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Cyber Socialization Engagement and Psychological Well-Being of University Students

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Abstract

Introduction. The article is devoted to the problem of psychological well-being of university students under the conditions of cyber socialization and digitalization of the educational environment. The cyber socialization engagement was considered an ambivalent phenomenon. Psychological well-being was understood in a broad sense, encompassing indicators of life and study satisfaction, participation in studies, organizational identity with university faculty, and the expression of Dark Tetrad personality traits. The purpose of the study was to determine the impact of the students' cyber socialization engagement on their psychological well-being. **Methods.** The sample included 315 students from Russian universities. The measures used were "The Cyber Socialization Engagement Questionnaire", "The Organizational and Suborganizational Identity Questionnaire", "The Satisfaction with Life Scale", "The Short Dark Tetrad Scale", and the questionnaires "Utrecht Work Engagement Scale" and "The Brief Index of Affective Job Satisfaction" modified for the students' learning context. **Results.** Destructive cyber socialization engagement was found to decrease overall satisfaction with life, learning engagement, learning satisfaction, and identification with faculty, and to increase the expression of the Dark Tetrad traits such as psychopathy and sadism. Constructive cyber socialization engagement increases life satisfaction, learning engagement, learning satisfaction, and organizational identity, and decreases the expression of Dark Tetrad traits such as psychopathy and sadism. **Discussion.** A new and specific ambivalence of the influence of engagement on cyber socialization was revealed: constructive engagement,

along with an overall positive influence, increases the expression of Machiavellianism, and destructive engagement decreases the expression of narcissism. It is shown for the first time that overall cyber socialization engagement can have a significant ambivalent effect on the psychological well-being of university students. **Conclusion.** The obtained results substantiate the necessity of predicting such influence within the framework of work on ensuring psychological safety of the educational environment, creating conditions for successful personal, social, and professional development of university students in the conditions of intensive digitalization of education.

Keywords

Cyber socialization engagement, constructive engagement, destructive engagement, university students, psychological well-being, life satisfaction, learning satisfaction, learning engagement, organizational identity, Dark Tetrad of personality

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Introduction

University students are a part of young people, interesting in many ways. First, they form the dominant part of the future intellectual and spiritual elite of society, which determines the strategic directions and achievements of its subsequent development. Secondly, despite their young age, they are already in a certain sense an established, self-actualized part of the youth, who have achieved a high enough social status and therefore deserve a parity dialogue and interaction with representatives of older generations. Third, already at the stage of studying at university, these young people are highly socially active and often demonstrate high achievements in various fields of activity: science, technology, sports, technological among social innovations, and others. In addition, due to their normative inclusion in educational processes and educational space, university students are a fairly accessible category of respondents (compared, for example, with many categories of working professionals) to conduct heterogeneous scientific research. This list can be continued, but the reasons why heterogeneous psychological research carried out on samples of university students is very widely represented, including with regard to heterogeneous aspects of well-being: physical, mental and social health, success of personal and professional development, psychological safety of the individual, identification of risk factors for deviant behavior, etc., become clear from the arguments already given.

We will limit ourselves to the direction of such studies related to psychological well-being, which we will understand in a broad sense, encompassing heterogeneous psychological manifestations of success (normativity, etc.) of mental, personal, and social development. Note that in the literature there is a point of view according to which the concepts of subjective and psychological well-being are distinguished: for example, Anglim et al. (2020) in a meta-analysis discuss in detail the differences between these concepts and provide many examples of studies of subjective and psychological well-being, performed, among others, on samples of university students. From our point of view, subjective well-being is a special case of psychological well-being, and row-by-row opposition violates the existing generic species relations between these concepts.

Thus, we will consider the psychological well-being of university students in a broad sense, including, among other things, indicators of traditionally distinguished subjective well-being (such as subjective life satisfaction). Many other authors use a similar broad understanding (see, e.g., Denisova et al., 2022). At the same time, we specify the subject of the study, considering the modern conditions of education, conditioned by the processes of informatization and associated, on the one hand, with the formation of a digital educational environment, and on the other hand, with a qualitative change in the socialization of younger generations, manifested in the expansion of cyber socialization.

In theoretical and methodological terms, cyber socialization is a construct with the help of which researchers try to explain not so much technical-technological but sociopsychological processes of information society formation. The topic of cyber socialization has become increasingly popular among researchers in recent years, including in relation to university students (Shitova & Maslakov, 2020). At the same time, along with the concept of cyber socialization, many other concepts are used for similar purposes, such as *digital socialization* (Podbolotova et al., 2021), *virtual socialization* (O'Connell et al., 2022, p. 159), *web-based socialization* (Haase et al., 2021), *Internet socialization* (Honnekeri et al., 2017), *computer-mediated socialization* (Asghar et al., 2021). Some authors believe that such concepts are semantic equivalents: for example, it is noted that "Internet socialization", "cyber socialization", and "digital socialization" are synonyms (Podbolotova et al., 2021). However, despite their proximity, each of these concepts has its own specificity. In other words, the disadvantage of such equivalents is their excessive specificity. Thus, *computer-mediated socialization* emphasizes the role of computers, but misses the role of gadgets (e.g., smartphones); *virtual socialization* rightly captures the virtual nature of such interactions, but misses their inextricable intertwining with the real world (e.g., paying for transportation by credit card, a student gets access to a nonvirtual service); *digital* socialization ignores the fact that for socialization in cyberspace, the technological nature of information signals (digital or analog) does not really matter; types such as *web-based socialization*, *social media socialization*, etc. limit the scope of cyber socialization to specific types of cyber technologies; *online* socialization ignores the fact that some cyber socialization processes can take place offline, etc. The term "cyber socialization" is devoid of such shortcomings: due to its obvious conventionality

