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Original Article

Measuring academic engagement among university students in Romania during COVID-19 pandemic

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Abstract
The COVID-19 pandemic has impacted many aspects of personal and professional development, outlining different unprecedented behavioural changes among diverse age population, worldwide. In the context of the lockdown restrictions, the aim of the present study was to explore the extent to which emergency states and higher institutions closure affected academic engagement among studying youth. In this direction, data were collected from 227 undergraduate students (N=227) enrolled in different fields of study in public universities in Romania. The Utrecht Work Engagement Scale for Students (UWES-9S) (Schaufeli et al., 2006) was used to assess Romanian students' academic involvement in the particular context of remote learning imposed by coronavirus outbreak. An additional open question was introduced in the present study, to analyse personal experiences and activities undertaken by students during the stay-at-home period. The main findings of our research were discussed in relation with students' average degree of academic engagement, the psychometric properties assessment, the resilience stories and its effects on students'

mental health and academic involvement. Emphasis was given to a deeper understanding of students' responsiveness and proactiveness concerning behavioural, cognitive, and emotional engagement in their remote academic learning and non-academic life.

Keywords: academic engagement, UWES, students, Romania

The year 2020 has witnessed huge concern in researching the impact of Covid-19 on people's daily commitments and behaviours. Such topic has received much attention especially when it comes to rethinking the remote learning environment and the way it affects students' well-being and their resilience building mechanisms (Kanekar, Sharma, 2020; Brammer, 2020). Now more than even, international organisations, practitioners and researchers (Stathopoulou, Mouriki, Papaliou, 2020; Van de Velde et al., 2020; Brooks et al., 2020) seem to be more concerned on sustainable recovery within higher education (Arnove, 2020; Hazelkorn, Locke, 2020; Masri, Sabzalieva, 2020), on providing students with strategic tools, appropriate well-being practices aiming to reduce mental distress and enhance the challenging development of youth (Fotuhi, 2020; Nowak et al., 2020).

Following the global trends, Covid-19 pandemic has pushed the academic institutions to close their doors replacing thus the in-person learning and with the distance learning courses. In accordance with the International Association of Universities ([IAU], 2020), and following the COVID-19 Global Impact Survey findings (Marinoni, Land, Jensen, 2020), it is commonly agreed that more than 1.5 billion students across the world were affected by the educational and academic institutions' closures due to pandemic breakdown. UNESCO reported at the beginning of April 2020 that schools and higher education institutions were closed in 185 countries, impacting

89.4% of total enrolled learners, an equivalent of 20% of the global population.

The Romanian context

Looking at the situation of Romania, a post-communist Eastern European country and non-WEIRD one [Western, educated, industrialized, rich and democratic-WEIRD] (Henrich, Heine, Norenzayan, 2010), as stated by the Group for Strategic Communication, until 15th of October 2020, the number of diagnosed cases of COVID-19 in Romania was 168.490, among whom 125.009 individual were cured, whereas the number of deaths was 5.674 (Ministry of Internal Affairs, [MAI], 2020).
The World Health Organization (World Health Organization [WHO], 2020) published increasing incidence for Romania, with Covid-19 diagnosed cases numbered at 196,004 and the number of deaths at 6,163 from the beginning of the year until the 24th of October 2020. Such alarming statistics corroborated with the latest announcement of school re-closure from the 26th of October 2020, served as an alert driver for academic institutions to act immediately.

Therefore, in such an unprecedented context, students may encompass a fragile target group for being studied from the perspective of adapting to and engaging themselves in the newly established digitalised learning environment, as a response to Covid-19 measures.

Given this contextual overview, in Romania the application of positive psychology engagement research framework, in the framework of Covid-19 outbreak, is still less advanced. Recent Romanian literature has investigated students' online learning related to their adaptation to remote learning. For example, a recent study (Lup, Mitrea, 2020) undertaken on 3603 students registered at the Romanian Universities, reveals that the

remote learning is completely unfavourable due to the lack of interaction to colleagues, due to an increased number of tasks, projects and homework. The limited access to libraries, the deficit in student-professor communication, the lack of concentration, the inappropriate environment or the lack of rest, of wellbeing and calmness were among the prevalent negative individual, and social effects of distance learning in Romanian universities that the study highlighted (Lup, Mitrea, 2020, p.1-4).

