RELATIONSHIP BETWEEN MOTIVATION TO LEARN ONLINE AND PERCEIVED STRESS AMONG HIGH SCHOOL STUDENTS

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Abstract

This study aims to find the relationship between different aspects of motivation to learn online and perceived stress among high school students. The main problem of the research is to determine if there is a correlation between perceived stress scale and motivation sub-scales (such as intrinsic goal orientation, extrinsic goal orientation, control of learning beliefs, self-efficacy, social engagement, professor support). The sample of the study consists of 85 high school students, of which 15 in the first year, 16 second, 25 in the third year, and 29 fourth year of high school. Perceived stress is measured by Perceived Stress Scale (PSS) by Sheldon Cohen, a widely used questionnaire with 10 items, and student motivation to learn online is measured with The motivation to learn online questionnaire by Shawn Fowler with 32 items. The research confirmed that 57,6 % of the sample have a moderate scale of stress. The results showed also that there is a significant negative and average correlation between perceived stress scale and self-efficacy, professor- support, and social engagement.

Keywords: motivation, online- learning, perceived stress, high school students

1. Introduction

In December 2019, in Hubei province, Wuhan, China, began the spread of a new virus and epidemy known as COVID-19, referred to as coronavirus disease (Wang. D, Horby, Hayden, & Gao, 2020). In March 2020, the World Health Organization declared officially Covid-19 as a pandemic situation and following by restrictions because of the intensity of spreading (World Health Organization, 2020).

The pandemic has affected the psychological state of people around the world. Stress and anxiety have affected a lot of students (Cao et al., 2020; Islam, Barna, Raihan, Khan, & Hossain, 2020). Within the context of the COVID-19 pandemic, transmitting the knowledge in the world has gone also via electronic learning, because social distancing is the only possible way to reduce the spread of Covid-19 (Biswas & Debnath, 2020). However, students' motivation plays a very important role in this new adaption (Zhou, 2016; Zhu et al., 2020). Generally, motivation refers to the inducement that leads somebody to act impromptu (Keskin & Yurdugül, 2020).

A variety of studies have got wind that learners' motivation may be a necessary issue touching learning (Brooker et al., 2018; H. C. K. Hsu et al., 2019). Moreover, researchers have found a strong relationship between the motivation to learn online and students' success and engagement in online learning settings (Keskin & Yurdugül, 2020).

There are a lot of sides of online education that might be thought of within the pandemic situation, however, we tend to have an interest in examining aspects of online learning motivation, and perceived stress scale on high school students. According to our access to data, there are presently no studies that have assessed especially high school student stress among students throughout the quarantine associated with the COVID-19 pandemic in North Macedonia and their motivation.

Therefore, this study aims to explore the correlation between different aspects of motivation in online learning and perceived stress level among students due to the Covid-19 and the resulting suspension of in-person teaching in North Macedonia.

1.1 Perceived Stress

Perceived stress incorporates feelings concerning the uncontrolled and unpredictability of one's life, however usually one must contend with irritating hassles, how abundant modification is happening in one's life and confidence in one's ability to contend with issues or difficulties. It's not a measurement of the type or how frequently has one person dealt with a stressful situation, but how a person feels concerning the general stressfulness of their life and their ability to handle stress.

People could suffer similar negative life events however appraise the impact or severity of the set o different extents as a result of factors such as personality, internal resources and support. During this approach, perceived stress reflects the interaction between an individual and their setting that they appraise as threatening or overwhelming during a situation which can affect their general wellbeing (Lazarus & Folkman, 1984).

1.2 Motivation to learn online

According to Paris and Turner (1994) motivation is the 'engine' of learning. Motivation will impact what we tend to learn, how we learn and when we choose to learn (Schunk & Usher, 2012). Analysis shows that motivated learners are more likely to undertake difficult activities, be actively engaged, relish and adopt a deep approach to learning and exhibit increased performance, persistence and creativeness (Ryan & Deci, 2000). There is an important relationship between motivation and learning (Brophy, 2010), Therefore motivation has been actively researched in educational settings (Schunk, Meece, & Pintrich, 2014). Despite this, studies that explore motivation to learn online contexts are restricted in each number and scope, as others have noted (Bekele, 2010).

