and student satisfaction with virtual education according to educational groups. Accordingly, creating a resilient educational environment, trying to participate, and teaching towards meaningful and problem-based learning will prevent students from avoiding virtual education.

KEYWORDS Virtual learning, lifestyle, goal orientation, resilience, helplessness, satisfaction.

RESUMEN

El objetivo de este estudio fue evaluar la satisfacción del alumnado con la educación virtual a partir de sus conductas de estilo de vida orientadas a la salud. La presente investigación fue un estudio descriptivo correlacional. La población estadística incluyó a todos los estudiantes de grado en ingeniería y psicología en la Universidad Islámica de Azad, rama Shahr-e-Rey en

el segundo semestre de 2020-2021, de los cuales 188 conformaron la muestra (93 estudiantes de ingeniería y 95 de psicología), que fue seleccionada al azar. Para recopilar los datos se utilizó un instrumento para medir la satisfacción con la educación virtual, además de una escala para las conductas de estilo de vida académico orientadas a la salud (Salehzadeh et al., 2017). Los hallazgos indicaron que los componentes del estilo de vida orientado a la salud en conjunto explican el 37.4% de la varianza de la satisfacción del alumnado con la educación virtual. La relación entre los facilitadores del estilo de vida centrado en la salud (optimismo académico, orientación a metas y resiliencia académica) con la satisfacción de los estudiantes respecto a la educación virtual fue positiva y significativa. La relación entre los componentes inhibidores del estilo de vida centrado en la salud (impotencia aprendida y procrastinación) con la satisfacción del alumnado con la educación virtual fue negativa y significativa. La relación entre el componente de retirada de esfuerzo y la satisfacción de los estudiantes con la educación virtual no fue significativa ($p > 0.05$) y no hubo diferencia entre los componentes del estilo de vida orientado a la salud y la satisfacción del alumnado con la educación virtual en función de grupos educativos. Como consecuencia, al crear un entorno educativo resiliente con la intención de participar y enseñar para lograr un aprendizaje significativo y basado en problemas, el alumnado apostará por la educación virtual.

PALABRAS CLAVE Aprendizaje virtual, estilo de vida, orientación a metas, resiliencia, desesperanza, satisfacción.

INTRODUCTION

The Covid-19 pandemic has affected various aspects of people's lives, including economy, mental health and education (Chirag Buch et al., 2020; Heng, & Sol, 2020; Mahyoob, 2020; Tadesse, & Muluye, 2020; Yan et al, 2021). According to evidences, the COVID-19 pandemic has led to high levels of psychological distress (Que et al., 2020), depression (Wang et al., 2020), anxiety (Horesh, & Brown, 2020) and economic pressure (Cao et al. 2020). The changes related to the COVID-19 outbreak have also affected the academic context. In fact, all universities have faced and are still facing many challenges (Sahu, 2020). The closedown of educational institutions during the pandemic has led to the use of distance education and trust in online learning, making the educational institutions support learners and prevent the negative consequences of educational close-down (Oraif, & Elyas, 2021). E-learning is a common way of providing educational content to learners that emphasizes the use of technology and tools in learning and teaching and has shown its effectiveness in the academic environment to advance educational goals (Romiszowski, 2004). Among the new ways of learning, we can mention virtual classes that enable communication between professors, students, and universities, as well as the interaction between students themselves (Shahbeigi, & Nazari, 2012) and synchronous and asynchronous sessions in the form of audio, video, graphics, and electronic material in the best and fastest possible way (Gunasinghe et al., 2019). Virtual classrooms provide an interactive space for users, allowing students to participate in discussions using written or audio windows and perform many activities without a physical presence in the classroom. These classes are economical and can be used more efficiently to access and educational use the benefits of face-to-face classes when such classes are unavailable (Bawaneh, 2020). Research has shown that virtual education is less accepted than traditional education (Nicholas, & Levy, 2009). In addition, other research has indicated that although virtual education is a relatively new and significant method, there is a poor performance level for technology in the educational settings and that more studies in this area are called for. Studies have argued that educational software has distanced itself from educational content by focusing on overcoming power-based relationships and transcending traditional education mo-

