

Personality Characteristics and Students' Engagement in a Forced Distance Learning

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מאפיינים אישיותיים ומעורבות תלמידים בלמידה מתוקשבת כפויה

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Abstract

Since the beginning of the world COVID-19 pandemic, schools have faced the challenge of effectively engaging adolescents over distance learning platforms. The goal of the study was to examine the relationship between secondary school students' online engagement in forced distance learning during the pandemic, personality characteristics, loneliness, and the experience of Zoom. The 235 adolescents completed an online survey, containing both closed-ended questions that were statistically analyzed and an open-ended question that was coded by three trained independent reviewers. The study took place during a lockdown due to a third wave of coronavirus in Israel and all the participants were students studying through Zoom. Findings show that higher agreeableness, openness to experience and consciousness, explain adolescents' higher engagement in online studies. Moreover, higher participation in Zoom and experiencing it more positively predict higher engagement. Findings also indicated that the more the adolescents were lonely, neurotic and extroverted, the less positive they experienced the distance learning. These findings can enable educators to better adjust their classes to the new learning environment and help adolescents gain tools to engage better both during a world crisis and peaceful times.

Keywords: adolescents, engagement, the BIG5 personality characteristics, distance learning, COVID-19.

Literature review

In March 2020, the World Health organization declared COVID-19 a global pandemic, which required social distancing and the temporary in-person closure of educational institutions. Remote learning for all ages had started. Since there was no warning and no time to prepare, the switch to remote learning was very rapid, and characterized by confusion and lack of suitable training and support (Hodges et al., 2020), as well as hurdles such as, availability of

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technological devices and Internet, absence of a quiet room, and learning resources access (Shamir-Inbal & Blau, 2021). Schools faced the challenge of effectively engaging adolescents over distance learning platforms, as engagement increases student satisfaction and motivation to learn, decreases the sense of isolation, and improves performance in online courses (Martin & Bolliger, 2018). Researchers associated student engagement with higher academic achievement, persistence, reducing school dropout rates, satisfaction, and sense of community (Halverson & Graham, 2019; Wang & Fredricks, 2014). Therefore, creating multiple opportunities for learner engagement in online environment is essential, as it is the core solution to learners' sense of isolation and dropout in online learning. Learner engagement increases learner motivation, satisfaction, and success, as well as improves learner performance in online lessons (Martin & Bolliger, 2018).

Although research is already exploring learner engagement in distance learning contexts, little is known regarding the correlation with personality characteristics (Rivers, 2021), especially for adolescents in a forced distance learning situation. Research showed that adolescents experienced an increase in psychological distress, which had a detrimental effect on their mental health (Liu & Wang, 2021). Therefore, it is important to understand the psychological and personality factors contributed to the adolescents' engagement during this challenging time. Thus, the goal of the study was to examine the relationship between secondary school students' BIG5 personality characteristics, loneliness and online engagement during the COVID-19 pandemic.

According to the Big Five model, most personality traits can be divided into five dimensions: agreeableness, openness to experience, conscientiousness, extraversion, and neuroticism (McCrae & John, 1992). Conscientiousness (the tendency to be organized, reliable, and responsible) and openness to experience are particularly relevant to online learning. Previous research indicates that conscientiousness is especially important for school performance and to academic success (Abe, 2020). Conscientious have also positive direct effect on online academic self-efficacy (Rivers, 2021). Openness to experience was found as one of the predictors for information literacy self-efficacy (Aharony & Gazit, 2018) among academic students, to higher engagement in virtual discussions (Gazit et al., 2018) and to better adjust to changing situations regarding in-class and online learning or new forms of learning (Watjatrakul, 2016). Considering other personality traits, previous studies found that agreeableness, extraversion, and neuroticism predict different types of social media use (Gazit, 2021). Thus, given the distinct context of social isolation and additional stress in life (Bu et al., 2020), attending the new forced education setup during the pandemic, highly neurotic adolescents may struggle more with the perplexing environment of online classes (Audet et al., 2021), while the ones higher on agreeableness and extroversion may engage more in class.

Method

Participants

The 235 participants who filled out the online survey were secondary school students (7th-12th grade) from various schools, who studied through Zoom as the main distance learning platform, during the end of December 2020. Of the 235 adolescents who completed the online survey, 66 (28%) were boys and 169 girls (72%); 91 (39%) were in seventh to ninth grade, and 144 (61%) were students in tenth to twelfth grade. Most of the adolescents were with typical development (257, 87.5%), and 28 of them (11.9%) were diagnosed with ADHD or learning disabilities. The age average was 15.5 (SD = 1.59).

Measures

Researchers used an online survey with seven sections: 1) 5 demographic questions; 2) Online Student Engagement questionnaire (OSE; Dixson, 2015) – 19 items with four factors: skills, emotion, participation, and performance. $\alpha=.90$; 3) A short version of the loneliness questionnaire (Hughes et al., 2004) – 3 statements. $\alpha = .85$; 4) the Big Five questionnaire for children (*GBFQ-C-SF*; Markos & Kokkinos, 2017) – 30 items, 6 items for each personality trait. $\alpha = .72-.81$; 5) Participating in the Zoom platform (Gazit, 2022) – 5 items. $\alpha = .86$; and 6) The general experience of distance learning during the year of COVID-19 – a non-mandatory single open-ended question asking the adolescents about their experiences.