(provided by the semantic prefix «cyber»), it is the most general, covering various aspects of socialization in cyberspace. At the same time, the prefix "cyber" is used in the formation of other concepts that are a wide range of virtually universally recognized, such as cybersecurity, cyberspace, cybertechnology, and others.

Thus, we will consider cyber socialization as the broadest generic concept that includes many more specific manifestations.

With this in mind, we note, first of all, that there are a large number of theoretical works that develop certain aspects of cyber socialization (e.g., Pleshakov, 2023; Soldatova & Voyskunsky, 2021). Taking into account such studies, we will rely on our own concept of cyber socialization, which substantiated the construct of "cyber socialization engagement" that has received operationalization (Lenkov et al., 2019) and empirical validation in a number of previous studies (Lenkov & Rubtsova, 2019, 2022; Rubtsova & Lenkov, 2020).

Similar to the general concept of cyber socialization, cyber socialization engagement also appears in the academic literature under many different names. With this in mind, with respect to empirical studies of cyber socialization engagement, it can be noted that many such works use primary measurement tools with untested psychometric properties such as questionnaires, single questions, etc. Other works that operate with the concept of cyber socialization (or do not operate, but in essence consider this very phenomenon), in their empirical part actually go to individual aspects, private manifestations, local indicators of cyber socialization, such as the time of Internet use, frequency of social network use, purposes and forms of ICT use, etc.

There is also a large number of works whose authors do not claim a global context for the study of cyber socialization of university students but clearly identify a specific facet of it that is under study. Many works focus on students' use of social networks and the impact of such use on academic performance and engagement in learning and related interactions (Ashraf et al., 2021; Gulzar et al., 2021; Masrom et al., 2021; Shi et al., 2020). Some such studies do not look at social networks in general, but at specific varieties of networks or communication technologies (messengers, etc.). For example, Hoi (2021) provides a review of studies on the impact of students' use of Facebook on their academic performance and engagement; Nyembe and Howard (2021) looked at the impact of WhatsApp use on students' academic performance and social interaction; Dzulkarnain et al. (2021) showed that participation in a specific online video project improves learning outcomes and is positively correlated with student engagement in a university STEM course; etc.

However, the results of such studies are often contradictory. For example, Nyembe and Howard (2021) empirically found that using WhatsApp messenger increased students' academic performance and social interaction, while Alkhalaf et al. (2018) found no such effect on academic performance; moreover, time spent using WhatsApp was found to be directly proportional to addiction symptoms. Or, for example, on the one hand, a number of studies have found positive effects of social networks: for example, Rasheed et al. (2020) found that knowledge sharing meaningfully mediated the effect of social networks

use on student engagement in academic contexts. On the other hand, Koranteng et al. (2019) reported that the use of social networking sites did not predict knowledge sharing or student engagement in academic contexts. Liebherr et al. (2020) in their review showed that there is conflicting evidence on the impact of smartphone use on academic performance and cognitive functions, particularly of university students. As noted by Whelan et al. (2020), several studies show that university students are more prone to problematic social media use than others. There are also works that show the negative impact of cyberbullying and cyberstalking on students, leading to serious psychological problems (Harding et al., 2019; Metin-Orta & Demirtepe-Saygl, 2023).

Much work has also focused on the impact of the COVID-19 pandemic on university students: in particular, on their social and psychological well-being, as well as on changing characteristics of cyber socialization engagement, such as the transition of university learning processes to an online format (Hudimova et al., 2021). For example, it has been reported that university students find both positive aspects and negative aspects in the transition to online learning (Mishra et al., 2020); with such a transition leading university students to a "*lack of socialization*" consisting of a reduction in live (face-to-face) interactions, student participation in study groups outside the classroom, etc. (Easa & Bazzi, 2021). (Easa & Bazzi, 2021).

Thus, despite extensive research into the influence of certain aspects of cyber socialization (the use of specific cyber technologies, specific forms of behavior in cyberspace, etc.) on the psychological well-being of university students, the influence of general (nonspecific) cyber socialization engagement on such well-being has not been studied sufficiently, including its ambivalent nature, manifested in the presence of two types of such engagement, constructive and destructive.

The purpose of the study was to identify the possible impact of Cyber socialization engagement on the psychological and social well-being of university students. This objective involved answering the following research questions:

Does Cyber socialization engagement affect university students' psychological well-being as examined through the constructs of life satisfaction and the Dark Tetrad of personality?

Does Cyber socialization engagement affect university students' social well-being as examined through the constructs of learning engagement, learning satisfaction, and organizational identity?

Is there a joint influence of constructive and destructive factors of Cyber socialization engagement on the psychological and social well-being of university students?