dels (Hall, 2001). Other research suggests that e-learning can create academic stress and negative emotions in learners (MacIntyre et al., 2020). In contrast, some empirical evidence supports the benefits of virtual learning. These studies show that in these classes, diversification of topics and trends based on people's interests makes it possible to make more choices for inclusive and educational management based on needs. Furthermore, many educational materials could be readily reviewed Fathievajargah et al. (2011), while in traditional classrooms, it is impossible to return to the previously discussed topics (Brodsky, 2020; Chitra, & Raj, 2020). So far, many studies have indicated that e-learning in higher education is useful and has determined that university online resources are suitable for providing educational content (Moore et al., 2011).

User satisfaction with technology and electronic devices is one of the most critical factors in evaluating their effectiveness and success (Gholipour et al., 2020; Weibel et al., 2012). Therefore, the success of e-learning depends to a great extent on the design of an educational model tailored to meet the needs of learners and their educational objectives (Lee et al., 2009). Even though there have been studies that have examined factors affecting e-learning user satisfaction, there are still gaps in empirical studies that should tackle factors such as the quality of e-learning services and user satisfaction. It is unclear why some users do not want to continue using these systems after they have the initial experience. Still, at the same time, this type of training is not very effective in cultivating behavioral competence among learners (Sarkar, 2004; Schroeder, 2003; Sun et al. 2008).

From a positive psychology perspective, a variety of factors can predict and explain learners' performance in educational settings. Among these, academic health-oriented behaviors are considerable. In the context of health studies, lifestyle behaviors refer to a set of behaviors that the individual has control over and form the pattern of daily behavior (Soufi et al., 2017). In other words, they are the preferred behavioral patterns that learners choose and express. Depending on their nature and function, these behaviors may improve or endanger the academic health of learners. These behaviors are a set of the most common behaviors that facilitate academic health, such as optimism, resilience, and mastery goal orientation, and also the behaviors that inhibit health, such as learned helplessness, effort withdrawal, and procrastination (Salehzadeh et al., 2017).

Academic optimism, as a facilitator of a health-oriented lifestyle, is the belief that individuals can perform well in terms of academic outcomes (Hoy et al, 2006). By expecting positive results, optimistic learners are able to repair their efforts despite the obstacles to achieving their goals. In contrast, pessimistic learners give up in the face of challenges and become discouraged from continuing (O'Connor, & Cassidy, 2007). Academic optimism includes cognitive, affective, and behavioral dimensions and is formed from the interaction between a sense of collective effectiveness, trust, and academic emphasis as part of the organizational health of the education environment (Gürol, & Kerimgil, 2010). Another facilitator is the mastery goal orientation. These goals propose a framework which help the learners to interpret and respond to events (Dweck, & Leggett, 1998). Theorists have emphasized two types of development goals: the goal of ability development (also called task goal, learning goal, or mastery goal) and the goal of proving ability or avoiding proving lack of ability (which is called ability goal, ego goal, performance goal). Learners with a functional goal focus mainly on external indicators such as scores and rewards. They are not necessarily worried about learning, but rather are motivated by a desire to become better than others. Learners with mastery goal orientation, on the other hand, emphasize "learning for the sake of learning". They are not particularly concerned about their status in comparison to others, but instead want to increase their skills and knowledge

(Elliot, 1999; Elliot, & Dweck, 2005). Finally, resilience was investigated as the third facilitator in this study. According to Steinhardt and Dolbier (2008), resilience is defined as the ability to bounce back to the original state (and regain energy), and complete recovery after facing challenges and stressful situations. Academic resilience is a manifestation of resilient responses to academic demands in educational settings. Resilient students are more successful despite enduring difficulties and challenges; They are highly motivated to progress and are able to maintain optimal performance even in stressful situations (Cabrera, & Padilla, 2013).