2. Methodology

2.1 Research problem

The main research problem is to investigate: Is there a relationship between student motivation to learn online and perceived stress among high school students? The research questions are as follows:

1. Are students motivated for online learning?

2. What is the perceived stress scale among high school students?

3. What is the relationship between motivation to learn online and perceived stress?

4. What are the gender differences in student motivation to learn online and perceived stress?

2.2 Purpose of the research

The purpose of the research is descriptive, to find out the motivation of students to learn online among high school students also perceived stress among students. The main purpose of the research is to find the possible relationship between motivation to learn online and the perceived stress scale. Identify gender differences in two main variables.

2.3 Hypotheses

H.1 Students are motivated by online learning.

H.2 Students have high scores on the perceived stress scale.

H.3 There is a negative correlation between motivation to learn online and perceived stress.

H.3.1 There is a negative correlation between sub-scales of motivation to learn online and perceived stress.

H.4. Female students are more motivated for online learning than male students.

H.4.1 Female students have higher scores on perceived stress than male students.

2.4 Research sample

The study sample consists of 85 high school students from the city of Tetovo and Gostivar. Of which 15 in the first year, 16 in the second, 25 in the third, and 29 in the fourth year of studies. 69 of them are female and 16 male, 55 reside in rural and 30 in urban areas.

The sample was deliberately selected or networked sample. The selection of the sample was not random, but the students voluntarily completed the questionnaires. The application was online, the questionnaire was shared to high school students through social media groups from November to December 2020. We have selected demographic factors to identify and classify students. Participation was voluntary and anonymous.

2.5 Instruments

The online survey consisted of three components:

The socio-demographic part included data on the city, the school they are attending, age, gender, level of education, residence, number of family members, academic success, from which device they attend online learning.

Perceived Stress Scale by Sheldon Cohen.(S.Cohen et al, 1983) This scale is a widely used scale with ten questions that measure the perception of stress over the past month. Individual scores on the PSS can range from 0 to 40 higher scores means higher perceived stress. Scores of 0–13 means low stress, 14–26 moderate stress, and 27–40 scores mean higher stress. The perceived stress scale has shown good psychometric properties and it is easy to use (Cohen, S & G. Williamson, 1988; 1988 E. Lee, 2012; J.M. Taylor, 2015).

The original Motivation to Learn Online Questionnaire consists of 38 questions comprising seven sub-scales, each designed to assess a different aspect of motivation in online learning. In this research, we have used only six sub-scales (32 questions), except the Task-value scale because the questions in this sub-scale have been defined for a specific course. The psychometric measurement by the author showed good reliability for some sub-scales: The Intrinsic Goal Orientation subscale consisted of 4 items, and reliability analysis yielded a coefficient alpha of $\alpha = 0.70$. The Extrinsic Goal Orientation sub-scale($\alpha = 0.66$). The Control of Learning Beliefs($\alpha = 0.71$) The Self-efficacy sub-scale ($\alpha = 0.87$). The Task Value ($\alpha = 0.88$)- not included. The Social Engagement sub-scale($\alpha = 0.73$). The Professor Support sub-scale ($\alpha = 0.85$) (Fowler. Sh, 2000).

III. Results

The results are presented in tabular form after their processing in the Statistical Package for the Social Sciences program. As a preliminary analysis, the reliability of the questionnaires used in the research was ascertained. Also the distribution of variables in our sample.

Table 1. Cronbach Analysis for test Reliability (Source: Author)

P.S.S	M.L.O	I.G.M	C.L.B	E.G.M	S.E	S. Eff	P.S
0.881	0.86	0.54	0.71	0.84	0.88	0.57	0.86

Cronbach's Alpha Analysis for The Perceived Stress Scale confirmed that the scale is reliable with a coefficient α= 0.88, and motivation to learn online questionnaire is reliable with Cronbach's Alpha coefficient α = 0.86 also the analysis of the sub-scales of motivation for learning found reliable scale for extrinsic goal orientation (α = 0.84), self-efficacy (α = 0.88), professor support (α = 0.86).

To see whether the data are normally distributed, the preliminary test of Kolmogorov-Smirnov coefficient is interpreted, in the table below.

Table 2. Tests of normality for perceived stress and motivation to learn online (Source: Author)

Kolmogorov-Smirnov	Statistic	df	Sig
PSS	0.065	85	0.200*
MLO	0.108	85	0.01

According to Kolmogorov - Smirnov coefficient in Table 2, there is a normal distribution on perceived stress scale (p >0.05). The Motivation to Learn Online questionnaire doesn't show a normal distribution among students (p < 0.05).

