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Research article

Attitudes towards Digital Educational Technologies among University Students of Different Fields of Study: Role of Academic Motivation and Personality Traits

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Abstract. Numerous research in recent years has focused on the pros and cons of using digital technologies in education. It has been established that difficulties associated with the digital transformation of education are determined not only by objective reasons, but also by the psychological characteristics of participants in the educational process and their attitudes towards digital educational technologies (DETs). The purpose of present study is to identify differences both in the attitudes towards DETs, and in the correlation of these attitudes' indicators with personality traits and academic motivation between university students of different fields of study. The study involved 362 students (90.05% females), including 199 Psychology and 163 Philology students of RUDN University. Students' attitudes towards DET were measured with *The Attitudes towards DETs Scale for University Students* based on the Tripartite Model of Attitudes. The educational motivation of students was measured with *The Academic Motivation Scales* based on Deci and Ryan's Self-Determination Theory. The personality traits were measured with the short version of the NEO Five-Factor Inventory. The research findings show that the differences between Psychology and Philology students appear not so much in their attitudes towards DETs, but in the correlations and regression models of the studied variables. The most significant predictors of the attitudes towards DETs are Agreeableness, Conscientiousness and Motivation for personal growth in psychologists, and Openness, Extraversion and Intrinsic cognition motivation in philologists.

Key words: digitalization, e-Learning, university students, Tripartite Model of Attitudes, attitudes towards digital educational technologies, academic motivation, Self-Determination Theory, Five-Factor Model, personality traits

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Introduction

The rapid digitalization of all aspects of human life is undoubtedly the most important trend of the 21st century, as a result of which radical transformations of society as a whole are taking place, i.e. its “digital transformation” (Vial, 2019).

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The COVID-19 pandemic and its consequences became a catalyst for the sharp transition of the world community, including the education sector, into the digital space. The “pros” and “cons” of digitalization of education are still one of the most controversial issues discussed not only in scientific, but also in broad public discourse during and after the pandemic (Cretu & Ho, 2023; Narbut et al., 2020; Radu et al., 2020). At the same time, many researchers believe that the use of various types of e-learning, virtual and blended learning will contribute to achieving the goals of sustainable education (Araneo, 2024; He et al., 2024).

Numerous studies indicate that many of the difficulties associated with the digital transformation of education are determined not only by objective issues, for example, technical problems, but also by the psychological characteristics of educational process participants, for example, their perception and attitudes towards DETs (Aleshkovski et al., 2021; He et al., 2024; Narbut et al., 2020; Novikova et al., 2021; 2022a; 2023; Radu et al., 2020; Rizun & Strzelecki, 2020). So, S.K.M. Brika and co-authors, based on bibliometric analysis, found that “*Motivation and students’ attitudes to e-learning systems*” rank first among the nine most important areas of e-Learning research in higher education conducted during the COVID-19 pandemic (Brika et al., 2022).

In international psychology, psychodiagnostic tools for measuring students’ attitudes towards various aspects of digitalization of education began to be developed long before the pandemic on the basis of various theoretical models (Chou, 2014; Edmunds et al., 2010; Kar et al., 2014; Rosen et al., 2013; Selwyn, 1997). Thus, well-known and frequently used tools are the *Online Learning Readiness Scale* (OLRS) by M.-L. Hung et al. (2010), the *Media and Technology Usage and Attitudes Scale* (MTUAS) by Rosen et al. (2013), as well as the *Remote Learning Attitude Scale* (RLAS) developed by K. Tzafilkou et al. during the COVID-19 pandemic (Tzafilkou et al., 2021).

Many international studies measure university students’ and teachers’ attitudes towards information and communication technologies (ICT) using the Tripartite Model of Attitudes or ACB model (Guillén-Gámez & Mayorga-Fernández, 2020; Guillén-Gámez et al., 2020; Ordóñez & Romero, 2016; Prokop & Fančovičová, 2008; Romero Martínez et al., 2020; Svenningsson et al., 2022). For example, X.G. Ordóñez and S.J. Romero Martínez developed and validated the *Scale of Attitudes Towards ICT* (SATICT) in Spanish, that consists of three subscales: affective, cognitive and behavioral ones (Ordóñez & Romero, 2016).

Prior to the COVID-19 pandemic, hardly no specialized instruments were created in Russia to diagnose attitudes towards digital technologies in education. We can only mention the study of attitudes towards Internet technologies by G.U. Soldatova and T.A. Nestik (2016), short and screening versions of the *Digital Competence Index* (DCI) by G.U. Soldatova et al. (2018), the *University Students’ Attitudes towards DETs Questionnaire* by I.A. Novikova et al. (Novikova et al., 2021; 2022a; 2022b), as well as a few sociological studies (Popova, 2019). After the start of the pandemic, Russian scientists conducted a large number of studies on the attitude of university students and teachers to the transition to distance learning, but most of them were based on sociological surveys (Aleshkovski et al., 2021;

Narbut et al., 2020) or short questionnaires (Ismatullina & Zakharov, 2021; Nevryuev et al., 2022).