Another inhibitor to health-oriented lifestyles is learned helplessness, which occurs when a person who is exposed to disturbing events and failed experiences gradually realizes that the consequences occur regardless of his or her responses. In such situations, the person experiences behavioral responses such as low self-efficacy and mental disorder. Lack of control has consequences: decreased motivation to respond, impaired cognitive ability to perceive success, and finally, the growth of negative emotional responses are important consequences of reduced perceived control (Maier, & Seligman, 1976).

Another inhibitor is procrastination, which is used to describe a situation in which repeated delays in homework are considered a person's way of life (Ferrari, 2000). In defining this term, researchers have referred to procrastination as putting off doing important things with disturbing mental experiences or postponing doing something because it is unpleasant or boring for the person (Klassen et al., 2008). Finally, the third inhibitor addressed in this study is effort withdrawal, which is a term used to describe the behavior of those learners who make little effort to understand and complete their homework. Researchers provide evidence that, in addition to the two types of mastery goal orientation and performance goal orientation, there is another type of goal orientation that learners manifest in development environments: effort withdrawal (Jarvis, & Seifert, 2002).

Research suggests that there is a significant negative relationship between prospective anxiety and optimism in outstanding students Jamalalleil (2014) and in addition, optimism has a significant effect on increasing motivation for progress and its dimensions (self-confidence and perseverance). In other words, focusing on the emotional aspects and optimism of students is a factor to increase their motivation for progress (Khademi et al., 2017). MacIntyre et al. (2020) address the role of resilience and the application of coping strategies with academic stress during the COVID-19 pandemic and the need to emphasize the role of coping strategies and the experience of academic stress in this period.

Regarding resilience, the study of Yaghoobi and Bakhtiari (2020) shows that the selection of resilient behaviors reduces the rate of academic procrastination. The teaching of resilient behaviors reduces the rate of academic burnout, academic boredom, inefficiency, and consequent academic failure. Resilient students have more mature mental functioning, are more adaptable, and have positive orientations for their future (Meichenbaum, 2005; Ungar, & Liebenberg, 2011). Creating a resilient learning environment considering how to apply strategies to cope with academic stress during the COVID-19 pandemic has been the focus of researchers (MacIntyre, 2020).

Researchers have studied academic procrastination, known as a non-adaptive strategy, in relation to mastery goal Wolters (2004), in a study on intermediate school students, found evidence of a negative relationship between mastery goals and procrastination. He noted that mastery goals (both individual and classroom structure) were associated with reports of low levels of procrastination.

Findings in the field of satisfaction with virtual education also indicate a significant difference between the level of satisfaction and students' attitudes toward virtual classes for students with different levels of

education (Bawaneh, 2020). Giusti et al. (2021) found a significant impact of distance education (DE), which was related to social, technological, and organizational adaptation difficulties, on students' psychological conditions, specifically, their depressive symptoms, and academic performance. DE was better appreciated by older students, displaying good social interaction abilities.

In the present study, the relationship between academic health-oriented lifestyle behaviors and satisfaction with e-learning in students of two relatively different disciplines of psychology and engineering is studied. In addition, the differences in the relationship between the two groups is investigated.

METHODOLOGY

The design of the present study was descriptive-correlational, and the causal-comparative method was used to further investigate variables. The participants of the study were 191 randomly selected undergraduate students in the engineering (96 people) and psychology (95 people) departments of Azad University (Yadegar-e-Imam Khomeini Branch). After explaining the objectives of the research, two questionnaires of satisfaction with virtual education were completed by them in an online environment. After collecting the data, SPSS 26 software was used for analysis. The criterion for entering the sample was for the students to be in the educational process for at least an entire semester, and the criterion for not being included was leaving more than five percent of the questions unanswered.

Virtual Education Satisfaction Questionnaire

This questionnaire consisted of 25 questions on a 5-point Likert scale (strongly disagree = 1, disagree = 2, have no opinion = 3, agree = 4, strongly agree = 5) and assessed the student's satisfaction with the virtual education method. The minimum score was 25 and the maximum score was 125. The content validity of this questionnaire was evaluated based on the opinion of experts, including a number of university professors. For reliability, we relied on Cronbach's alpha, which was 0.88 for all subjects, and 0.89 and 0.87 for psychology and Engineering students, respectively.