The descriptive statistic for the two main variables is shown below in a tabular form.

Table 3. Descriptive statistic for Motivation for online learning (Source: Author)

	N	Min	Max	M	SD
Intrinsic Goal Orientation	85	8	20	15.54	2.418
Extrinsic Goal Orientation	85	4	20	14.41	4.212
Control of Learning Beliefs	85	5	20	14.35	3.127
Self- Efficacy	85	18	40	30.65	5.398
Professor Support	85	7	35	21.85	5.901
Social- Engagement	85	6	25	17.16	3.628

Based on the obtained results on the Motivation to Learn Online questionnaire, the results for each sub-scale showed: Intrinsic Goal Orientation[22] (M= 15.54; SD= 4.41) with a minimum value 8 and maximum 20, Extrinsic Goal Orientation[23] (M= 14,41; SD= 4.21,

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[22] The expected mean for intrisic goal orientation is 10. This mean is calculated from the highest score that can subject achieve in tes divided by two.

[23] The expected mean for exintric goal orientation is 10.

min= 4, max=20) Control of Learning Beliefs[24] (M= 14.35; SD= 3.12; min=5, max=20) Self-Efficacy[25] (M= 30. 65; SD= 5.39; min= 18, max= 40), Professor Support[26] (M= 21.85; SD= 5.90; min= 7, max= 35), Social- Engagement[27] (M= 17.16; SD= 3.62; min= 6, max= 25). All the obtained means are above the expected means.

Table 4. Descriptive statistic for perceived stress scale (Source: Author)

	Frequency	Percent
Low stress (0-13)	7	8.2
Moderate stress (14-26)	49	57.6
High stress (27-40)	29	34.1

The results show that 8.2 % of students have low perceived stress, there are 57,6 % of the sample with moderate perceived stress, 34,1 % with high stress scale. Our hypothesis that Students have higher stress scores is being rejected because most of the sample has shown moderate stress scale.

Taking into consideration the form of distribution the non-parametric correlation (Spearman analysis) between perceived stress and motivation to learn online is conducted.

Table 5. Correlation between perceived stress and Motivation to Learn Online(Source: Author)

	PSS
MLO	**r= -0.441; p<0.01**

The Pearson Correlation showed that there is a negative correlation between Perceived stress scale (PSS) and Motivation to learn online (MLO), (r = -0.441) and this correlation is significant (p <0.01). Higher scores of perceived stress scale reduce motivation to learn online.

For additional analysis, the coefficient of correlation for each sub-scale of motivation to learn online is conducted.

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[24] The expected mean for control of learning beliefs is 10.

[25] The expected mean for self-efficacy is 20.

[26] Expected mean for proffesor support is 15.

[27] Expeted mean for social-engagement is 12.5.

Table 6. Correlation between sub-scales and perceived stress scale (Source: Author)

	I.G.O	E.G.O	C.L.B	S.E	P.S	SO.EN.
PSS	r=-0.272: p<0.05	r= 0.210; p>0.05	r= -0.136; p>0.05	r=-0.428; p<0.01	r=-0.443; p>0.01	r=-0.434; p>0.01

Based on analysis for correlation we found negative and weak correlation between perceived stress scale and intrinsic goal orientation but the correlation is significant (r= -0. 27, p< 0.01), the correlation between perceived stress scale and extrinsic goal orientation is also weak but positive and this correlation is significant (r = 0.21, p< 0.05), The correlation between perceived stress scale and control of learning belief is very weak negative and not significant (r= -1.13, p> 0.05), the average correlation between perceived stress scale is found on self-efficacy (r= -0.44, p<0.01), professor support (r= -0.44, p< 0.01), social engagement (r = -0.43, p< 0.01).

Table 7. Descriptive statistics for gender differences and main variables (Source: Author)

	gender	N	Mean	Std. Deviation	Levene's	t- test sig
PSS	female	69	25.12	7.072	p>0.05	3.310; p<0.01
	male	16	18.75	6.256		
MLO	female	69	113.67	16.152	p<0.05	-0.374; p>0.05
	male	16	115.25	10.162		

Descriptive statistic for Perceived stress scale for females are (M = 25,12; SD= 7.07), and males (M = 18.75; SD= 6.25). There is low differences on means for motivation to learn online too, where (M = 115,25; SD= 10.16) for males and (M = 113,67; SD= 16.15) for females.

