

“STRESS LEVEL” RANKING OF THE PSYCHOLOGICAL BURDEN SEEN FROM THE STUDENTS’ SELF-EVALUATING OPTICS AFFECTING THE ACADEMIC ACHIEVEMENTS IN THE COVID-19 CONDITIONS

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Abstract

The psychological burden, generated “in excess” and experienced in perceptions, deemed as interdependent by the Covid-19 conditions, is a potential factor that affects the students’ life and calls for investigation and study.

The enforced restrictions to stop Covid-19 infection spread made obligatory the transfer of teaching and learning in the online format. Although it is difficult to inspect anxiety and psychological stress, yet, using specifically built questionnaires based on the theoretical and scientific guidance and in close consultation with the specialists, the present research study is developed. The developed questionnaire was used with the statistical tests applications. It was specified in separate sections that served to clearly defined purposes and hypothesis. The sample used (n=130) was randomly and not obligatorily selected from the Bachelor cycle students of the “Canadian Institute of Technology” University College population. They responded confidentially and the responses were confidentially processed. 30.8% of the selected sample were females and 69.2% were males.

The generated anxiety and stress were studied for their impact in the academic achievements and in stimulating the learning abilities and interests. A separate section evaluated the motivating perception as regards the motivating style in knowledge transfer. This study intends to find the most effective forms of transferring and evaluating knowledge. In addition, the study lays out the need for analysis in facing the challenges the online teaching and learning processes present in the Covid-19 conditions in order to identify the positive experiences to be brought forward in continuation.

Keywords: Covid 19, psychological burden, motivating style in knowledge transfer, academic achievement, statistical tests

Introduction

The suddenness of the Covid-19 spread which appeared in the expanding infections and their consequences at global level, conditioned the prevention measures to forestall any more serious impacts in the real life of the human world.

As anywhere in the world, Covid-19 affected and is still affecting the operation of the academic learning process in Albania.

The governmental institutions have established and are still in the process of establishing legal

measures that go along with the social isolation approach, which make the identification of other forms of communication with the students obligatory. With the intention of non-interrupting the lessons and as an emergency need, the teaching and learning process was transferred from the auditorium to the online format, but it faced challenges that call for continuous study surveys for performance quality advancement in the academic achievements.

“I don’t think what is happening right now can

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be or should be considered online learning or distance education, or any other established term used to describe learning that is not done face to face. This is emergency teaching and learning in a time of unprecedented crisis.” [Downes 2020]

The online teaching and learning experiences in Albania were scarce, therefore we faced two tendencies: first, embracing the online teaching and learning as an indispensability to avoid big and direct physical gatherings; second, motivating the online learning in the form of the academic teaching and learning starting from the transfer format of lectures, course assignments, etc. Along with the other factors, closure of the students’ boarding houses and the quarantines for the infection symptoms became potential factors for “added” anxiety and stress that emerged in the students’ academic life. The anxiety and stress “in excess” shocked the motivation for performance in the academic achievements. Adler [2003] says that psychology is understanding individuals’ attitude towards the sensory impressions received by other bodies ... anxiety, always in the same opinion with their lifestyle.

“The focus of the humans’ attention may move when they are in high density situations”. [Worchel & Brown 1984] In any environmental optics which encompasses and is seen by the individual, may originate stimulus that produce anxiety and stress of which the frequency and intensity bear different levels of the psychological burden caused. Covid-19 pandemics is a dominating factor in the anxiety and stress stimulus. Dread and dismay of getting infected by this virus causes agoraphobia (as fear of open and public spaces) and claustrophobia (as fear of enclosed spaces). Not rarely the anxiety and stress disorders are accompanied by panic attacks. Any individual who sees himself inadaptably to the environment where he/she lives has difficulties in fulfilling the imposed and required obligations. Therefore the research study inquiring the perceived self-evaluating anxiety and stress that emerged in the students’ life in the Covid-19 conditions not only

makes evident its implications with the academic achievements related performance but also makes further analysis in different perspectives obligatory. This study is founded on a quantitative survey with applications in statistical tests. It is based on the questionnaire survey which consists of direct confidential questions and presents to the students the survey purpose. The sample in consideration is random and with no obligation imposed.

Acceptance of the perceived self-evaluating anxiety and stress, perception of the motivating style of knowledge transfer, and the management of time are examined in an interrelated manner with the performance of the academic achievements values. A specific objective of the research is to study the impact of the above factors in relation to the study years.