Methods

Concepts that develop and operationalize the concepts of cyber socialization engagement, life satisfaction, the Dark Tetrad of personality, learning engagement, learning satisfaction, and organizational identity were used as methodological foundations for the study.

Cyber socialization engagement was understood in accordance with the author's concept of cyber socialization, within which the psychological structure of cyber socialization engagement includes two subsystems, constructive engagement and destructive engagement, each of which contains three components related, respectively, to constructive or destructive motivation for cyber socialization, personal position in relation to cyber socialization, and competence in the field of cyber socialization. The "The cyber socialization engagement questionnaire" was used for measurement, containing scales of constructive and destructive Cyber socialization engagement, respectively (Lenkov et al., 2019).

Life satisfaction was considered according to the concept of Diener et al. (1985). In the context of the study, we understood life satisfaction as general, nonspecific life satisfaction and considered it, on the one hand, as one of the components of psychological well-being and, on the other hand, as a certain, rather autonomous predictor of the latter. The 5-item "The Satisfaction with Life Scale (SWLS)" in the Russian-language adaptation was used for measurement (Elshansky et al., 2015).

The Dark Tetrad of personality was considered according to the concept of Paulhus et al. (2021), according to which this tetrad includes such personality traits as Machiavellianism, narcissism, psychopathy (not clinical) and sadism (domestic, everyday). The 28-item questionnaire "The Short Dark Tetrad Scale [SD4]" in its Russian-language adaptation (Kornienko et al., 2022) was used for measurement.

Engagement in learning within the framework of the study was considered by analogy with the concept of work engagement by Schaufeli and Bakker (2004). The nine-item "Utrecht Work Engagement Scale [UWES-9]", modified by the authors of the article, was used for measurement in the Russian version presented by the authors of the scale (Schaufeli & Bakker, 2004). The modification consisted of replacing the term "work" with the term "learning" in all questions (e.g., "My learning inspire me").

The study examined *job satisfaction* in a similar way to Thompson and Phua's (2012) concept of affective job satisfaction. The authors' modified 7-item questionnaire "The Brief Index of Affective Job Satisfaction", including 4 meaningful and 3 masking items, in the Russian-language adaptation (Lovakov, 2018, p. 123) was used for measurement. The modification consisted in replacing the term "job" with the term "learning" in all questions (e.g., "I am completely satisfied with my learning").

Organizational identity was considered and measured according to the concept operationalized in the 6-item "Organizational and Sub-Organizational Identity Questionnaire" (Sidorenkov et al., 2019), which allows it to be flexibly adjusted for application to different types of organizations. Accordingly, within the framework of the research, organizational identity was understood as the result of the student's identification processes with the university faculty where he or she is studying.

In all questionnaires used, responses were rated on a 5-item Likert scale (from 1 "*Strongly disagree»* to 5 "*Strongly Agree"*).

The study sample consisted of 315 Russian university students aged 17 to 35 years (M = 21.70, SD = 3.130). In addition to age, the controlled factors were: sex, type of educational organization, level, and subject area of education received. Accordingly, the sample included: 218 females and 97 males; 172 bachelor students and 143 master students; 107 technical students and 208 humanities students, 212 students of state universities, and 103 students of nonstate universities.

Data analysis was performed using the SPSS package. Such statistical methods as analysis of variance (one-way and two-way ANOVA), hypothesis testing methods (Mann-Whitney, Games-Howell tests, etc.), reliability of scales (Cronbach's alpha) (IBM, 2022), including methods for determining the effect size (eta-square and partial eta-square) within ANOVA and nonparametric tests (Fritz et al., 2012) were used.

Results

The scales used in the study sample showed high or satisfactory reliability, with the exception of the Machiavellianism scale, which had a reliability of only about 0.5 (Table 1). Nevertheless, for completeness of coverage of the Dark Tetrad traits, we used this scale in the further study.

The descriptive statistics (Table 1) shows that a number of scales are characterized by significant deviations from the normal distribution. For this reason, we used the nonparametric Mann-Whitney test for generality in pairwise comparisons of the groups, applying the eta-square method specific to it to determine the effect size.

Table 1

Descriptive statistics and reliability of scales (N = 315)

Scales	Indicators of descriptive statistics				NOI	Alpha
	M	SD	Skewness	Kurtosis		
Satisfaction with life	16,62	4,285	-0,290	-0,456	5	0,818
Machiavellianism	21,85	3,797	-0,271	0,432	7	0,463
Narcissism	20,72	4,905	-0,123	-0,292	7	0,697
Psychopathy	16,37	5,582	0,484	-0,073	7	0,791
Sadism	15,02	5,297	0,632	-0,286	7	0,766

Scales	Indicators of descriptive statistics				NOI	Alpha
	M	SD	Skewness	Kurtosis		
Learning engagement	26,75	7,065	0,055	-0,505	9	0,915
Satisfaction with learning	12,53	3,375	-0,347	-0,077	4	0,854
Organizational identity	20,01	4,641	-0,312	0,381	6	0,828
Constructive Cyber socialization engagement	55,18	10,044	-0,271	-0,318	21	0,799
Destructive Cyber socialization engagement	4,89	3,454	0,928	1,100	6	0,705