Procedure

The online survey was distributed during December 2020. Requests to fill out the questionnaire were posted in a few large social media groups aimed at parents across Israel. The request to fill out the survey was directed only at parents who have children that are currently studying at seventh to twelfth grade through distance learning, with a link to an online survey. The study was approved by the Faculty's IRB Committee.

Results

In order to examine the correlations between online engagement and other variables, a Pearson product-moment correlation coefficient was computed between the quantitative variables (Table 1).

Table 1. Pearson product-moment correlation coefficient between the research variables, M and SD (N=235)

Engagement		1	2	3	4	5	6	7	8	9	10
1. Age	-.12										
2. Neuroticism	-.09	-.17*									
3. Extroversion	.18**	.09	.01								
4. Agreeableness	.35***	.031	-.22**	.45***							
5. Openness	.39***	-.01	-.07	.21***	.20**						
6. Conscientiousness	.61**	-.01	-.14*	.23***	.47***	.40***					
7. Loneliness	-.01	.05	.34***	.02	-.01	-.14*	.01				
8. Zoom Active	.60***	-.07	.13	.15*	.09	.27***	.23***	-.04			
9. Zoom Passive	.56***	-.01	-.07	.15*	.24***	.20**	.34***	-.01	.46***		
10. Distance learning experience	.17*	-.10	-.19**	-.23***	-.07	.20**	.15*	-.30***	.12	.04	
Mean	3.00	2.50	3.78	4.03	3.26	3.06	3.12	2.69	3.35	3.00	2.00
SD	0.72	0.87	0.72	0.63	0.85	0.70	1.09	1.20	1.28	0.72	0.92

Table 1 shows that the higher they were in extroversion, agreeableness, openness to experience, and consciences, the more the adolescents were engaged in their studies during the first year of the pandemic. Also, higher passive and active participation in the Zoom and experiencing it more positively was associated with higher engagement. Moreover, the more the adolescents were neurotic, extroverted and lonely, the less positive they experienced the distance learning. Nevertheless, the more open to experiences and conscientiousness they were, they experienced the distance learning in a more positive way.

In order to explain adolescents' engagement in online learning during the pandemic, a hierarchical regression analysis was conducted. The regressions explained 69% of the variance in the engagement. The predictors were entered as four steps, as can be seen in Table 2.

Table 2. Hierarchical regression coefficients of the explained variance of engagement (N = 481)

Predictors	B	β	ΔR^2	R^2
1 Demographic variables:			.02	.02
Age	-.04	-.09		
Gender	.14	.09		
Class	-.05	-.03		
Disability	-.08	-.04		
2 Personality traits:			.46***	.48***
Extroversion	-.01	-.01		
Agreeableness	.16	.14*		
Openness to experience	.17	.20***		
Conscientiousness	.52	.50***		
Neuroticism	.00	.00		
3 Loneliness	.02	.02	.00	.48
5 Zoom platform:			.21***	.69***
Active participation	.23	.38***		
Passive participation	.13	.22***		
Subjective experience	.03	.04		

* $p < .05$ ** $p < .01$ *** $p < .001$

Discussion

Creating an effective distance learning is not so easy in general, moreover during this emergency and rapid switch during the pandemic involved technological and learning obstacles. However, the forced transformation to remote learning should also concentrate on psychological aspects. The current study focused on online engagement in virtual classes during this challenging time, as the main goal was to examine the relationship between adolescents' online engagement in a forced distance learning during the pandemic, personality's characteristics, loneliness, and the technological experience through Zoom. Findings revealed that higher

agreeableness, openness to experience, and conscientiousness, can explain higher adolescents' online engagement during the first year of the pandemic. Previous research also showed the importance of conscientiousness and openness to experience for school performance, academic success, (Abe, 2020; Judge & Ilies, 2002), higher engagement in virtual discussions (Gazit et al., 2018) and better adjustment to changes induced by the crisis (Iterbeke & De Witte, 2021) and to new forms of learning (Watjatrakul, 2016). No relationships were found between neuroticism, loneliness and engagement. Earlier studies have found associations between neuroticism and social media engagement (e.g. Gazit et al., 2019), while others have not (e.g. Amichai-Hamburger et al., 2016). Regarding loneliness, in accordance with our findings, Gazit and Amichai-Hamburger (2020) also did not find a relationship between loneliness and online engagement, suggesting that other personality traits are more dominant in online engagement than emotional stability.

Findings also show that higher participation in the Zoom platform, both active and passive, can predict higher engagement. A study found that student hand-raising can be an indicator of engagement in classroom learning (Böheim et al., 2020), which can be perceived as comparable to active participation in Zoom. A latest study found that as the active involvement of students in the lesson increased, so did their cognitive and social experience (Meishar-Tal & Levenberg, 2021).

Finally, findings suggest that the more the adolescents were neurotic, extroverted, and lonely, the less positive they experienced the distance learning. Nevertheless, the more open to experiences, and conscientiousness they were, they experienced the distance learning in a more positive way. The inclusion of extroversion as it correlates with negative experience of distance learning environment is unexpected. Extroverts are usually more active online (Amichai-Hamburger, 2020) and reproduce their offline personality into the online environment (Amichai-Hamburger et al., 2016). Though, the difficulty of coping with learning in the absence of a sense of community is one of the leading problems of distance learning experience (Borup et al., 2020), and may affect particularly the extrovert adolescents.

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