Literature

The anxiety and psychological stress burden caused by the Covid-19 and its impact in the students’ life are under extensive study by the academic world. In order to identify the stimulus factors of the Covid-19 that caused psychological burden on students [1] a study involving seven universities in the USA was conducted. From the study resulted that 45% of the sample incurred high anxiety and stress levels, 40% moderate levels, and 14% low levels of the psychological burden.

While in the study of [2] that involved a sample of 195 students, resulted that 71% indicated increased stress and anxiety due to the COVID-19 outbreak. There are many other studies in different countries that show escalation of the psychological burden in the students’ life.

Studies of the same character are conducted in the Balkans as well, such as [8]. According to the authors, the study examines the perceived anxiety and stress and inquires on the students’ attitude towards the online learning.

There are also a number of studies where the communication relations between the instructors and students are studied with the respective

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effects on the online learning in the Covid-19 conditions as regards the students’ self-evaluating perceptions. [15]

The anxiety and stress in the students’ life are also reflected in the performance of the academic achievements. [3,4]

According to [6], time management is very important and it may actually affect individual’s overall performance and achievements.

In the optics of these papers, the present study is set forth with its own specifics.

Methodology

This research study is focused on the self-evaluating perception of the students’ psychological burden related with the perception of the knowledge transfer motivating style in the online teaching and learning process.

The methodology used to estimate the values of the respective variables and their interactive relation is grounded on the responses to the questions in the questionnaire sections as regards the respective objectives and purposes applied in the statistical tests that are reasoned with the accompanying analysis.

The selected sample consists of students (n=130) from the Canadian Institute of Technology university college, of whom, 53.1% are first year students, 26.9% are second year students, and 20% are third year students. The study was conducted during the month of January 2021. The questionnaire consisted of a total of 50 questions set in separate sections. Questions 1 to 7 have to do with information about the student’s life status. The first section includes 24 questions about the self-evaluating perceptions of anxiety and stress. Reliability coefficient (Cronbach’s alpha) for this section is 0.905.

The second section includes 10 questions that consist in the perception of the motivating and teaching style for the transfer of knowledge. Reliability coefficient (Cronbach’s alpha) for this section is 0.784.

The third section relates to the perception of time

administration and management.

Development of the questionnaire is based on the research experiences from social and psychological sciences and psychoanalysis, on popular packages from this field, and on close consultations with specialists of the field in adaptation to the present conditions and study objectives.

The information on the academic achievements performance is taken through the average of the midterm exam points by converting the evaluation for all courses to 0-100 points. The responses to the questionnaire’s questions are based on the Likert scale (from 1 to 5): 1. “Strongly disagree”; 2. “Somewhat agree”; 3. “Neutral”; 4. “Agree”; 5. “Strongly agree”.

In defining the levels of the psychological burden as regards the values of the variables defined by the Likert scale, the difference between the real maximum value and the real minimum value is considered along with the segment of the theoretical values (for instance, in the 24-questions section, the theoretical segment of the variable value is [24,120], while the segment of the real values expansion in general has a smaller length, therefore the ratio of the real values segment with the theoretical values one is studied by also taking into account the standard deviation.). Consequently, the ranking for the psychological burden is based on this criterion.

In order to examine the truthfulness of the hypothesis, statistical non-parametric tests are used by preliminarily defining the independent and dependent variables for any case related to the applying features of each test.

1. Mann Whitney Test (the so called ‘U Test’) uses the sums of the samples’ rank, when in the independent variable two independent groups are given. It is used to compare whether there is a difference in the dependent variable for two independent groups. The statistical test is:

$$U = n_1 \cdot n_2 + n_x \cdot \frac{(n_x + 1)}{2} - T_x, \text{ where}$$

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Tx is the larger rank total

nx , is the number of people in group that gave the larger rank total)

2. Kruskal-Wallis Test is used to define if there are significant statistical differences among more than two independent groups with one dependent variable.

(The statistical test is

$$K = \frac{12}{n(n+1)} \left(\sum_{i=1}^{\alpha} \frac{R_i^2}{n_i} \right) - 3(n+1), \text{ where}$$

n is the number of total surveys, $n = \sum_{i=1}^{\alpha} n_i$

R_i is the sum of the given surveys ranks for the

$$\text{sample, } R_i = \sum_{j=1}^{n_i} R(X_{ij}), i=1,2,\dots,\alpha$$

X_{ij} is the j^{th} survey from the given sample and $R(X_{ij})$ is the rank of X_{ij})

3. The Jonckheere - Terpstra Test is similar to the Kruskal -Wallis H test, which can be used to determine if there are statistically significant differences between two or more groups of an independent variable on a continuous or ordinal dependent variable. [24]

During the research study process, the ethics principle in the selection of the respective sample was enforced by presenting to the sample the objectives of the study, the enforcement of confidentiality as regards the answers they would give for the respective sections.