Questionnaire of academic lifestyle behaviors that promote and inhibit the education health (Salehzadeh et al, 2017)

This questionnaire, which consisted of 124 items with 13 behavioral patterns, was designed by (Salehzadeh et al, 2017). It was developed in the form of a self-report questionnaire with the capacity of individual and group implementation. Forty-eight items are dedicated to the behaviors that are facilitators of education health, and 76 items are dedicated to the behaviors that are inhibitors to education health. Respondents must respond to each item on a 5-point Likert scale from "strongly agree" (5) to "strongly disagree" (1). Underlying constructs and the number of items in each dimension of facilitating behaviors include academic optimism (10 items), academic engagement (8 items), mastery goal orientation (10 items), academic buoyancy (10 items), academic resilience (10 items). For inhibiting behaviors, there was learned helplessness (10 items), avoidance of help-seeking (9 items), passive aggression (10 items), academic procrastination (9 items), self-handicapping (7 items), effort withdrawal (11 items), academic cheating (10 items) and maladaptive perfectionism (10 items).

In the present study, due to the numerousness of items in the questionnaire of facilitator and inhibitor behaviors of health-oriented academic lifestyle, and the likelihood of fatigue and consequent inaccuracy in the answers, the following measure was taken: the for the facilitators of health-oriented academic lifestyle, the behavioral models of academic optimism, mastery goal orientation, and academic resilience were chosen. Regarding the inhibitors, the three behavioral models of effort withdrawal, learned helplessness, and procrastination were selected. The internal consistency coefficients for facilitators were as follows: academic optimism 0.89, mastery goal orientation 0.93, academic resilience 0.93. Similarly, for the inhibitors, they were as follows: learned helplessness 0.92, academic procrastination 0.93, and effort withdrawal 0.95 (Salehzadeh et al., 2017).

FINDING

Table 1 shows the descriptive statistics, including the mean and standard deviation of the variables of the study, categorized into facilitating and inhibiting behaviors for all participants.

TABLE 1. Descriptive statistics (N=188)

THE MAIN FACTOR	SUB-SCALES	MEAN	SD
Facilitators	Academic optimism	37.42	7.874
	mastery goal orientation	40.04	8.730
	resilience academic	38.47	8.519
	Total	25.60	11.205
Inhibitors	Learned Helplessness	24.59	9.026
	Procrastination	26.93	11.236
	Effort Withdrawal	76.07	14.298
	Total	37.42	7.874
Satisfaction with Virtual Education	TOTAL	40.04	8.730

The assumptions of using correlation tests:

- *Data Screening:* Before analyzing the data, it is necessary to examine the underlying assumptions. In this section, some of the most important underlying assumptions of the variables studied in the present study are stated.
- *Missing data:* The ratio of missing data to the total for each variable was examined separately, which was found to be less than 5% for each variable (Meyers, et al., 2006). suggest that variables in which the percentage of missing data is greater than 5% should be removed from the dataset. Examining missing data is important because, in many multivariate statistical analyses, missing data undermine the results. For this reason, the Expectation Maximum (EM) imputation method was used to deal with the missing data. The EM algorithm is a two-step process that uses the maximum likelihood approach to estimate missing data. In step E, regression analysis is used to estimate the missing data. In step M, the parameters (i.e., correlations) are estimated using the maximum likelihood method and the imputation of missing data (Maier et al, 2006). According to many experts, the EM method is very effective compared to other methods (Kline, 2005).

Multivariate normality: Multivariate normality implies that each indicator must have a normal distribution for any amount of any other indicator (Garson, 2007). Kline (2005) notes that deviation from this assumption is associated with an increase or decrease in chi-square statistic. One of the common criteria in examining the assumption of normality is the calculation of skewness and kurtosis statistics. Garson (2007) emphasizes that if the skewness and kurtosis statistics of the data fall between +2 and -2, the data have a normal distribution at the level of 0.5. In this study, the skewness and kurtosis statistics of the data fell between +2 and -2 (Table 2).