Source: *Compiled by the authors. Note: NOI is the number of points, and Alpha is Cronbach's alpha. The standard error is equal to: 0.137 for skewness and 0.274 for kurtosis.*

The following statistically significant effects were identified (see Table 2), presented in descending order of effect size:

- for the factor of sex: men, compared to women, have a higher expression of sadism, constructive Cyber socialization engagement and Machiavellianism, but lower life satisfaction at the trend level ($p < 0.1$);
- for the factor of education level: master's students, compared to undergraduate students, have higher expression of Machiavellianism, but lower expression of narcissism, psychopathy, learning engagement, satisfaction with learning and organizational identity;
- for the subject area factor: technical students, compared to humanities students, have a lower expression of narcissism, psychopathy, learning engagement, and constructive cyber socialization, but a higher expression of Machiavellianism at the trend level ($p < 0.1$);
- for the factor of type of educational organization: students of state universities, compared to students of nonstate universities, have higher expression of

Machiavellianism, but a lower expression of narcissism, learning engagement, satisfaction with learning, organizational identity; as well as psychopathy at the level of tendencies (p <0.1).

Table 2

Comparisons between groups of mean values

Scales	Mean values for groups		Mann-Whitney test		
	Group 1	Group 2	Z	p	η^2
Factor: sex. Groups: 1 - female (n = 218), 2 - male (n = 97)					
Satisfaction with life	16,92	15,95	-1,934	0,053	0,012
Machiavellianism	21,48	22,69	-2,512	0,012	0,020
Sadism	14,21	16,85	-3,979	0,000	0,050
Constructive engagement	54,18	57,42	-2,853	0,004	0,026
Factor: level of education. Groups: 1 - bachelor's degree (n = 172), 2 - Master's degree (n = 143)					
Machiavellianism	21,26	22,56	-2,980	0,003	0,028
Narcissism	21,36	19,94	-2,341	0,019	0,017
Psychopathy	17,33	15,87	-2,165	0,030	0,015
Learning engagement	27,55	25,79	-2,257	0,024	0,016
Satisfaction with learning	12,81	12,20	-2,212	0,027	0,016
Organizational identity	20,46	19,46	-1,986	0,047	0,013
Factor: subject area. Groups: 1 - technical (n = 107), 2 - humanitarian (n = 208)					
Machiavellianism	22,47	21,53	-1,710	0,087	0,009
Narcissism	19,37	21,41	-3,531	0,000	0,040
Psychopathy	15,44	17,30	-2,698	0,007	0,023
Learning engagement	25,59	27,35	-2,324	0,020	0,017
Constructive engagement	56,52	54,49	-2,008	0,045	0,013

Scales	Mean values for groups		Mann-Whitney test		
	Group 1	Group 2	Z	p	η^2
Factor: type of university. Groups: 1 - state (n = 212), 2 - non-state (n = 103)					
Narcissism	19,37	21,41	-4,177	0,000	0,055
Psychopathy	15,44	17,30	-1,698	0,090	0,009
Learning engagement	25,59	27,35	-2,968	0,003	0,028
Satisfaction with learning	12,14	13,44	-3,437	0,001	0,038
Organizational identity	19,78	20,51	-3,136	0,002	0,031

Source: *Compiled by the authors. Note: Only results for which the significance of the differences is p < 0.1 are shown. Values of p <0.05 are shown in bold.*

The factor of age statistically significantly increases Machiavellianism, engagement in learning, satisfaction with learning and organizational identity (Table 3).

Table 3

One-factor analysis of variance (ANOVA) for the age factor

Dependent variable	ANOVA			Mean values for groups		Post hoc test	
	F	p	η^2	Group	M	groups	p
Satisfaction with life	0,778	0,460	0,007				
Machiavellianism	5,249	0,006	0,033	1	20,77	1-2	0,059
				2	21,96	1-3	0,007
				3	22,68	2-3	0,360
Narcissism	1,475	0,230	0,009				
Psychopathy	0,157	0,855	0,001				
Sadism	0,845	0,431	0,005				
Learning engagement	4,335	0,014	0,027	1	24,90	1-2	0,092
				2	26,96	1-3	0,011
				3	28,14	2-3	0,427

Dependent variable	ANOVA			Mean values for groups		Post hoc test	
	F	p	η^2	Group	M	groups	p
Satisfaction with learning	4,756	0,009	0,030	1	11,91	1-2	0,623
				2	12,36	1-3	0,010
				3	13,48	2-3	0,030
Organizational identity	10,750	0,000	0,064	1	17,99	4,8	0,000
				2	20,45	5,5	0,000
				3	21,08	6,2	0,608

Source: *Compiled by the authors. Note: F is Fisher's statistic, η^2 is eta-squared. Age groups: 1 - younger than 21 years (n = 63), 2 - 21 to 23 years (n = 191), 3 - older than 23 years (n = 61). The results of multiple comparisons using the Games-Howell test are shown only for cases where ANOVA revealed a significant effect (p <0.05). Values of p <0.05 are shown in bold.*

Destructive Cyber socialization engagement decreased life satisfaction, narcissism, learning engagement, learning satisfaction, and organizational identity, but increased the expression of psychopathy and sadism (Table 4).