Applications and analysis

Scrutiny of truthfulness for any hypothesis is given by presenting the respective tables for the results gained by the statistical tests which accept or deny the laid out hypothesis. Each data table is accompanied by its own analysis where the auxiliary data, such as percentages, along with a brief reasoning, are also given.

Analysis of the laid out hypothesis

Hypothesis 1. “There are significant differences between the level of the perceived self-evaluating anxiety and stress based on the study years at the Bachelor cycle.” (Kruskal Wallis statistical test is used)

Ranks			
	Years	N	Mean Rank
Anxiety and stress	First year	69	53.72
	Second Year	35	76.14
	Third Year	26	82.42
	Total	130	

Test Statistics ^{a,b}

Anxiety and stress	
Chi-Square	19.635
df	2
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: vitet

Based on the test results table a significant statistical difference is noted between the perceived stress based on the Bachelor study years ($p=.000$). A significant difference is also noted to the rank average for any group. The third year has the highest rank average, which means that there’s a more significant correlation with the experienced levels of the psychological burden.

Perception based on ranking division with the perception levels of the psychological burden for the anxiety and stress variables was made as follows: to the light anxiety and stress group was given the value $x_{k_1} \in [43,55]$, to the moderate anxiety and stress group was given the value $x_{k_2} \in [56,87]$, and to the high anxiety and stress group was given the value $x_{k_3} \geq 88$

(Based on the Likert scale, the points are 1-5 and for the 24 questions they vary from 24 to 120; for that reason, the above distribution of points is made). The division of points might have been made with four levels as well (1. With light anxiety and stress, 2. With moderate anxiety and stress, 3. With increased anxiety and stress, 4. With aggravated anxiety and stress), but the ratio of the real values

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segment length to the theoretical values segment length is $5296 = 0.54$, therefore the three levels division was considered more reasonable. Should this coefficient was bigger than 0.75, the division might have been done by 4 ranking levels. The same reasoning is used for the other two sections as well. (Here also are found different experiences in different studies.)

Further, considering the values of the variable that is related to the perception of the anxiety and stress based on the years of study, it is noted that the psychological burden with high levels of anxiety and stress was for 23.1% of the third year students, 14.3% of the second year students, and 5.8% of the first year students. Thus, in the first year, as compared to the second and third years of study, a lighter level of anxiety and stress perception was noted. In making an outline of the different and potential affecting factors, the word will further be for the social and psychological sciences specialists. In addition, emphasis is made for the academic institutions that may think of specific measures for the facilitation of the negative effects.

Hypothesis 2. “There are significant differences for the level of the self-evaluating perceived anxiety and stress between males and females.” (Mann-Whitney statistical test is used)

	Sex:	N	Mean Rank	Sum of Ranks
Anxiety and stress	Female	40	69.69	2787.50
	Male	90	63.64	5727.50
	Total	130		

Test Statistics ^a

	Anxiety and stress
Mann-Whitney U	1632.500
Wilcoxon W	5727.500
Z	-.978
Asymp. Sig. (2-tailed)	.328

a. Grouping Variable: Gjinia:

The test revealed insignificant differences in the preferences of males and females, $U=1632.500$, $Z= -.978$, $p=.328$. Although the value of p does not reveal significant differences, based on the self-evaluating perception of anxiety and stress taken from the data, it has resulted that high levels of anxiety and stress was shown for 15% of the females and 10% of males, while light levels of anxiety and stress was shown for 28.9% of males and 22.5% of females. Considering the average for the females’ rank and males’ rank, it is noted that the females tend to have higher levels of experienced anxiety and stress.

Hypothesis 3. “There are significant differences in the level of the motivating perception in the knowledge transfer style based on the study years for the Bachelor cycle.”

	Years	N	Mean Rank
Knowledge transfer style	First year	69	57.78
	Second year	35	78.44
	Third Year	26	68.56
	Total	130	

Test Statistics ^{a,b}

	Knowledge transfer style
Chi-Square	11.787
df	2
Asymp. Sig.	.003

a. Kruskal Wallis Test

b. Grouping Variable: Vitet

Knowledge transfer style was divided in three levels (perception of the knowledge transfer style that stimulates added motivation, perception of the knowledge transfer style that stimulates moderate motivation, perception of the knowledge transfer style that does not stimulate motivation). Division in three ranking levels in this hypothesis is also done based on the criteria explained in the Hypothesis 1. For the first level the variable values

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are $x_{k1} \leq 22$, for the second level the variable values are $23 \leq x_{k2} \leq 35$, and for the third level the variable values are $x_{k3} \geq 36$.