Linearity: In SEM, it is assumed that there are linear relationships between indicators and latent variables and between latent variables (Garson, 2007). In this study, the use of scatter plot diagrams supported the assumption of linearity.

TABLE 2. Normality of the data distribution

THE MAIN FACTOR	SUB-SCALES	SKEWNESS	KURTOSIS
Facilitators	Academic Optimism	-.689	.913
	Mastery Goal Orientation	-1.208	1.708
	Resilience Academic	-.638	.002
	Total	.300	-.946
Inhibitors	Learned Helplessness	.051	-.754
	Procrastination	.418	-.804
	Effort Withdrawal	.129	.157
	Total	-.689	.913
Satisfaction with Virtual Education	TOTAL	-1.208	1.708

Multicollinearity: Multicollinearity occurs when two overlapping variables which actually measure a single phenomenon are used (Kline, 2005). Multicollinearity is identified by Tolerance and Variance Inflation Factor (VIF). Tolerance equals $1-R^2$, and VIF equals $1/1-R^2$ (Kline, 2005). A Tolerance of less than 10.0 or VIF above 10.0 indicates multicollinearity. In this study, no deviation from the assumption of multicollinearity was observed in any of the values of tolerance and VIF statistics calculated for the research variables (Table 3).

TABLE 3. Test of collinearity among the predictor variables

VARIABLE	COLLINEARITY STATISTICS		
DV	Predictor	VIF	Tolerance
Students' satisfaction with virtual education	Academic Optimism	2.985	.335
	Mastery Goal Orientation	2.098	.477
	Resilience Academic	1.949	.513
	Learned Helplessness	1.890	.529
	Procrastination	2.133	.469
	Effort Withdrawal	2.342	.427

Tolerance: VIF is between 1 and 5; hence, multicollinearity is acceptable, and multicollinearity assumption is not violated.

Research Hypotheses

HYPOTHESIS 1

There is a relationship between a health-oriented lifestyle and students' satisfaction with virtual education

The results of Table 4 show that the relationship between students' satisfaction with virtual education and the facilitators of health-centered lifestyle (academic optimism, mastery goal orientation, and academic resilience) was positive and significant, with amounts of r equal to 0.539, 0.264 and 0.334, respectively. In addition, the results of Table 5 show that the relationship between students' satisfaction with virtual education, and the inhibitors of a health-oriented lifestyle (learned helplessness and procrastination) was negative and significant, with amounts of r equal to -0.441 and -0.248, respectively. As a result, the research hypothesis was supported, demonstrating a relationship between health-oriented lifestyle components and satisfaction with virtual education among students.

TABLE 4. Correlation matrix of health-oriented lifestyle components and students' satisfaction with virtual education

		1	2	3	4	5	6	7
Facilitators	academic optimism	1						
	mastery goal orientation	.641**	1					
	resilience academic	.659**	.504**	1				
Inhibitor	learned helplessness	-.472**	-.207**	-.171*	1			
	procrastination	-.382**	-.330**	-.273**	.537**	1		
	effort withdrawal	-.363**	-.445**	-.167*	.523**	.682**	1	
Students' satisfaction with virtual education		.539**	.264**	.334**	-.441**	-.248**	-.123	1

$P^{**}<.01$ $P^{*}<.05$

Simultaneous multiple regression analysis was used to investigate the multiple relationships between health-oriented lifestyle components and students' satisfaction with virtual education. The results of the statistical analysis of this hypothesis are shown in Tables 5 and 6.

TABLE 5. Correlation coefficient and determination coefficient of variables included in the regression model in predicting students' satisfaction with virtual education

MODEL	CORRELATION COEFFICIENT	COEFFICIENT OF DETERMINATION (R2)	F	SIGNIFICANCE LEVEL
1	.612 ^a	.374	18.037	.000 ^a

^a predictor: (fixed), factors of health-oriented lifestyle

Dependent variable is students' satisfaction with virtual education. Durbin-Watson statistic = 1.746

Since the amount of the Durbin-Watson statistic (1.746) was less than 2.5, the assumption of regression error term independence is not violated.