Several special psychodiagnostic tools in Russian have been developed and validated in recent years to test and evaluate university students' and teachers' attitudes regarding the digitization of education. M.G. Sorokova et al. proposed the Scale for assessing the university digital educational environment (AUDEE Scale) (Sorokova et al., 2021) based on the Personality Attitudes Theory by the famous Russian psychologist Vladimir N. Myasishchev (1995); I.A. Novikova et al. created and psychometrically tested the *Attitudes towards DETs Scale for University Students* (ATDETS-US) (Novikova et al., 2023; Novikova & Bychkova, 2024) based both on Myasishchev's Personality Attitudes Theory (1995) and the Tripartite Model of Attitude (Fabrigar et al., 2005; VandenBos, 2015).

Using the tools described above, international and Russian psychologists, educators, and sociologists study the correlates and predictors of university students' attitudes towards digital technologies in education, including in samples of university students from different fields of study.

Z.D. Abdullah et al. (2015) examined the difference between Arts and Science students' attitude towards IT at Koya University in Iraq based on Tripartite Model of Attitudes. As expected, the study revealed more positive attitude towards IT in Science students, however, significant differences were shown only for the behavioral component of attitude (Abdullah et al., 2015). These findings are generally consistent with the results obtained by G. Vladova and her colleagues in a study of the influence of the COVID-19 pandemic on student acceptance of technology-mediated teaching in Germany in 2020. In general, Music and Arts students have more negative perceptions of almost all technology-mediated teaching models compared with Information Systems students (Vladova et al., 2021).

I.A. Novikova and P.A. Bychkova compared the attitudes towards the DETs (ATDETs) among Russian university students in psychological, medical and natural science fields of study before the start of the COVID-19 pandemic using the *University Students' Attitudes toward DET Questionnaire*. The study showed that Natural Science students have a better ATDETs, while Medical students have a worse ATDETs than students from other fields of study (Novikova & Bychkova, 2020).

In studies concerning the personality aspects of students' ATDETs, the Five-Factor Model (FFM) of personality traits in various modifications is widely used (Audet et al., 2021; Baruth & Cohen, 2022; Belinskaya & Fedorova, 2020; Bhagat et al., 2019; Cohen & Baruth, 2017; Firat, 2022; Keller & Karau, 2013; Mustafa et al., 2022; Peng & Dutta, 2023; Quigley et al., 2022; Rivers, 2021; Rivers, 2022; Staller et al., 2021). The motivational characteristics of students in the context of digitalization of education are often considered within the framework of Deci and Ryan's Self-Determination Theory (SDT) (Al-Said, 2023; Audet et al., 2021; Bovermann et al., 2018; Gustiani, 2020; Rasskazova & Soldatova, 2022; Rosli et al., 2022; Staller et al., 2021).

S. Mustafa et al. studied the role of the Big Five personality traits in Chinese university students' satisfaction with online teaching modes during COVID-19 pandemic and their adoption intentions towards online teaching modes (Mustafa et

al., 2022). The results showed that students' satisfaction with online teaching modes is negatively impacted by extraversion, but positively by agreeableness, conscientiousness, neuroticism, and openness. Students' future adoption intentions of online teaching modes are negatively impacted by openness, but positively by agreeableness, extraversion, and neuroticism. Generally, agreeableness is the most significant, and conscientiousness is the least important factor for students to adopt online teaching modes (Mustafa et al., 2022).

O. Baruth and A. Cohen explored the relation between personality traits (using Costa & McCrae's FFM) and Israeli university students' satisfaction with online learning activities offered by Techno-Pedagogical Learning Solutions (TPLS) (Baruth & Cohen, 2022). All five personality traits and satisfaction with a number of TPLS features were shown to be significantly correlated in the study's findings. Cluster analysis revealed that, in contrast to students in the "non-neurotic" group, those in the "neurotic" group showed low satisfaction with all TPLS (Baruth & Cohen, 2022).

É.C. Audet et al. (2021) studied role of the Big 5 personality traits in Canadian university students' adaptation to online learning, measured by their quality of motivation, subjective well-being, self-efficacy, online engagement, and online satisfaction. Results showed that conscientiousness and openness to experience were associated with higher self-efficacy and with different forms of autonomous motivation for online learning. Only openness to experience was strongly related to engagement with online learning and higher levels of subjective well-being (Audet et al., 2021).

K. Bovermann et al. (2018) investigated academic motivation in relation to online learning readiness and attitude towards gaming in gamified online learning among undergraduate students in Germany. Significant positive correlations were found between students' online learning readiness in the dimension of technical competencies and both types of autonomous motivation (identified and intrinsic motivation). At the same times students who indicated rather low online learning readiness tended to show non-autonomous motivation (amotivation) (Bovermann et al., 2018).

I.A. Novikova et al. (2022b) using the *University Students' Attitudes toward DET Questionnaire* found that the scales of academic motivation have a greater impact on ATDETs among Russian university students as compared to personality traits. Nonetheless, these impacts are specific to students studying natural sciences, medicine, and psychology. Among the scales of academic motivation, motivation for self-respect is a positive predictor of ATDETs indicators in all the studied samples, but amotivation is a negative predictor of all ATDETs indicators in the total sample. Among the personality traits, openness is most often a positive predictor of general interest and involvement in digital technologies in all the samples, except for the psychological students, for whom, more often, extraversion is a positive and agreeableness is a negative predictor of various indicators of ATDETs (Novikova & Bychkova, 2022; Novikova et al., 2022b).