Despite the negative impact of Covid-19 at personal and interpersonal level, there are some positive effects, visible in terms of the civic engagement of medical students from "Victor Babeş" University of Medicine and Pharmacy Timişoara, the Faculty of Medicine in Sibiu and University of Târgu-Mureş, in supporting the Covid-19 patients, or of students from "Transilvania" University of Braşov who were started a micro-production line based on 3D printing technology for the creation of the visors used by medical personnel (Rusu, 2020) Therefore, in such uncommon context, this paper aims at presenting how Romanian students' engagement posits itself in the new established remote learning environment, and what are the emotional, emergency-responses students give when their academic work is called into question.

Conceptualization of work engagement

Our conceptualisation of work engagement among students draws from the widely cited definition given by Schaufeli et al. (2002), where the term denominates "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli, Salanova, González-Romá, Bakker, 2002, p. 74). Vigor is understood in terms of "high levels of energy and mental resilience while working, the willingness to invest effort in one's work" (Schaufeli, Salanova, González-

Romá, Bakker, 2002, p. 74); dedication covers "a sense of significance, enthusiasm, inspiration, pride, and challenge" (p. 74), while absorption means "being fully concentrated and deeply engrossed in one's work, whereby time passes quickly and one has difficulties with detaching oneself from work" (p. 75). There exists a considerable body of literature on this three-fold construct dimension of work engagement measured with the Utrecht Work Engagement Scale, which, over the years went through different versions (UWES-24, UWES-17, UWES-15, UWES-9, UWES-3), after being tested in diverse occupational environments (Schaufeli, et. al, 2019), and cultures (Schaufeli, Bakker, 2003; Extremera, Sánchez-García, Durán, Rey, 2012; Zecca et al., 2015; Xanthopoulou, Bakker, Kantas, Demerouti, 2012; Petrović, Vukelić, Čizmić, 2017; Vazquez et al., 2016).

As it has been previously reported in the literature, work engagement was related, among others, to job satisfaction (Christian, Garza, Slaughter, 2011), to burnout (Schaufeli, Martínez, Marques-Pinto, Salanova, Bakker, 2002), to workaholism (Schaufeli, Shimazu, Taris, 2009), to job resources and demands (Schaufeli, Taris, 2014), to personal motivation (Sonnentag, 2003), to personality traits (Zecca et. al., 2015), or to work-life balance aspects (Montgomery, Peeters, Schaufeli, Den Ouden, 2003).

Cultural and methodological evidence on work engagement

Work engagement has received much attention over the last two decades, being understood as an "antipode" of burnout (Maslach, Schaufeli, Leiter, 2001), seized in a less unwell-being work-related light, but for a more positive occupational health psychology promotion (Salanova, Martínez, Llorens, 2014; Schaufeli, Salanova, 2007). Good psychometric properties of this

UWES-9S scale were shown along different studies run in countries such as Italy (Balducci, Fraccaroli, Schaufeli, 2010; Loscalzo, Giannini, 2019), Spain (Serrano, Andreu, Murgui, Martínez, 2019), Ecuador (Portalanza, Grueso, Duque, 2017), Chile (Carmona-Halty, Schaufeli, Salanova, 2019), Korea (Römer, 2016), China (Meng, Jin, 2017), Japan (Tayama et al, 2018), Russia (Lovakov, Agadullina, Schaufeli, 2017), Serbia (Petrović, Vukelić, Čizmić, 2017), Turkey (Çapri, Gündüz, Akbay, 2017). When reporting the psychometric values of the UWES-9, research outcomes led to either a three-factor structure validation (Carmona-Halty, Schaufeli, Salanova, 2019; Zecca et al. 2015) or to one factor model (Hallberg, Schaufeli 2006; Schaufeli, Bakker 2003; Schaufeli et al., 2006, Kulikowski, 2017). Findings regarding work engagement among pupils and students have led to the development of The Utrecht Work Engagement Scale for Students (UWES-9S). In Romania, two of the Utrecht Work Engagement Scale versions (UWES-17 and UWES-9, Schaufeli, Bakker, 2003) have been translated and administered among Romanian samples, by Vîrgă, Zaborilă, Sulea, Maricuțoiu (2009). Moreover, similar noteworthy empirical studies (Cazan, 2015; Stan, Cazan, 2019; Sulea, van Beek, Sarbescu, Vîrgă, Schaufeli, 2015) measured work engagement among university students. Despite such interest, in Romania, no one to the best of our knowledge raised the question of the testing UWES-S9 among university student samples especially during threatening environment, such as Covid-19 lockdown.