The Levene Test shows that there is homogeneity in two groups (p>0.05). According to t-test analysis, there are significant differences between males and females in perceived stress (t(83)= 3.31; p< 0.05). So our hypothesis H.4 Females have higher perceived stress scores than males is being accepted.

Between groups divided by gender for motivation to learn online according to Levene's test for homogeneity, there are no conditions to analyze differences (p< 0.05). There are no gender differences between groups for motivation to learn online.

4. Conclusions

The results found that there is normal distribution of perceived stress on the sample (p>0.05). The Motivation to Learn Online doesn't show a normal distribution among students (p < 0.05).

The results for students Motivation to Learn Online for each sub-scale showed higher means than expected. All the obtained means are above the expected means. The subscale for intrinsic goal orientation for students shows that students have intrinsic orientation higher than expected, the expected mean for extrinsic goal orientation is 10, and the students scored a mean of M = 14,41., the same goes and for control of learning beliefs (M= 14.35), higher means for self-efficacy are found also (with the expected mean 20 students gained M= 30. 65), the descriptive data showed also that students have professor support, in subscale for professor support the expected mean was 15 and students gained a mean of (M= 21.85), the least difference of mean is on social-engagement (M= 17.16), even though the expected mean is 12.5.

The study showed that 8.2 % of students have low perceived stress, there are 57,6 % of the sample with moderate perceived stress, 34,1 % with high stress scale. Our study also showed that most of the sample showed moderate levels of perceived stress scale.

Other studies with university students found out that 67.1% of students feel stress during Covid lockdown, 27.8 said that don't have stress (Al-Kumaim, N.H. et al., 2021).

The mean score of the perceived stress scale in a study was 22.12 ± 7.33, and a high-moderate perceived stress was endorsed by 30.2–55% of the participating students. This study showed high to moderate levels of stress among students in KSA during the COVID-19 outbreak. Female participants showed higher levels of stress (D. A. AlAteeq, S.Aljhani, D. AlEesa, 2020).

The set hypothesis: H.4 There is a negative correlation between motivation to learn online and the perceived stress scale is accepted. The Pearson Correlation showed that there is a negative correlation between perceived stress and motivation to learn online (r = - 0.441) and this correlation is significant (p< 0.01) which means higher scores of perceived stress lead to lower motivation to learn online.

Results showed weak correlation between perceived stress scale and intrinsic goal orientation (r = -0. 27, p< 0.01) also weak correlation between extrinsic goal orientation (r = 0.21, p< 0.05). The correlation between perceived stress scale and control of learning belief is very weak negative and not significant (r = -1.13, p> 0.05). Interesting results that showed a negative and average correlation between perceived stress and self-efficacy (r = -0.44, p<

0.01), between perceived stress and professor support the results also shows a negative and weak correlation (r = -0.44, sig <0.01), students perceived stress and their social engagement shows a correlation (r = -0.43, p<0.01).

Descriptive statistics for Perceived stress found differences on the perceived stress scale between female and male students. Female students have higher means on perceived stress scale than male students. According to t-test analysis, there are significant differences between males and females in perceived stress (p< 0.05). Consequently, the statement on the hypothesis that female students have higher perceived stress scores than males is being accepted. There are no gender differences between groups for motivation to learn online.

Since the sample of this this study was a convenience sample, it is possible that it is not an accurate representation of the population it seeks to study, so the data cannot be generalized. Students who do not perform well in online classes or who exhibit low levels of academic motivation are a lot less likely to participate in a completely voluntary online study that offers no incentive for participation. Our sample consists of 56 excellent students, 27 very good and 2 good grades.

Another possible limitation is reporting bias, as the study depends on self-reported information that may be affected by participants, interpretation of the items or their tendency to report their emotions in a certain manner.

Further studies are necessary to conduct longitudinal assessments of stress and anxiety and other challenges that high school students are facing, to produce evidence-based mental health interventions and other possible help during crises to high school students. These results could be used as a baseline to investigate the stressors and importance of finding new ways on motivating students because there are new circumstances.

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