The results of Table 5 show that in the regression model, students' satisfaction with virtual education is obtained from the components of health-oriented lifestyle with a coefficient of determination $R^2 = 0.374$. In other words, the components of health-oriented lifestyle together explain 37.4% of the variance of students' satisfaction with virtual education. The results of Table 5 show that the statistic of F calculated for regression analysis are significant ($p < 0.05$). Therefore, the regression equation was statistically significant.

TABLE 6. Regression coefficients of variables included in predicting students' satisfaction with virtual education

MODEL	VARIABLE	Unstandardized coefficients		Standardized coefficients	t	Significance level
		B	SD	Beta		
1	Constant	50.114	6.848		7.318	.000
	Academic Optimism	.821	.184	.452	4.450	.000
	Mastery Goal Orientation	-.007	.140	-.004	-.051	.959
	Resilience Academic	.006	.138	.004	.045	.964
	Learned Helplessness	-.411	.103	-.322	-3.983	.000
	Procrastination	-.133	.136	-.084	-.979	.329
	Effort Withdrawal	.337	.115	.265	2.945	.004

Dependent variable is students' satisfaction with virtual education.

Simultaneous regression coefficients are shown in Table 6. The regression coefficient (B) for academic optimism was equal to 0.821, learned helplessness was equal to -0.411, and effort withdrawal was equal to 0.337. The constant of regression was equal to 50.114. Table 6 also shows that the statistic of t and the significance level of the mentioned variables are less than 0.5, which shows that these coefficients are statistically significant. Also, according to the standard β coefficients (Table 6), the largest β coefficient was $\beta = 0.452$ for academic optimism. This result shows that academic optimism had a greater contribution to explaining students' satisfaction with virtual education. In other words, the academic optimism, as a dimension of health-oriented lifestyle, is a stronger predictor of students' satisfaction with virtual education. Moreover, the results of regression analysis show that the β coefficient obtained for the variable of learned helplessness and effort withdrawal was equal to -0.322 and 0.265, respectively. This shows that with each unit of change in the variance of the learned helplessness variable and avoidance of effort, there is a change of -0.322 and 0.265 in the variance of students' satisfaction with virtual education.

HYPOTHESIS 2

There is a significant difference between the components of health-oriented lifestyle and students' satisfaction with virtual education based on their disciplines

Fisher Z-Transformation was used to examine the correlation differences between the two independent groups. When examining the correlations between two variables in two different situations, a tool is needed to compare these correlations and realize a significant difference between them. This is performed by Fisher Z-Transformation. In fact, by doing this, the correlations in two situations are converted to Fisher Z-scores, and thus, possible to compare.

TABLE 7. Relationship between health-oriented lifestyle components and students' satisfaction with virtual education by groups

VARIABLE	ENGINEERING (N=93)	PSYCHOLOGICAL (N=95)	Z	
	R	R	SCORE	P
Academic Optimism	0.598	0.505	0.9	>0.05
Mastery Goal Orientation	0.251	0.283	-0.23	>0.05
Resilience Academic	0.307	0.368	-0.46	>0.05
Learned Helplessness	-0.480	-0.456	0.21	>0.05
Procrastination	-0.248	-0.260	0.09	>0.05
Effort Withdrawal	-0.214	-0.049	-1.14	>0.05

Based on the results obtained from Fisher Z-Transformation (Table 7), because the amount of Z was less than the standard Z (1.96) for the studied variables, this hypothesis is rejected, and it can be concluded that there was no difference between the components of health-oriented lifestyle and students' satisfaction with virtual education based on their disciplines.

HYPOTHESIS 3

There is a difference between facilitating and inhibiting behaviors of health-oriented academic lifestyle and satisfaction with virtual education in both psychological and engineering groups

As can be seen in Table 8, there is a statistically significant difference between the facilitator *academic optimism* [t = -2.30, df = 186, p = 0.02], and the inhibitors *learned helplessness* [t = 3.93, df = 186, p<0.001] and *effort withdrawal* [t = 4.40, df = 186, p<0.001]. It should be noted that the difference between other factors in the two groups was not significant.