Our analysis of research on various factors of university students' ATDETs allows us to argue that an important direction of this kind of research is may be to identify the relationship of ATDETs indicators with personality traits and academic

motivation while taking into account the students' field of study. It is necessary to emphasize that many of the studies described above compared university students not only from different fields of study, but also from different universities, years of study, age and gender, which could have an impact on the findings. Therefore, it seems to us very important to select for the research samples of students who are as equivalent as possible in all of the listed factors except the field of study in order to obtain the most valid conclusions.

The purpose of present study is to identify differences both in the ATDETs and its components based on the Tripartite Model of Attitudes, and in the correlation of personality traits and academic motivation with the ATDETs between university students of different fields of study (using the example of Psychology students and Philology students).

Based on previous studies of university students' ATDETs, we assume that there are differences between Psychology students and Philology students in: (1) their ATDETs and its components; (2) the correlation of personality traits and academic motivation with the ATDETs and its components; and (3) in regression models for indicators of ATDETs and its components with personality traits and types of academic motivation as predictors.

Materials and Methods

Participants

A total of 362 students (90.05% females and 9.95% males) from RUDN University took part in the research, aged 16 to 22 years ($M_{\text{age}} = 18.27 \pm 0.89$). All participants are first-year undergraduate students of the Faculty of Philology, major in different fields of study:

- 199 Psychology students (89.95% females and 10.05% males), aged 16 to 22 years ($M_{\text{age}} = 18.41 \pm 0.95$);
- 163 Philology students (90.18% females and 9.82% males), aged 16 to 22 years ($M_{\text{age}} = 18.09 \pm 0.78$);

All the students participated in the study during classes in psychological or philological disciplines as one of the additional tasks, for which they received additional points. Data collection took place from February 2022 to January 2024 via Google Forms.

Techniques

To diagnose students' attitudes towards DETs, the *Attitudes towards DETs Scale for University Students (ATDETS-US)* by I.A. Novikova et al. (2023) was used. ATDETS-US contains 36 items grouped into three subscales (12 items each) in accordance with the Tripartite Model of Attitudes (ACB model):

- *Emotional Subscale* (ES) aimed at determining students' emotions and feelings in relation to DETs ($\alpha = 0.90$; $\omega = 0.89$);
- *Cognitive Subscale* (CS) aimed at determining students' perceptions and knowledge regarding the DETs ($\alpha = 0.89$; $\omega = 0.88$);

– *Behavioral Subscale* (BS) aimed at assessing how students master digital devices and technologies in the process of studying at a university ($\alpha = 0.83$; $\omega = 0.82$);

– *The Total Indicator of the ATDETS-US* ($\alpha = 0.95$; $\omega = 0.86$), reflecting the general attitude of university students toward digital technologies in education.

Participants rate their agreement with scale items using a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree), accordingly, raw scores for each subscale can range from 12 to 60 points, and for the total indicator raw scores can range from 36 to 180 points. Instructions, text and key to the scale are provided in the Appendix in English and Russian.

The FFM personality traits were measured using the Russian version of *NEO-FFI* adapted by S. Biryukov and M. Bodunov (Biryukov & Vasilev, 1997; Bodunov & Biryukov, 1989; Costa & McCrae, 1992). This version of NEO-FFI consists of 60 statements to which the respondent expresses the degree of consent by 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree). The raw scores for each of the Five-Factor personality traits (Neuroticism, Extraversion, Openness, Conscientiousness, and Agreeableness) can range from 12 to 60 points.

To determine the motivation of students' educational activity, the "*Academic motivation scales*" (AMS) questionnaire by T.O. Gordeeva et al. based on Deci and Ryan's Self-Determination Theory was used (Gordeeva et al., 2014). This questionnaire allowed us to diagnose seven different types of educational motives of students: three types of intrinsic motivation (Intrinsic cognition, Achievement, and Personal growth), three types of extrinsic motivation (Motivation for self-respect, Introjected, and External regulation) and an Amotivation. AMS consists of 28 direct statements to which the subject expresses the degree of consent on a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree). Each of the academic motivation scales includes 4 statements, the raw scores can range from 1 to 20 points (Gordeeva et al., 2014).

Data Analysis

Most of the studied variables (except Neuroticism) have a non-normal distribution according to the Shapiro–Wilk test. In this regard, nonparametric methods were chosen for correlation and comparative analyses that correspond to this type of data.

The descriptive statistics methods, Spearman's rank correlation analysis with Holm corrections, Mann–Whitney' *U*-test for independent samples, Fisher *F*-test, and multiple regression analysis were used for statistical analysis.

Regression analysis was performed by using the method of "backward" stepwise search. Independent variables were personality traits (five NEO-FFI subscales) and academic motivation (seven AMS scales); dependent variables were indicators of students' attitudes towards DETs (ES, CS, BS, and the Total Indicator of the ATDETS-US). In the first step, full regression models with personality traits as possible predictors of each indicator of students' attitudes towards DETs were constructed for the total sample and separately for Psychology and Philology

students. In the second step, all AMS scales were added to the regression models as possible predictors. At the third step, the regression models obtained in the first and second steps were compared and the ΔR^2 indicator was calculated. The next step was to analyze all input models by removing the least significant predictors. For further analysis, models with the highest information load and the smallest number of predictors (“best predictor model”) were selected.