In order to assess the differences for the level of the motivating perception in the knowledge transfer style based on the years of study, the Kruskal Wallis test was used. The test revealed significant differences (Asymp. Sig. = .003) in the preference for the motivating perception in the knowledge transfer style for the 3 years of study. The statistically significant differences noted that were revealed due to the value of $p < 0.005$, but also because of the rank averages for each group, show that the first year is evaluated for higher motivation. Based on the data collected for the motivating teaching style in the knowledge transfer, added motivation have 30.4% of the first year students, 19.2% of the third year students, and 8.6% of the second year students. Differences in percentages are also noted at the level that does not stimulate motivation, like 14.3% of the second year students and 7.7% of the third year students.

Hypothesis 4. “There are significant differences for the perception levels of the motivating style as related to the knowledge transfer against the self-evaluating perception of the anxiety and stress.” To assess the truthfulness of this hypothesis, the Jonckheere-Terpstra test was used.

Jonckheere-Terpstra Test^a

Pedagogue's style	
Number of Levels in stres	3
N	130
Observed J-T Statistic	2966.500
Mean J-T Statistic	2284.500
Std. Deviation of J-T Statistic	165.026
Std. J-T Statistic	4.133
Asymp. Sig. (2-tailed)	.000

In the above table is noted that Asymp.Sig=.000, which means that there are significant statistical differences for the perception of the motivating style in the knowledge transfer against the self-evaluating perception of the anxiety and stress. This shows the impact of the anxiety and stress to

the attitude towards the motivating perception of the teaching style.

Hypothesis 5. “There are significant differences in the use of technology to acquire knowledge against performance of the academic achievements.”

		Ranks		
Attendance of online lessons		N	Mean Rank	Sum of Ranks
Academic performance	With personal(or family)computer or laptop	115	67.99	7819.00
	With personal cell phone	15	46.40	696.00
	Total	130		

Test Statistics^a

Academic performance	
Mann-Whitney U	576.000
Wilcoxon W	696.000
Z	-2.088
Asymp. Sig. (2-tailed)	.037

a. Grouping Variable: Ndjekja e mesimit online

In order to assess the differences between the groups of students who used computers and the groups of students who used the cell phones to acquire knowledge during the lessons against their academic achievements, the Mann-Whitney U test was used.

The test revealed significant differences (Asymp. Sig.=.037) in the preferences for the academic achievements for the two groups of students. In the above table is noted that the students who use computer or laptop to acquire knowledge during the lessons reflect more distinguished tendencies in the academic achievements performance against those who used cell phone.

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Also, the respective data table shows that of the students in the group that used cell phone to acquire knowledge during the online lessons, 6.7% were evaluated with more than 80 points in the midterm exam, while in the other group 30.8% of the students.

Hypothesis 6. “There are significant differences between the students’ employment status and the academic achievements performance.”

	Employment status	N	Mean Rank	Sum of Ranks
Academic performance	Employed	42	64.52	2710.00
	Not employed	88	65.97	5805.00
	Total	130		

Test Statistics^a

	Academic performance
Mann-Whitney U	1807.000
Wilcoxon W	2710.000
Z	-.204
Asymp. Sig. (2-tailed)	.838

a. Grouping Variable: Punesimi

In order to see the significant differences between the students’ employment status and the academic achievements performance, Mann-Whitney U test was used. The test showed that there are no significant differences (Asymp.Sig=.0838) in preference for the academic achievements performance between the two groups of employment. Further, considering the collected data that are shown in the table, differences are noted in the academic achievements performance between the employed students and the not employed ones. The employed students who were evaluated with over 80 points for their academic performance are 28.6%, while the not employed students are 34.1%.

Hypothesis 7. “There are significant differences between the self-evaluating levels of the time management based on the study years of the Bachelor cycle.

	Years	N	Mean Rank
Time management effects	First year	69	66.90
	Second year	35	64.39
	Third year	26	63.29
	Total	130	

Test Statistics^{a,b}

	Time management effects
Chi-Square	.366
df	2
Asymp. Sig.	.833

a. Kruskal Wallis Test

b. Grouping Variable: vitet

Time management efficiency is divided in three levels. At the first level the values of the variable are $x_k \leq 121$ (good time efficiency and management), at the second level the values of the variables are $22 \leq x_{k2} \leq 33$ (moderated time efficiency and management), and at the third level the values of the variable are $x_{k3} \geq 34$ (non motivated time efficiency and management).