The present study

Within the framework of the above-mentioned theoretical and empirical considerations, the purpose of our paper was to contribute to the already existing literature, by expanding it to nowadays pandemic context. The paper is part of a larger project

"Resilience and Well-Being during Covid-19 Pandemic", initiated by the first author. What does it look like studying in a virtual environment? What can be done to better stimulate students' involvement during remote learning? Such questions come to any professor mind, interested in assessing and improving students' academic engagement. From such simple questions we have started to configure the present empirical research, where, besides the assessment of the preliminary analysis of UWES-9S factor structure, we aim to analyse: 1) the degree of academic engagement among university students, along with 2) the narratives of students' work engagement. Consequently, given the rapid changes imposed by the state of emergency during pandemic, we expected that there is a moderate degree of work engagement among student target sample (hypothesis 1). In line with this statement, we address the following research question: What are the imprints of the online learning on Romanian students' engagement? (Research question 1).

Methods

Participants

A total of 227 university students were recruited for the present study, with a mean age of 22,6 years old, mainly females (77,9%), enrolled in Bachelor (88.1%), Master (11,3%) study programmes at different higher institutions from central Romania.

	Romanian student sample (n = 227)
Age (in years)	
M (SD)	22,6 (5,3)
Gender (%)	
Male	22.1%
Female	77.9%
Study program	
undergraduate	88,1%
master	11,3%
PhD	0,6%
Working during the state of emergency	
yes	24,4%
no	75,6%

Table 1. Sample characteristics

Instruments and procedure

Socio-demographics: Students were asked to report their university, study programme, year and field of study, age, gender, and if they are working or not during the state of emergency / alert during Covid-19 pandemic.

Work engagement: An adaptation of Utrecht Work Engagement Scale for Students (UWES–9S) put forward by Schaufeli, Bakker, Salanova (2006) was used to assess work engagement among students in Romania. The Utrecht Work Engagement Scale for Students (UWES–9S) consists of nine items, rated on a 7- point Likert Scale ranging from 0 (never) to 6 (always). Sample items: "When I'm doing my work as a student, I feel bursting with energy", "I am immersed in my studies" and "My studies inspire me." The internal consistency was high, with Cronbach's α= .898. Before the data collection, the self-reported

scale was piloted as to avoid any item fill-in misunderstanding. Due to lockdown constraints, participants were recruited online, using an electronic platform. Participation was anonymous and voluntary, students being not given any extra remuneration for their participation at the study.

Preliminary analysis

The first set of analyses investigated the data suitability (Dzibuban, Shirkeu, 1974) and the theoretical structure of UWES–9S, using Principal Components Analysis (PCA) and Varimax rotation with prior Bartlett's Test of Sphericity, Kaiser-Meyer-Olking (KMO) eigenvalues and factor loadings. EFA (exploratory factory analysis) and CFA (confirmatory factor analysis) were performed. In our sample, Kaiser-Meyer-Olking (KMO) measure of sample adequacy of .88 was a good one, as suggested by Hair et al. (2006). Bartlett's Test of Sphericity, χ^2 (36) = 1099.210, was significant, at p level <0.001, therefore our sample meets the basic requirements for factor analysis (table 2).

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,889
Bartlett's Test of Sphericity	Approx. Chi-Square	1099.210
	df	36
	Sig.	,000

Table 2. Results of Sampling Adequacy Test and Bartlett's Test of Sphericity

PCA displays one component model of UWES–9S, with a single component, which is explaining 55,61%, of total variance.

For testing the goodness-of-fit in our case, several indexes were used: root mean square error of approximation (RMSEA), comparative fit index (CFI), Tucker-Lewis Index (TLI) and normed fit index (NFI). For UWES-9S model we tested one factor

model, with CFI value of .863 (acceptable), with NFI value of .844 (good fit) and with TLI of .818 (acceptable), but with the exception of RMSEA value of .141, (poor fit). In accordance with these indexes the minimum was achieved in the case of the one work engagement factor solution, with a chi-square value sensitive to sample size (χ^2 (27) = 175,039, p < .001). Although out model fit was not was not ideal, we nevertheless believe that our findings are in line with previous recommendations (Kulikowski, 2017; Willmer, Westerberg, Lindberg, 2019) related to the approvals that every study using UWES-9, either for general or student samples should test is own factor structure and use it accordingly with the sample characteristics. Our results, in terms of one factor solution of UWES-9 share a number of similarities with previous research outcomes (Hallberg, Schaufeli, 2006; Çapri, B., Gündüz, B., Akbay, S. E., 2017; Balducci et. al., 2010; Klassen et al., 2012; Vazques et. al, 2016).