Table 4

One-factor analysis of variance (ANOVA) for the factor of destructive Cyber socialization engagement

Variable	ANOVA			Mean values for groups		Post hoc test	
	F	p	η^2	Group	M	groups	p
Satisfaction with life	10,073	0,000	0,061	1	17,92	1-2	0,076
				2	16,72	1-3	0,000
				3	15,10	2-3	0,018
Machiavellianism	0,678	0,508	0,004				
Narcissism	3,898	0,021	0,024	1	21,30	1-2	0,949
				2	21,11	1-3	0,035
				3	19,48	2-3	0,049
Psychopathy	18,200	0,000	0,104	1	14,38	1-2	0,004
				2	16,56	1-3	0,000
				3	19,21	2-3	0,002

Variable	ANOVA			Mean values for groups		Post hoc test	
	F	p	η^2	Group	M	groups	p
Sadism	18,934	0,000	0,108	1	13,25	1-2	0,168
				2	14,48	1-3	0,000
				3	17,73	2-3	0,000
Learning engagement	11,762	0,000	0,070	1	28,81	1-2	0,211
				2	27,19	1-3	0,000
				3	23,91	2-3	0,001
Satisfaction with learning	5,313	0,005	0,033	1	13,40	1-2	0,093
				2	12,44	1-3	0,004
				3	11,78	2-3	0,305
Organizational identity	5,742	0,004	0,036	1	21,17	4,8	0,129
				2	19,99	5,5	0,004
				3	18,83	6,2	0,176

Source: *Compiled by the authors. Note: F is Fisher's statistic, η^2 is eta-squared. Groups by level of destructive engagement in cyber socializatio: 1 - low (n = 89), 2 - medium (n = 140), 3 - high (n = 86). The results of multiple comparisons using the Games-Howell test are shown only for cases where ANOVA revealed a significant effect (p <0.05). Values of p <0.05 are shown in bold.*

In turn, constructive Cyber socialization engagement increases Machiavellianism, learning engagement, learning satisfaction, and organizational identity (Table 5).

Table 5

One-factor analysis of variance (ANOVA) for the factor of constructive Cyber socialization engagement

Variable	ANOVA			Mean values for groups		Post hoc test	
	F	p	η^2	Group	M	groups	p
Satisfaction with life	1,029	0,359	0,007				
Machiavellianism	5,249	0,006	0,033	1	20,77	1-2	0,059
				2	21,96	1-3	0,007
				3	22,68	2-3	0,360
Narcissism	1,475	0,230	0,009				
Psychopathy	0,157	0,855	0,001				

Variable	ANOVA			Mean values for groups		Post hoc test	
	F	p	η^2	Group	M	groups	p
Sadism	0,845	0,431	0,005				
Learning engagement	4,335	0,014	0,027	1	24,90	1-2	0,092
				2	26,96	1-3	0,011
				3	28,14	2-3	0,427
Satisfaction with learning	4,756	0,009	0,030	1	11,91	1-2	0,623
				2	12,36	1-3	0,010
				3	13,48	2-3	0,030
Organizational identity	10,750	0,000	0,064	1	17,99	4,8	0,000
				2	20,45	5,5	0,000
				3	21,08	6,2	0,608

Source: *Compiled by the authors. Notes: F is Fisher's statistic, η^2 is eta-squared. Groups by level of constructive Cyber socialization engagement: 1 - low (n = 77), 2 - medium (n = 159), 3 - high (n = 79). The results of multiple comparisons using the Games-Howell test are shown only for cases where ANOVA revealed a significant effect (p <0.05). Values of p <0.05 are shown in bold.*

As shown by two-factor analysis of variance (two-way ANOVA), the interaction between the factors of constructive and destructive Cyber socialization engagement is not significant for all the dependent variables considered: life satisfaction, Dark Tetrad traits, engagement in learning, learning satisfaction, and organizational identity (p from 0.969 to 0.185, η_p^2 ranges from 0.002 to 0.020).

Discussion

The revealed absence of significant interfactor interaction between the indicators of constructive and destructive Cyber socialization engagement confirms the validity of our approach to considering these constructs as relatively autonomous, not additively summarized into an indicator of some general, total Cyber socialization engagement.

Some of our results are qualitatively consistent with the results of Rogowska et al. (2021) obtained in a cross-cultural study on a sample of 285 Russian university students: here, as in our study, life satisfaction was higher for women than for men, and the level of education (bachelor's or master's degree) was insignificant.

The ambivalence of the impact of cyber socialization on university students was confirmed by Shitova & Maslakov (2020): on the one hand, many students are interested in educational information in cyberspace and actively use online resources for learning; on the other hand, some students have symptoms of information stress.