TABLE 8. Results of t-test to compare the two groups of students, the Faculty of Psychology and the Faculty of Engineering

VARIABLE	GROUPS	MEAN	STANDARD DEVIATION	MEAN DIFFERENCE	STANDARD ERROR	DEGREE OF FREEDOM	T	SIGNIFICANCE LEVEL
Satisfaction with virtual education	Psychology	75.63	13.90	0.895	2.09	186	0.428	0.66
	Engineering	76.53	14.75					
Academic optimism	Psychology	38.72	7.66	-2.61	1.13	186	-2.30	0.02
	Engineering	36.10	7.90					
Mastery goal orientation	Psychology	40.59	8.94	-1.11	1.27	186	-0.876	0.38
	Engineering	39.47	8.52					
Resilience	Psychology	39.04	8.43	-1.15	1.24	186	-0.925	0.35
	Engineering	37.89	8.60					
Learned helplessness	Psychology	22.54	10.27	6.19	1.57	186	3.93	p<0.001
	Engineering	28.73	11.30					
Procrastination	Psychology	23.56	9.13	2.07	1.31	186	1.58	0.11
	Engineering	25.63	8.83					
Effort withdrawal	Psychology	23.52	9.76	6.89	1.56	186	4.40	p<0.001
	Engineering	30.41	11.61					

DISCUSSION AND CONCLUSION

Positive psychology has attracted the attention of many education scholars today and has always sought to create a positive educational environment. The constructs of positive psychology have been frequently studied in various studies, but fewer studies have been done to study these components as a set of behaviors in academic life. The aim of this study was to predict the satisfaction of virtual education based on facilitator and inhibitor behaviors of health-oriented lifestyle in students of Islamic Azad University, Shahr-e-Rey Branch, during the COVID-19 epidemic.

As mentioned in the previous section, the findings indicated that the components of a health-oriented lifestyle together explain 37.4% of the variance of students' satisfaction with virtual education. In addition, the relationship between health-oriented lifestyle facilitators (academic optimism, mastery goal orientation and academic resilience) with students' satisfaction with virtual education was positive and significant. On the other hand, the relationship between the inhibitors of health-oriented lifestyle including learned helplessness and procrastination with students' satisfaction with virtual education was negative and significant, but the relationship between effort withdrawal and students' satisfaction with virtual education was not significant. According to Salehzadeh et al. (2017) and Soufi et al. (2017) the facilitator/inhibitor behaviors of a health-oriented academic lifestyle explain the importance of emphasis on the tenets of positive education which motivates the researchers' understanding of the learners' motivational/affective/behavioral performance and their impact on multiple conceptual domains, such as perceptions of academic satisfaction, achievement emotions, and academic well-being.

According to the research findings, among the facilitator components, academic optimism is associated with more satisfaction with virtual education among the students. The justification for this finding is that optimistic learners, by expecting positive results, are able to adjust their efforts to achieve their goals despite the obstacles to achieving them, while pessimistic learners give up in the face of challenges and become discouraged from continuing their activities (O'Connor, & Cassidy, 2007). The benefits of e-learning such as saving time and energy, lowering the risk of becoming infected with COVID-19, reducing worries about transmitting the disease to the family, and taking classes anywhere and anytime can lead to greater academic optimism, thus leading to more satisfaction with the virtual education among the students. As mentioned, mastery goal orientation as a facilitator behavior has a significant relationship with student satisfaction. These goals provide a framework for learners to interpret and respond to events. This leads them to adopt different patterns of behavior (Dweck, & Leggett, 1998). Based on research evidence, learners with high perceived ability exhibit a mastery pattern, while learners with low perceived ability exhibit a pattern of helplessness (Elliot, & Dweck, 2005). Therefore, learners with a high level of mastery goal orientation are less helpless in the face of the challenges of e-learning and increase their skills and knowledge. Resilient individuals can also see challenges as opportunities (Steinhardt, & Dolbier, 2008). Resilient students are more successful despite enduring problems and challenges (Cabrera, & Padilla, 2013). They are highly motivated to progress and are able to maintain optimal performance even in stressful situations (Meichenbaum, 2005). On the other hand, the selection of resilient behaviors reduces the rate of academic procrastination, and the training of resilient behaviors reduces the rate of academic burnout, academic boredom, inefficiency, and consequent academic failure (MacIntyre et al., 2020).