Results

Our first hypothesis stated that there is a moderate degree of work engagement among students during Covid-19 online learning.

In order to test such assumption, the mean score of academic engagement as whole, was assessed. Taken as a whole, the mean score (M=3,38, SD=1,09) reported in table 3 has further strengthened our conviction that among our sample there is an average academic engagement during online courses.

	N	Minimum	Maximum	Mean	Std. Deviation
Academic Engagement	227	,00	6,00	3,3842	1,09093

Table 3. Mean and standard deviation of UWES-9S

	Minimum	Maximum	Mean	Std. Deviation
1. UWES 1	0	6	3,10	1,475
2. UWES 2	0	6	3,30	1,439
3. UWES 3	0	6	3,63	1,403
4. UWES 4	0	6	3,96	1,393
5. UWES 5	0	6	2,11	1,679
6. UWES 6	0	6	2,92	1,549
7. UWES 7	0	6	4,26	1,472
8. UWES 8	0	6	3,10	1,405
9. UWES 9	0	6	4,07	1,401

Table 4. UWES-9S items - means, standard deviations

Further analysis showed that, when judging from the mean scores per each UWES-9S item, it was highlighted that the mean scores ranged from 4,26 to 2,11, with higher scores for items 7 (dedication) and 9 (absorption), and lower ones for item 5 (vigor), and 6 (vigor). Moreover, when we tried to assess the degrees of study involvement, as suggested in the original manual (Schaufeli, Bakker, 2004), we understood that level of students' engagement during online courses was still moderate (58, 6%) (assessed between 2.89 – 4.66) to low (22,47%), (assessed between 1.78 – 2.88). Therefore, the majority of the students we surveyed reported an average degree of involvement during online courses.

		Frequency	Percent (%)
	average	133	58,6
	low	51	22,5
	high	21	9,3
	very low	16	7,0
	very high	6	2,6
	Total	227	100,0
ns			
Total			

Table 5. Level of work engagement among Romanian university students

When testing for gender variances in students' work engagement during distant learning, statistically significant differences were not found in terms of woman/girls being more involved than men/boys (M= 3,50, DS = 1.02, t = -.430, *ns*), as proved in-person learning environment (Lietaert et al., 2015). Significant difference was identified between Bachelor students been less involved (M = 3, 40, DS=1.02, t = -2,409 p<.05), than Master students (M = 3, 98, DS= .912), which substantiates previous findings revealed in UWES manual Schaufeli, Bakker, 2004.

Our research question was formulated as to disclose the hidden imprints and internalisation of the remote online learning among students. In order draw a map on the state of mind in terms of work engagements, in the following we are listing the several emotional-related responses depicted from the recorded narratives of surveyed Romanian students. We agree that students are emotionally engaged in their studies as they are mentally and cognitively present in their courses. Studying under Covid-19 pandemic impositions brought out a wide range

of mental symptoms that varies from loneliness, sadness, paramount stress, anxiety and even depression, with strong impact on students' personal, interpersonal and social daily life. In this regard, the narratives below witness the symptomatology spectrum unearth among our interviewees.

"The state of emergency and the need for isolation has brought some major changes not only to my academic life, but also to my personal one, making all the situation more difficult to bear and bringing unexpected repercussions, by breaking up some very important relationships for my psycho-intellectual balance" (Student, feminine, 22 years old).

"The faculty lost all its charm due to online hours. The interaction, the debate, the study and socialization are precious moments in the student's life, but today all our life depends on a screen and an email. Although this technology seems to have made us much stronger, the reality shows us exactly the opposite, that is, we are weak, fragile, and easily dominated psychically and emotionally" (Student, masculine, 21 years old).

"The effect of the Covid-19 pandemic has a strong impact on us. Online courses are quite boring, but not as clear as they were at university. Along the way monotony and boredom appears and things do not seem as interesting as they were taught before us" (Student, feminine, 21 years old).

"Everything is boring and sad. You have no motivation to learn or do other things. You are afraid of that virus, of failing the exams, so here comes anxiety, stress, frustration, anger, disappointment" (Student, feminine, 22 years old).

"In my opinion, the Covid-19 pandemic has affected the entire educational system in Romania. I cannot find any positive effects. There are many negative effects, the worst is that we cannot interact at online

classes like we did during the physical ones that is why the student's interest is diminishing considerably" (Student, masculine, 19 years old).
"It's good, but it's boring to stay at home; school is created for two fundamental things: education and socialization, and when socialization is eliminated, it becomes boring" (Student, masculine, 20 years old).