The negative impact of general destructive Cyber socialization engagement on students' psychological well-being scores found in our study is qualitatively consistent with the results of many previous studies that have found a similar impact of individual, private manifestations of such engagement, such as cyberaddictions, engagement in cyberbullying, social media overload, problematic Internet use, etc. (Arpaci et al., 2020; Su et al., 2020; Tahoon, 2020; Tahoon, 2020). (Arpaci et al., 2020; Su et al., 2020; Tahoon, 2020). On the other hand, the alternative positive impact of constructive engagement is also qualitatively consistent with previous studies, where similar effects were found for private manifestations of such engagement, such as participation in specially designed forms of online learning, constructive online interactions between students in sharing knowledge and solving learning tasks, etc. (Arpaci et al., 2020; Su et al., 2020; Tahoon, 2020). (Hoi, 2021; Nyembe & Howard, 2021).

However, empirical evidence of the ambivalent effect of overall cyber socialization engagement on university students' psychological well-being is apparently obtained for the first time in this study.

An interesting result is also the revealed "ambivalence within ambivalence": constructive engagement with its generally positive influence increases Machiavellianism, and destructive engagement with its generally negative influence decreases, however, the expression of narcissism. However, a detailed discussion of these results requires a deep dive into the problems of the Dark Tetrad traits' identification and is therefore beyond the scope of this article.

Conclusion

The results of the conducted study clarify the role of cyber socialization engagement in shaping the psychological well-being of student youth.

It is found that the impact of overall Cyber socialization engagement is generally ambivalent:

- constructive engagement has an overall positive effect, increasing measures of psychological well-being such as engagement in learning, satisfaction with learning, and organizational identity, although it increases the expression of the Dark Tetrad trait of Machiavellianism;
- destructive engagement has an overall negative impact, decreasing life satisfaction, learning engagement and learning satisfaction, organizational identity, and increasing the expression of Dark Tetrad traits such as psychopathy and sadism, although decreasing the expression of narcissism.

At the same time, the effects of constructive and destructive engagement were statistically independent, which confirms the appropriateness of the theoretical model of Cyber socialization engagement used.

The practical significance of the study lies in the fact that its results make it possible to outline expedient work to ensure psychological safety of the educational environment and psychological support of university students, aimed at ensuring their psychological well-being by adjusting the ratio of constructive and destructive Cyber socialization engagement.

Prospects for further research within the framework of the stated problem are connected, first of all, with the expansion of the range of studied indicators of psychological well-being, as well as with clarifying studies in connection with such ambiguous results as an increase in Machiavellianism under the influence of constructive Cyber socialization engagement and a decrease in narcissism under the influence of destructive Cyber socialization engagement.

References

Alkhalaf, A. M., Tekian A., & Park Y. S. (2018). The impact of WhatsApp use on academic achievement among Saudi medical students. *Medical Teacher*, *40*(1), 10–14. https://doi.org/10.1080/0142159X.2018.1464652

Anglim, J., Horwood, S., Smillie, L. D., Marrero, R. J., & Wood, J. K. (2020). Predicting psychological and subjective well-being from personality: A meta-analysis. *Psychological Bulletin*, *146*(4), 279–323. https://doi.org/10.1037/bul0000226

Arpaci, I., Abdeljawad, T., Baloglu, M., Kesici, S., & Mahariq, I. (2020). Mediating effect of internet addiction on the relationship between individualism and cyberbullying: a cross-sectional questionnaire study. *Journal of Medical Internet Research*, *22*(5), Article e16210. https://doi.org/10.2196/16210

Asghar, M. Z., Iqbal, A., Seitamaa-Hakkarainen, P., & Barbera, E. (2021). Breaching learners' social distancing through social media during the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, *18*(21), Article 11012. https://doi.org/10.3390/ijerph182111012

Ashraf, M. A., Khan, M., Chohan, S., Khan, M., Rafique, W., Farid, M. F., & Khan A. U. (2021). Social media improves students' academic performance: Exploring the role of social media adoption in the open learning environment among international medical students in China. *Healthcare*, *9*(10), Article 1272. https://doi.org/10.3390/healthcare9101272

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13

Dzulkarnain, I., Aziz, N. A. A., Suswandari, S., & Khuluqo, I. (2021). Student engagement in university STEM course through digital video project using SAMR model. *Proceedings of the 1st Annual International Conference on Natural and Social Science Education*, (547), 49–57. https://doi.org/10.2991/assehr.k.210430.008

Denisova, E. G., Ermakov, P. N., Abakumova, I. V., Sylka, N. V. (2022). Emotional-personal and metacognitive predictors of students' psychological well-being in modern conditions. *Psychological Science and Education*, *27*(5), 85–96. (In Russ.) https://doi.org/10.17759/pse.2022270507 (In Russ.)

Elshansky, S. P., Anufriev, A. F., Kamaletdinova, Z. F., Saparin, O. E., Semyonov, D. V. (2015). Psychometric indicators of the Russian-language version of the Life Satisfaction Scale. *Modern research on social problems* [from 2019 *Russian Journal of Education and Psychology*], (9(53)), 444–458. (In Russ.) https://doi.org/10.12731/2218-7405-2015-9-33

Easa, N. F. & Bazzi, A. M. (2021). COVID-19 and lack of socialization: does service innovation become an imperative for universities? *International Journal of Disruptive Innovation in Government*, *1*(2), 82–103. https://doi.org/10.1108/IJDIG-11-2020-0006

Fritz, C. O., Morris, P. E., & Richler, J. J. (2012). Effect size estimates: Current use, calculations, and interpretation. *The Journal of Experimental Psychology: General*, *141*(1), 2–18. https://doi.org/10.1037/a0024338