The adoption of the facilitating behaviors of health-oriented academic lifestyle reduces a person's helplessness in the face of challenges, and on the other hand, it also reduces procrastination. Therefore, a negative and significant relationship between learned helplessness, procrastination and satisfaction with virtual education is not far from expectation. Repeated experiences of failure and believing that there are no desirable benefits to one's actions may cause one to experience behavioral responses such as low self-efficacy and mental disorder. It is expected that when the outcome of the behavior is independent of the response, the motivation to control the outcome decreases. The consequence of this situation is that one surrenders to new challenges. As a result, in situations such as the prevalence of COVID-19 and the need for virtual education, one will experience more difficulty adapting to change. Procrastination as another inhibitor also paves the way for postponing efforts to adapt to the new situation and accept new responsibilities. According to research evidence, procrastination is the opposite of the mastery goal orientation (Wolters, 2004), so the higher the level of procrastination in a person, the more difficult it is for him to cope with the challenges of e-learning, especially since increasing amounts of homework in e-learning is one of the causes of students' dissatisfaction with virtual education. Finally, regarding the insignificance of the relationship between effort-withdrawal and satisfaction with virtual education, it can be pointed out that this pattern of behavior in achievement situations shows a decrease in evaluation and interest in academic activities during the study period. This reduction, which becomes deeper and more serious in some learners, has consequences such as the learner's indifference to learning. Indifference shows a decrease in the value of education and a lack of interest in it on the side of the learner (Harackiewicz et al, 2008). Therefore, it can be concluded that people with this characteristic, regardless of whether it is face-to-face or virtual education, are not interested in learning and do not attach importance to it, and therefore the lack of relationship between these two variables is natural.

Another finding of this study was that there is no difference between the components of health-oriented lifestyle and students' satisfaction with virtual education based on their educational groups. This implies that facilitator and inhibitor behaviors of health-oriented academic life, regardless of students' field of study and even the different educational content they receive, affect students' satisfaction with education in general Salehzadeh et al. (2017) as well as satisfaction with virtual education.

Comparison of facilitators and inhibitors of health-oriented academic lifestyle in the two groups showed that the learned helplessness was more in Engineering students than in humanities students. This finding implies that, in the virtual education method, Engineering students felt more helpless in learning than humanities students, because, in this group, there is a need to teach and understand abstract topics that are challenging in virtual education. On the other hand, Engineering students were less optimistic than humanities students. In addition, effort withdrawal in engineering students is greater than in humanities students. One of the important reasons for these differences can be rooted in the motivation and hope of getting the right job and achieving goals. Another reason for this difference can be the difficulty in learning deeply and understanding the concepts in specialized Engineering courses. If students do not have a deep understanding of the material, they will not have any hope of success in specialized courses, and this will cause them helplessness and falling behind in their studies.

Based on the findings of the present study, in line with the study of Fathievajargah et al. (2018) and Sahbeigi and Nazari (2018), it is suggested that, in order to reduce the learned helplessness and effort with-

drawal in students, the teachers create meaningful learning in virtual education to emphasize learning through problem-solving and welcoming novel solutions, and try to compensate for the lack of face-to-face communication by providing dynamic and interactive learning activities. In line with MacIntyre et al. (2020) and Moore et al. (2011), the teacher must combine the different abilities of virtual students with living in a virtual classroom. Instead of engaging in abstract concepts that are presented in the form of one-way lectures in online classrooms, the student should have research-oriented and problem-oriented activities. In this case, the student enters into a discussion with the teacher and becomes fully involved and active in carrying out course projects. The teacher should be careful in choosing problems and select the ones that are important enough and especially related to real life and arising from everyday life experiences, only to arouse real curiosity and meaningful learning in the student.

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