"From my point of view, this period dominated by COVID was a difficult one for all, at first it would not seem so hard but on the way it was dominated of anxiety, depression, you could no longer concentrate on the things you had to do […] the fact that we had the courses online helped us to keep us busy and at the same time we tried to return to normality. At present, I still feel the effects of the pandemic because the conditions of anxiety, the fear of being alone sometimes prevails, but I am sure everything will return to normal one day, and all these feelings will not influence my life" (Student, feminine, 22 years old).

The online learning environment imposed due to novel Coronavirus disrupts students' attention, concentration and even motivation for their active participation, making them feel overwhelmed by the increased workloads, which all might stands as an explanation of the average level of academic engagement and fatigue during distance learning.

"After eight hours in front of the screen, I can no longer concentrate on. Headaches sometimes occur […]. Courses and seminars are not as interesting as they were […] From the point of view it is sometimes much easier to activate our microphone and express our opinion on certain things, compared to the hours in the rooms, where we are in a larger number (I am also used to online conferences)" (Student, masculine, 18 years old).

"I think that sitting so much at some courses for more than 50 minutes would be a problem because there is a terrible backache and sometimes you really need a break. This is a negative effect on me. To stay in front of the laptop is sometimes very tiring and you get the impression that in addition to the back pain you also have the pain of your eyes, your head and your hands and everything […] I would have liked seeing much more involvement in this period, but unfortunately I see exactly the opposite" (Student, feminine, 22 years old)

"It is a very difficult and stressful period. I find it very difficult to do something for faculty such as homework or to learn, even though I consider myself an ambitious person. But during this period I simply don't have the power to concentrate" (Student, feminine, 21 years old).

"It's very tiring; I feel like my eyes hurt, I have back pains. I feel it's much harder to concentrate when I'm at home. I used to like the academic environment. It is sad that we cannot see each other physically […] Sometimes I feel I can't organize the day by myself" (Student, feminine 20 years old).

"I left behind the lessons, the tasks for the faculty, making it increasingly difficult to learn now, that I am full of concerns and fears that I will not be able to pass my exams". (Student, feminine, 21 years old).

"My attention and interest for the study have significantly decreased. I do not feel the same pressure that was put on us once by the courses and seminars we are taking part in, I do not feel the pressure that the approaching exam session should generate. I expect weaker results due to a lack of adequate training and the way in which exams will be carried out […] These online exams do not depend only on my level of training but also on the necessary logistics (I do not have a laptop/computer, just

a phone, I do not have a stable Internet connection), that will put me at a disadvantage"(Student, feminine, 22 years old).

"The interest on courses has considerably decreased. Concentration is no longer the same, the fact that I always stay at home does not help at all. And it is not the only thing that can be said. It's the most difficult period of my life so far, simply because it's not normal to spend eight hours in front of the computer. At the end of the day I am much more tired than after a day of normal classes. Interaction with colleagues is no longer the same". (Student, feminine, 19 years old).

Conclusion

Taken together, all reproduced resilience stories would seem to suggest that, in these threating epidemic times it is vital to pay more attention to the hidden person sitting for long hours behind the camera, and to listen more carefully to the voice of the person who is behind the muted microphone. Our empirical work has led us to conclude that there is a moderate to low level of work engagement among Romanian students during Covid-19 pandemic, measured with a confirmed one-factor model of UWES-9S. Our quantitative data demonstrate slightly higher levels of absorption (concentration and dependence of the undertaken activity), but less dedication (significance, enthusiasm, motivation) and less vigour (active involvement) along online courses among the investigated Romanian university students. The investigations we have undertaken into this area are still on-going and seem likely to certify our hypothesis concerning the moderate level of involvement into the online learning, which occurred *per se*, but mainly due to decreased lack of motivation, of concentration, or attention, of online fatigue, procrastination, fear, stress, anxiety, decreased interpersonal interaction, which all produce visible rupture at

emotional and affective level, with perceptible traces on students' mental health and well-being. Despite the acknowledged limitations of our study, in terms of online data collection, self-reported data and even sample size, we are confident that our results may improve the knowledge and encourage more practice-oriented approached about the new reality of the virtual learning in higher education, highlighting the importance of readjusting the appropriate security-enhancing and coping strategies and tools for a more resilient and efficient distance learning mechanisms for what has become the new normality and might be the new future in education.

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