Statistical processing was carried out in the R software environment for statistical computing and graphics, version 4.4.0 (2024-04-24 ucrt) — “Puppy Cup” (R Core Team, 2023; Revelle & Condon, 2019; The jamovi project, 2022).

Results

Table 1 presents the results of descriptive statistics (means and standard deviations) in total sample and subsamples of Psychology and Philology students as well as the analysis of differences between all variables studied using the U-test in Psychology and Philology students. Table 1 shows that there is only one significant difference between Psychology and Philology students: Openness is higher among philologists.

Table 1

Means (M), standard deviations (SD) and Mann–Whitney’ U-test between study variables in Psychology and Philology students

Variables	Total Sample (N = 362)		Psychology students (N = 199)		Philology students (N = 163)		Mann–Whitney’ U-Test	p-level
	M	SD	M	SD	M	SD		
Attitudes towards DETs Scale for University Students								
Emotional Subscale	52.77	7.76	52.76	7.93	52.78	7.57	16581	0.713
Cognitive Subscale	50.59	7.03	50.93	7.24	50.17	6.77	17473	0.205
Behavioral Subscale	47.90	7.10	48.31	7.02	47.40	7.18	17415	0.227
ATDETS-US	151.25	19.15	152.00	19.65	150.34	18.54	17310.5	0.270
NEO-FFI Factors								
Neuroticism	35.93	6.99	35.76	6.78	36.13	7.25	15783	0.660
Extraversion	39.91	7.62	40.26	7.21	39.49	8.10	17312	0.269
Openness	41.97	5.13	40.95	4.88	43.22	5.17	11900.5	0.001
Agreeableness	41.34	6.35	40.82	6.51	41.96	6.12	14699.5	0.125
Conscientiousness	41.98	7.77	41.65	7.65	42.37	7.92	15178.5	0.294
Academic Motivation Scales								
Intrinsic cognition motivation	16.62	3.18	16.61	3.15	16.64	3.22	16069	0.879
Achievement motivation	15.00	3.68	14.98	3.58	15.02	3.80	15830.5	0.694
Motivation for personal growth	16.15	3.40	16.23	3.40	16.06	3.39	16804	0.551
Motivation for self-respect	15.04	3.75	14.95	3.89	15.15	3.57	15871	0.725
Introjected motivation	12.55	3.76	12.65	3.75	12.43	3.78	16553.5	0.735
External regulation	11.33	3.62	11.36	3.71	11.29	3.53	16213	0.996
Amotivation	7.71	3.72	7.63	3.79	7.80	3.64	15458.5	0.437

Tables 2–4 present Spearman’s correlations between the ATDETS-US subscales and total indicator, personality traits, and AMS scales in total sample and subsamples of Psychology and Philology students.

Table 2

Spearman's correlations between studied variables in total sample of university students (N = 362)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Emotional Subscale	—															
2. Cognitive Subscale	.58***	—														
3. Behavioral Subscale	.65***	.71***	—													
4. ATDETS-US	.83***	.87***	.90**	—												
5. Neuroticism	-.10	-.16	-.16	-.16	—											
6. Extraversion	.23***	.17	.22**	.22**	-.44***	—										
7. Openness	.18*	.23***	.18*	.22**	-.07	.18*	—									
8. Agreeableness	.23***	.24***	.19*	.26***	-.15	.11	.16	—								
9. Conscientiousness	.19*	.29***	.28***	.28***	-.47***	.35***	.09	.14	—							
10. Intrinsic cognition motivation	.17*	.35***	.31***	.31***	-.27***	.21**	.34***	.14	.34***	—						
11. Achievement motivation	.09	.24***	.22**	.20**	-.30***	.25***	.26***	.01	.39***	.75***	—					
12. Motivation for personal growth	.20**	.35***	.33***	.33***	-.25***	.22**	.32***	.09	.37***	.79***	.75***	—				
13. Motivation for self-respect	.08	.18*	.20**	.17*	.01	.09	.11	.01	.32***	.45***	.47***	.62***	—			
14. Introjected motivation	-.07	-.03	-.03	-.04	.22**	-.10	-.16	-.04	.01	-.09	-.08	-.05	.32***	—		
15. External regulation	-.10	-.12	-.12	-.13	.36***	-.26***	-.18*	-.12	-.23***	-.36***	-.34***	-.32***	.03	.67***	—	
16. Amotivation	-.22**	-.33***	-.30***	-.31***	.27***	-.17*	-.31***	-.16	-.29***	-.69***	-.53***	-.63***	-.33***	.20**	.43***	—

Note: * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$, corrected with Holm correction method.