Gulzar, M. A., Ahmad, M., Hassan, M., & Rasheed, M. I. (2021). How social media use is related to student engagement and creativity: investigating through the lens of intrinsic motivation. *Behaviour & Information Technology*, *41*(11), 2283–2293. https://doi.org/10.1080/0144929X.2021.1917660

Haase, K. R., Cosco, T., Kervin, L., Riadi, I., & O'Connell, M. E. (2021). Older adults' experiences with using technology for socialization during the COVID-19 pandemic: A cross-sectional survey study. *JMIR Aging*, *4*(2), Article e28010. https://doi.org/10.2196/28010

Harding, T., Lopez, V., & Klainin-Yobas, P. (2019). Predictors of psychological well-being among higher education students. *Psychology*, *10*(4), 578–594. https://doi.org/10.4236/psych.2019.104037

Hoi, V. N. (2021). Augmenting student engagement through the use of social media: the role of knowledge sharing behavior and knowledge sharing self-efficacy. *Interactive Learning Environment*, *31*(7), 4021–4033. https://doi.org/10.1080/10494820.2021.1948871

Honnekeri, B., Goel, A., Umate, M., Shah, N., & Sousa, A. (2017). Social anxiety and Internet socialization in Indian undergraduate students: An exploratory study. *Asian Journal of Psychiatry*, *27*, 115–120. https://doi.org/10.1016/j.ajp.2017.02.021

Hudimova, A., Popovych, I., Baidyk, V., Buriak, O., & Kechyk, O. (2021). The impact of social media on young web users' psychological well-being during the COVID-19 pandemic progression. *Revista Amazonia Investiga*, *10*(39), 50–61. https://doi.org/10.34069/AI/2021.39.03.5

IBM (2022). *IBM SPSS Statistics Algorithms*. IBM Corporation.

Koranteng, F. N., Wiafe, I., & Kuada, E. (2019). An empirical study of the relationship between social networking sites and students' engagement in higher education. *Journal of Educational Computing Research*, *57*(5), 1131–1159. https://doi.org/10.1177/0735633118787528

Kornienko, D. S., Vyazovkina, V. K., Gornostaev, I. S. (2022). Adaptation and psychometric validation of the Dark Tetrad Short Questionnaire technique. *Psychological Journal*, *43*(5), 87–98. (In Russ.) https://doi.org/10.31857/S020595920022787-1

Lenkov, S. L., Rubtsova, N. E., Efremova, G. I. (2019). The cyber socialization engagement questionnaire. *Yaroslavl Pedagogical Bulletin*, (6(111)), 109–119. (In Russ.) https://doi.org/10.24411/1813-145X-2019-1-0567

Lovakov, A. V. (2018). *The relationship between organizational identification and employee well-being: the role of workaholism as a mediator*: diss. ... candidate of sciences. National Research University Higher School of Economics (PhD HSE). (In Russ.) URL: https://www.hse.ru/data/xf/842/014/1153/Lovakov_A_dissertation.pdf

Lenkov, S. L., & Rubtsova, N. E. (2019). Cyber socialization of Russian youth: Risks of professional self-determination. *Advances in Social Science, Education and Humanities Research*, (321), 116–122. https://doi.org/10.2991/ispcpep-19.2019.28

Lenkov, S., & Rubtsova, N. (2022). Social environment as a predictor of destructive behavior in cyberspace. *Lecture Notes in Networks and Systems*, (247), 711–724. https://doi.org/10.1007/978-3-030-80946-1_65

Liebherr, M., Schubert, P., Antons, S., Montag, C., & Brand, M. (2020). Smartphones and attention, curse or blessing? A review on the effects of smartphone usage on attention, inhibition, and working memory. *Computers in Human Behavior Reports, 1*, Article 100005. https://doi.org/10.1016/j.chbr.2020.100005

Masrom, M. B., Busalim, A. H., Abuhassna, H., & Mahmood, N. H. (2021). Understanding students' behavior in online social networks: a systematic literature review. *Journal of Educational Technology in Higher Education*, *18*, Article 6. https://doi.org/10.1186/s41239-021-00240-7

Metin-Orta, I., & Demirtepe-Saygılı, D. (2023). Cyberloafing behaviors among university students: Their relationships with positive and negative affect. *Current Psychology, 42*(13), 11101–11114. https://doi.org/10.1007/s12144-021-02374-3

Mishra, L., Gupta, T., & Shree, A. (2020). Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *International Journal of Educational Research Open*, *1*, Article 100012. https://doi.org/10.1016/j.ijedro.2020.100012

Nyembe, B. Z. M., & Howard, G. R. (2021). WhatsApp, an educational computer system? In J. Bentahar, I. Awan, M. Younas (Eds) *Mobile Web and Intelligent Information Systems (MobiWIS 2021). Lecture Notes in Computer Science*, (12814), 135–148. https://doi.org/10.1007/978-3-030-83164-6_11

O'Connell, M. E., Haase, K. R., Grewal, K. S., Panyavin, I., Kortzman, A., Flath, M. E., Cammer, A., Cosco, T. D., & Peacock, S. (2022). Overcoming barriers for older adults to maintain virtual community and social connections during the COVID-19 pandemic. *Clinical Gerontologist*, *45*(1), 159–171. https://doi.org/10.1080/07317115.2021.1943589

Paulhus, D. L., Buckels, E. E., Trapnell, P. D., & Jones, D. N. (2021). Screening for dark personalities: The Short Dark Tetrad (SD4). *European Journal of Psychological Assessment*, *37*(3), 208–222. https://doi.org/10.1027/1015-5759/a000602

Pleshakov, V. A. On the cyber socialization of man in an unstable world (2023). *Man and society in an unstable world*: Materials of the international scientific-practical conference, Omsk, March 01, 2022. Siberian Law University. (In Russ.)