In order to evaluate the significant differences between the self-evaluating levels of the time management based on the study years of the Bachelor cycle, the Kruskal Wallis test was used. The test revealed insignificant differences (Asymp. Sig.=.833) in the preference between the self-evaluating levels of the time management in the three years of studies of the Bachelor cycle. Based on the collected data shown in the table for the students’ perception values as regards the time administration, it is noted that the percentage for the “good motivation” from the time management is included in the segment [18.8%-23.1%] and the percentage for the “moderated motivation” from the time management efficiency is included in the segment [71.4%-75.4%].

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Hypothesis 8. “There are significant differences among the levels of the psychological burden (self-evaluating perception for anxiety and stress) against the academic achievements.”

Ranks			
	Anxiety and stress level	N	Mean Rank
Academic performance	Light anxiety and stress	36	69.71
	Moderated anxiety and stress	78	65.98
	High anxiety and stress	16	53.69
	Total	130	

Test Statistics ^{a,b}

	Academic performance
Chi-Square	2.035
df	2
Asymp. Sig.	.361

a. Kruskal Wallis Test

For the assessment of the truthfulness of this hypothesis, the Kruskal Wallis statistical test was used. From the results shown in the table is noted that the constant $p=0.361$, therefore we cannot say that there are significant differences among the levels of the psychological burden against the academic achievements.

If the academic achievements performance acquired through the midterm exam results average is divided in three levels: first level, less than 65 points (13% of the students’ number); second level, 66-80 points (57% of the students’ number); and the third level, over 80 points (30% of the students’ number), it is noted that 90% of the third level students have light and moderated stress level, 23.51% of the first level students have high stress level. Although there are not significant differences among the levels of the psychological burden against the performance of academic achievements, the data reveal impacts. The value of the standard deviation for the academic achievements performance is relatively small $\Delta \sigma = 10.33$.

Conclusions

The study researching anxiety and psychological stress burden affecting students’ life when facing Covid-19 in the conditions of online teaching and learning showed that 73% of the students are included in the high and moderate anxiety and stress level perception. Referring to the studies conducted for the anxiety and stress psychological burden in 6 Albanian public universities prior to Covid-19 outbreak (9), this indicator was 45.1% thus showing a 27.9% increase of the psychological burden in the students’ life as a direct consequence of the Covid-19.

Scrutiny for the truthfulness of the hypothesis raised in the study by applying the respective statistical tests, confirmed that perception level rankings for the anxiety and stress are evidently affected by the study years at the Bachelor cycle. These impacts from the potential stimulating factors depend on the individual reacting perceptions of the students according to the years of study.

The impact at the perception level showed that there are interacting relations with the perceptions of the motivating style during the transfer of knowledge which is also reflected in the students’ academic achievements. The approaches presented in the study for the transfer of knowledge given in the motivating style perception, lay out the need for the improvement of this behavior as concerns the teaching style and a better conceptualization of the potential motivating factors. In addition, the study showed the influence on the performance of academic achievements depending on the technological equipment used during the knowledge acquisition (computer or cell phone).

The study puts forward that for any detail that is related to the psychological burden, findings for facilitating relation of the negative effect may be established.

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Limitations of the study

1. The study theme is rather broad and interrelated with the Covid-19 conditions in the online format therefore there are not a few variables that may be accepted for research which may affect the academic achievements performance.

2. The time aspect in which the study was conducted cannot predict to satisfy any response towards the consistency of the acquired results where any result is never static in a reality expanded on time.

3. Research studies in relation to the students’ psychological burden always remain necessary and should be continuous. This is dictated, as in a relation between two variables there always might be a third unconsidered factor. This constitutes another reason why there cannot be pretended that the study is exhaustive.

4. Examination of the performance of academic achievements was made only based on the general average of the midterm exams which were conducted online, while the subsequent exams may present new landscapes.

5. The selected sample was random and on volunteering basis by any individual as such it cannot be said that the findings are fully inclusive.

6. In the students’ responses, other influences related to the hesitation to give the true answers cannot be excluded. Also, the students’ perceptions are always relative and related to their individual personality.

Concluding, regardless the limitations, the study itself, with the theme it deals with, brings findings on a close recognition of the potential factors affecting the academic achievements performance in the conditions of Covid-19 and online teaching and learning format.

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