Table 3

Spearman's correlations between studied variables in the sample of Psychology university students (*N* = 199)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Emotional Subscale	—															
2. Cognitive Subscale	.63***	—														
3. Behavioral Subscale	.69***	.72***	—													
4. ATDETS-US	.86***	.88***	.91***	—												
5. Neuroticism	-.12	-.19	-.16	-.17	—											
6. Extraversion	.17	.13	.15	.17	-.45***	—										
7. Openness	.16	.22	.16	.19	-.12	.16	—									
8. Agreeableness	.31***	.35***	.28**	.36***	-.16	.03	.15	—								
9. Conscientiousness	.22	.30**	.32***	.31***	-.49***	.32***	.08	.14	—							
10. Intrinsic cognition motivation	.18	.36***	.32***	.31***	-.30**	.20	.38***	.09	.33***	—						
11. Achievement motivation	.09	.19	.20	.17	-.32***	.26*	.27**	-.11	.37***	.70***	—					
12. Motivation for personal growth	.26*	.37***	.36***	.36***	-.28**	.23	.36***	.07	.37***	.78***	.72***	—				
13. Motivation for self-respect	.11	.15	.19	.17	-.01	.07	.09	-.08	.33***	.42***	.45***	.59***	—			
14. Introjected motivation	-.02	-.02	.02	-.01	.24*	-.12	-.21	-.13	.01	-.12	-.10	-.06	.29**	—		
15. External regulation	-.09	-.08	-.06	-.09	.37***	-.25*	-.24*	-.13	-.17	-.36***	-.30**	-.28**	.07	.70***	—	
16. Amotivation	-.27**	-.32***	-.30**	-.32***	.30**	-.18	-.40***	-.14	-.28**	-.66***	-.46***	-.60***	-.24*	.28**	.45***	—

Note: * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$, corrected with Holm correction method.

Table 4

Spearman's correlations between studied variables in the sample of Philology university students ($N = 163$)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Emotional Subscale	—															
2. Cognitive Subscale	.52***	—														
3. Behavioral Subscale	.61***	.69***	—													
4. ATDETS-US	.80***	.86***	.89***	—												
5. Neuroticism	-.07	-.10	-.14	-.14	—											
6. Extraversion	.31**	.20	.28*	.29*	-.44***	—										
7. Openness	.22	.28*	.24	.30*	-.03	.26	—									
8. Agreeableness	.13	.11	.07	.12	-.14	.21	.15	—								
9. Conscientiousness	.17	.27*	.23	.25	-.45***	.40***	.07	.13	—							
10. Intrinsic cognition motivation	.15	.34***	.29*	.30**	-.23	.21	.29*	.21	.35***	—						
11. Achievement motivation	.10	.30**	.26	.25	-.27*	.23	.24	.14	.40***	.80***	—					
12. Motivation for personal growth	.13	.31**	.30**	.29*	-.22	.21	.29*	.11	.37***	.80***	.79**	—				
13. Motivation for self-respect	.04	.23	.21	.19	.02	.10	.10	.13	.31**	.48***	.50**	.66***	—			
14. Introjected motivation	-.13	-.05	-.11	-.10	.20	-.09	-.12	.06	.00	-.05	-.05	-.03	.35***	—		
15. External regulation	-.12	-.18	-.21	-.20	.34***	-.26	-.11	-.12	-.30*	-.37***	-.40***	-.36***	-.02	.64***	—	
16. Amotivation	-.15	-.33**	-.29*	-.30**	.23	-.17	-.24	-.18	-.29*	-.74***	-.62***	-.67***	-.45***	.09	.41***	—

Note: * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$, corrected with Holm correction method.

The Tables 2–4 confirm, first of all, the close positive associations between the ATDETS-US subscales and its total indicator, as well as the associations between both some personality traits and academic motivation scales, which generally correspond to the theoretical foundations of the techniques used for measurement. Based on the purpose of our research, the greatest interest for analysis is the correlation between indicators of ATDETs and their personality traits on the one hand and types of academic motivation on the other. Figures 1 and 2 visualize these correlations.

Figure 1 shows that in the total sample, all personality traits with the exception of Neuroticism are positively associated with indicators of students' ATDETs; three types of internal motivation (Intrinsic cognition motivation, Achievement motivation, Motivation for personal growth) and one type of external motivation (Motivation for self-respect) are positively related to most of these indicators, and Amotivation is negatively related to all indicators of students' ATDETs. At the same time, two types of external motivation (Introjected motivation and External regulation External regulation) have no correlations with indicators of students' ATDETs.

Figure 2 shows that both in the subsample of Psychology students and Philology students, two types of internal motivation (Intrinsic cognition motivation and Motivation for personal growth) are positively related to the majority of indicators of students' ATDETs, and Amotivation is negatively related to all these indicators, which generally corresponds to the nature of the correlations in the total sample. However, the nature of the correlations of indicators of students' ATDETs with personality traits is dominated by differences in the compared subsamples: Agreeableness and Conscientiousness have more correlations with these indicators in Psychology students, and Extraversion and Openness – in Philology students.