Podbolotova, M., Dmitrieva, V., Reznikova, R., & Grishaeva, Y. (2021). Digital socialization of students by means of educational media. *SHS Web Conferences*, *98*, Article 05015. https://doi.org/10.1051/shsconf/20219805015

Rasheed, M. I., Malik, M. J., Pitafi, A. H., Iqbal, J., Anser, M. K., & Abbas, M. (2020). Usage of social media, student engagement, and creativity: The role of knowledge sharing behavior and cyberbullying. *Computer Education*, *159*(3), Article 104002. https://doi.org/10.1016/j.compedu.2020.104002

Rogowska, A. M., Ochnik, D., Kuśnierz, C., Jakubiak, M., Schütz, A., Held, M. J., Arzenšek, A., Benatov, J., Berger, R., Korchagina, E. V., Pavlova, I., Blažková, I., Konečná, Z., Aslan, I., Çınar, O., & Cuero-Acosta, Y. A. (2021). Satisfaction with life among university students from nine countries: a cross-national study during the first wave of the COVID-19 pandemic. *BMC Public Health*, *21*(1), Article 2262. https://doi.org/10.1186/s12889-021-12288-1

Rubtsova, N. E., & Lenkov, S. L. (2020). The impact of digital socialization on psychological well-being. *Psychology in Education*, *2*(2), 143–149. https://doi.org/10.33910/2686-9527-2020-2-2-2-143-149

Schaufeli, W. B., & Bakker, A. B. (2004). *Utrecht Work Engagement Scale (UWES): Preliminary Manual, Version 1.1, Dec. 2004*. Unpublished manuscript. Utrecht: Occupational Health Psychology Unit of Utrecht University. URL: https://www.wilmarschaufeli.nl/tests/#engagement

Shi, C., Yu, L., Wang, N., Cheng, B., & Cao, X. (2020). Effects of social media overload on academic performance: a stressor-strain-outcome perspective. *Asian Journal of Communication*, *30*(2), 179–197. https://doi.org/10.1080/01292986.2020.1748073

Sidorenkov, A. V., Shipitko, O. Y., Shtilnikov, D. E., Shtroo, V. A. (2019). Development of a toolkit for studying employee identification in an organization. *Organizational Psychology*, *9*(3), 74–102. (In Russ.) URL: http://orgpsyjournal.hse.ru

Soldatova, G. U., Voiskunsky, A. E. (2021). Social-cognitive concept of digital socialization: new ecosystem and social evolution of psyche. *Psychology. Journal of the Higher School of Economics*, *18*(3), 431–450. (In Russ.) https://doi.org/10.17323/1813-8918-2021-3-431-450

Shitova, N. V., & Maslakov, S. I. (2020). Investigating the psychological aspects of cyber socialization among modern students. *Propósitos y Representaciones*, *8*(2), Article e512. https://doi.org/10.20511/pyr2020.v8n2.512

Su, W., Han, X., Yu, H., Wu, Y., & Potenza, M. (2020). Do men become addicted to internet gaming and women to social media? A meta-analysis examining gender-related differences in specific internet addiction. *Computers in Human Behavior*, *113*, Article 106480. https://doi.org/10.1016/jxhb. 2020.106480

Tahoon, R. (2020). Mediating effects of dark personality triad and real and mediated social interaction on social media addiction and academic performance in university students. *Clinical and experimental Phycology*, *6*(4), 1–10.

Thompson, E. R., & Phua, F. T. T. (2012). A Brief Index of Affective Job Satisfaction. *Group Organ Manage*, *37*(3), 275–307. https://doi.org/10.1177/1059601111434201

Whelan, E., Islam, A. K. M. N., & Brooks, S. (2020). Applying the SOBC paradigm to explain how social media overload affects academic performance. *Computers & Education 143*, Article 103692. https://doi.org/10.1016/j.compedu.2019.103692

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Igor V. Gaidamashko – ideological scientific guidance, formulation of the problem of psychological well-being of university students in the conditions of cyber socialization, theoretical generalization of the results.

Sergey L. Lenkov – disclosure of the idea of the article using the author's methodology "Cyber socialization engagement", meta-analysis of scientific domestic and foreign articles similar to the topic of the article, statistical processing of data, interpretation of results.

Nadezhda E. Rubtsova – planning of empirical research. Application of the author's methodology "Cyber socialization engagement", organization of data collection, interpretation of results.

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Information on conflict of interest

The authors have no conflicts of interest to declare.