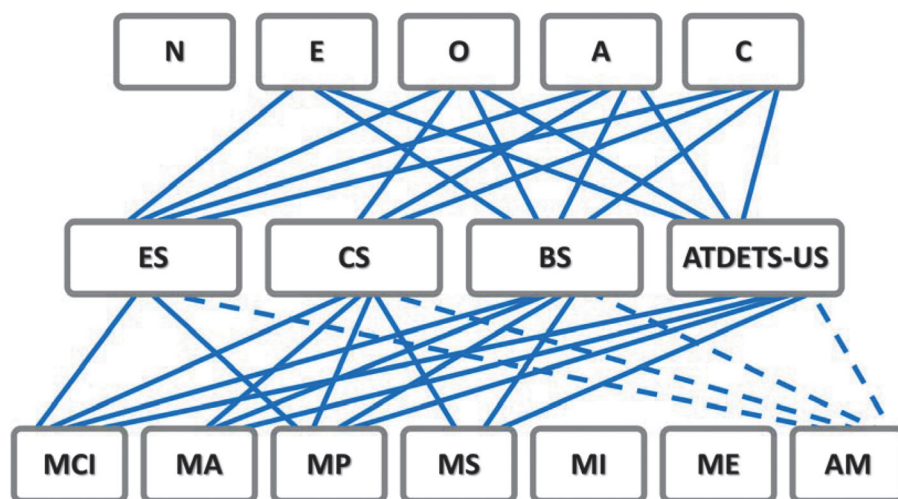


Figure 1. Graphical representation of the correlations between the variables studied in the total sample of university students ($N = 362$)

Note: the solid lines – positive correlations; the dashed lines – negative correlations; ES – Emotional Subscale; CS – Cognitive Subscale; BS – Behavioral Subscale; N – Neuroticism; E – Extraversion; O – Openness; A – Agreeableness; C – Conscientiousness; MCI – Intrinsic cognition motivation; MA – Achievement motivation; MP – Motivation for personal growth; MS – Motivation for self-respect; MI – Introjected motivation; ME – External regulation; AM – Amotivation.

Source: created by Polina A. Bychkova using the MS PowerPoint

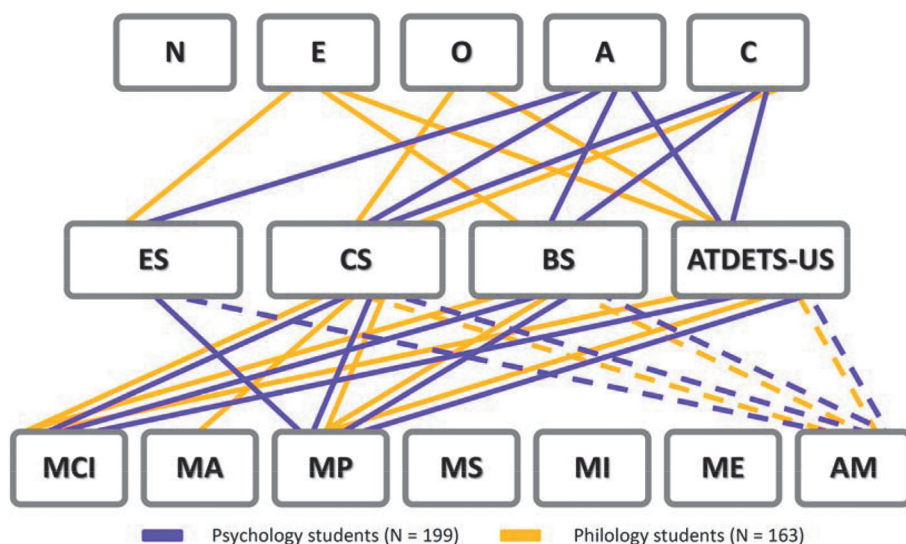


Figure 2. Graphical representation of the correlations between the variables studied in in Psychology and Philology students

Note: the solid lines – positive correlations; the dashed lines – negative correlations; ES – Emotional Subscale; CS – Cognitive Subscale; BS – Behavioral Subscale; N – Neuroticism; E – Extraversion; O – Openness; A – Agreeableness; C – Conscientiousness; MCI – Intrinsic cognition motivation; MA – Achievement motivation; MP – Motivation for personal growth; MS – Motivation for self-respect; MI – Introjected motivation; ME – External regulation; AM – Amotivation.

Source: created by Polina A. Bychkova using the MS PowerPoint

The results of the multiple regression analysis (best predictor models) are presented in Tables 5–8. Multiple correlation coefficients between dependent variables (indicators of students' attitudes towards DETs, i.e., the ATDETS-US subscales and its total indicator) and predictors (personality traits and academic motivation scales) for all models are statistically valid according to the Fisher F-test, which confirms that there is a significant impact of some personality traits and/or types of academic motivation on ATDETS indicators in Psychology and Philology university students.

The adjusted determination coefficients (R^2_{adj}) obtained for the regression models are not very high and vary from 13 to 22%. However, taking into account the fact that students' ATDETS depend on many factors other than personality traits and academic motivation, these results can be considered quite satisfactory.

Table 5 shows that the best predictor model for Emotional Subscale of ATDETS-US predicts 13.8% of the variance in the total sample, 14.6% in Psychology students and 15.7% in Philology students. None of the significant predictors coincided in the three analyzed samples. Extraversion and Openness (with positive impact), and achievement motivation (with negative impact) are significant predictors in the total sample and subsample of philologists, Agreeableness with positive impact is significant predictor in the total sample and subsample of psychologists. Motivation for personal growth is positive significant predictor only in the total sample, Amotivation is negative significant predictor only in the Psychology subsample, and Intrinsic cognition motivation is positive predictor only in the Philology subsample at the level of statistical trend ($p = 0.089$). It can be

noted that the significant predictors of the emotional component of the students' ATDETs do not coincide in the subsamples of Psychology and Philology students, while more similarities were found between the total sample and the subsample of philologists.

Table 5

Best predictor regression models for <i>Emotional Subscale</i> of ATDETS-US							
Sample/Variable	Summary of Model			Coefficients			
	R ² _{adj}	F	p-Value	Estimate	Std. Error	t-Value	p-Value
Total sample (N = 362)	0,138	12,5	< .001				
(Intercept)				23.941	3.9782	6.02	< .001
Extraversion				0.139	0.0522	2.66	0.008
Openness				0.293	0.079	3.71	< .001
Agreeableness				0.222	0.0611	3.63	< .001
Achievement motivation				−0.439	0.1642	−2.67	0.008
Motivation for personal growth				0.520	0.18	2.89	0.004
Psychology students (N = 199)	0.146	17.9	< .001				
(Intercept)				40.519	3.6589	11.07	< .001
Agreeableness				0.378	0.081	4.67	< .001
Amotivation				−0.416	0.139	−2.99	0.003
Philology students (N = 163)	0.157	8.52	< .001				
(Intercept)				24.94	5.0697	4.92	< .001
Extraversion				0.196	0.0702	2.79	0.006
Openness				0.437	0.1129	3.87	< .001
Intrinsic cognition motivation				0.504	0.2944	1.71	0.089
Achievement motivation				−0.477	0.2461	−1.94	0.055

Table 6

Best predictor regression models for <i>Cognitive Subscale</i> of ATDETS-US							
Sample/Variable	Summary of Model			Coefficients			
	R ² _{adj}	F	p-Value	Estimate	Std. Error	t-Value	p-Value
Total sample (N = 362)	0.22	18	< .001				
(Intercept)				19.052	3.4861	5.47	< .001
Openness				0.231	0.0688	3.36	< .001
Agreeableness				0.176	0.0536	3.28	0.001
Conscientiousness				0.143	0.048	2.98	0.003
Intrinsic cognition motivation				0.473	0.1848	2.56	0.011
Achievement motivation				−0.425	0.1532	−2.77	0.006
Motivation for personal growth				0.438	0.1794	2.44	0.015
Psychology students (N = 199)	0.294	12.8	< .001				
(Intercept)				8.273	5.6477	1.46	0.145
Openness				0.213	0.0973	2.19	0.03
Agreeableness				0.326	0.0706	4.61	< .001
Conscientiousness				0.166	0.0637	2.61	0.01
Intrinsic cognition motivation				0.487	0.2334	2.09	0.038
Achievement motivation				−0.327	0.1947	−1.68	0.094
Motivation for personal growth				0.46	0.2217	2.08	0.039
External regulation				0.268	0.1296	2.07	0.04
Philology students (N = 163)	0.184	19.3	< .001				
(Intercept)				25.611	4.2261	6.06	< .001
Openness				0.341	0.0982	3.47	< .001
Intrinsic cognition motivation				0.591	0.158	3.74	< .001

Table 6 shows that the best predictor model for Cognitive Subscale of ATDETS-US predicts 22.0% of the variance in the total sample, 29.4% in Psychology students and 18.4% in Philology students. Openness and Intrinsic cognition motivation are significant positive predictors in all samples. Agreeableness, Conscientiousness, Intrinsic cognition motivation and Motivation for personal growth (with positive impact), and Achievement motivation (with negative impact) are significant predictors in the total sample and subsample of psychologists. External regulation is positive significant predictor only in the Psychology subsample. In this case, two significant positive predictors of the cognitive component of the students' ATDETs coincide in the subsamples of psychologists and philologists, however, in the subsample of psychologists there are more significant predictors, which shows similarity with the total sample.

Table 7

Sample/Variable	Summary of Model			Coefficients			
	R ² _{adj}	F	p-Value	Estimate	Std. Error	t-Value	p-Value
Total sample (N = 362)	0.151	22.3	<.001				
(Intercept)				26.68	2.8729	9.29	<.001
Agreeableness				0.17	0.0548	3.1	0.002
Conscientiousness				0.124	0.0492	2.52	0.012
Motivation for personal growth				0.556	0.1122	4.95	<.001
Psychology students (N = 199)	0.188	16.3	<.001				
(Intercept)				22.887	3.7239	6.15	<.001
Agreeableness				0.267	0.0698	3.82	<.001
Conscientiousness				0.168	0.0642	2.62	0.009
Motivation for personal growth				0.463	0.1434	3.23	0.001
Philology students (N = 163)	0.169	12	<.001				
(Intercept)				22.525	4.7569	4.74	<.001
Extraversion				0.149	0.0658	2.27	0.025
Openness				0.197	0.1063	1.86	0.065
Intrinsic cognition motivation				0.628	0.1716	3.66	<.001

Table 7 shows that the best predictor model for Behavioral Subscale of ATDETS-US predicts 15.1% of the variance in the total sample, 18.8% in Psychology students and 16.9% in Philology students. None of the significant predictors coincided in the three analyzed samples, however, in this case, significant positive predictors (Agreeableness, Conscientiousness, and Motivation for personal growth) completely coincide in the total sample and the subsample of psychologists. Respectively, Extraversion, Openness, and Intrinsic cognition motivation are positive predictors only in the Philology subsample.

Table 8 shows that the best predictor model for the Total Indicator of ATDETS-US predicts 21.4% of the variance in the total sample, 25.6% in Psychology students and 20.6% in Philology students. Openness is significant positive predictor in all samples. Agreeableness, Conscientiousness, and Motivation for personal growth are significant positive predictors in the total sample and subsample of psychologists. Intrinsic cognition motivation is positive predictor in the total sample and in the Philology subsample. Achievement motivation is negative significant predictor only in the total sample.

Table 8

Best predictor regression models for the Total Indicators of ATDETS-US

Sample/Variable	Summary of Model			Coefficients			
	R ² _{adj}	F	p-Value	Estimate	Std. Error	t-Value	p-Value
<i>Total sample (N = 362)</i>	0.214	17.4	< .001				
(Intercept)				64.945	9.536	6.81	< .001
Openness				0.667	0.188	3.55	< .001
Agreeableness				0.521	0.147	3.55	< .001
Conscientiousness				0.430	0.131	3.28	0.001
Intrinsic cognition motivation				0.968	0.505	1.91	0.056
Achievement motivation				–1.241	0.419	–2.96	0.003
Motivation for personal growth				1.316	0.491	2.68	0.008
<i>Psychology students (N = 199)</i>	0.256	18.1	< .001				
(Intercept)				55.17	12.998	4.24	< .001
Openness				0.492	0.266	1.85	0.066
Agreeableness				0.974	0.188	5.17	< .001
Conscientiousness				0.443	0.173	2.56	0.011
Motivation for personal growth				1.139	0.41	2.78	0.006
<i>Philology students (N = 163)</i>	0.206	15	< .001				
(Intercept)				72.72	12.007	6.06	< .001
Extraversion				0.387	0.166	2.33	0.021
Openness				0.961	0.268	3.58	< .001
Intrinsic cognition motivation				1.251	0.433	2.89	0.004

Discussion

The purpose of present exploratory study is to identify differences both in the ATDETs and its components based on the Tripartite Model of Attitudes, and in the correlation of personality traits and academic motivation with the ATDETs between Psychology and Philology university students. Summarizing the results of the study, we must state the assumptions we put forward were only partially confirmed.

Firstly, our study did not reveal significant differences in the ATDETs and its components between Psychology and Philology university students. This contradicts the findings of most previous studies that compared the attitudes towards DETs between university students from different fields of study (Abdullah et al., 2015; Novikova & Bychkova, 2020; Vladova et al., 2021). We believe that the predominance of similarities in ATDETs in the subsamples we compared is explained by the fact that these students study not only at the same university, but also at the same faculty, and are also first-year students studying many of the same general education disciplines. The similarity between the studied subsamples of university students was also manifested in the absence of significant differences between them in the severity of types of academic motivation and personality traits (except for Openness).

Secondly, present study shows that the nature of correlations between ATDETs and its components with types of academic motivation are dominated by similarities among the Psychologist and Philologists subsamples, while in the correlations between these attitudes and personality traits, more differences were revealed between the studied subsamples. In both subsamples, two types of internal motivation (Intrinsic cognition motivation and Motivation for personal growth) are

most closely positively related to indicators of ATDETs and its components, and Amotivation is negatively related to these indicators. It is important to note that of the ATDETs components in both samples, the cognitive and behavioral components are more closely related to the types of academic motivation. Accordingly, both Psychology students and Philology students, who are more driven to learn and develop personally throughout the educational process, are better aware and comprehend the capabilities of DETs, have better command of digital devices and technologies in the process of studying at the university, and have a better ATDETs in general.

At the same time, amotivated students of both subsamples, on the contrary, have a much worse ATDETs and the possibilities of their use in the educational process. This nature of correlations is fully consistent with the generally accepted provisions on the important role of intrinsic motivation in the learning process (in which DETs are one of the possible means), as well as with the data of previous studies (Al-Said, 2023; Bovermann et al., 2018; Gustiani, 2020; Novikova & Bychkova, 2022; Novikova et al., 2022b).

Among the personality traits, Agreeableness and Conscientiousness are positively associated with ATDETs in a subsample of Psychology students, and Extraversion and Openness are positively associated with these attitudes in a subsample of Philology students. In our opinion, these correlations reflect the specifics of students' training in the compared fields of study: (1) the most important professionally significant qualities for psychologists are empathy and focus on other people (aspects of Agreeableness), and Conscientiousness is necessary for Psychology students when they mastering natural science and mathematical disciplines, including using DETs; (2) general activity, including verbal activity, is important for Philology students for analyzing various texts and discussing them in classes (Extraversion), and Openness (cognitive activity, curiosity, creativity, etc.) is the only personality trait for which differences were identified in our study when comparing subsamples (significantly higher among Philology students). Overall, these findings are consistent with previous research that has shown differences in both the expression of personality traits and their correlations with attitudes toward DETs (Belinskaya & Fedorova, 2020; Bhagat et al., 2019; Cohen & Baruth, 2017; Firat, 2022; Keller & Karau, 2013; Novikova et al., 2022b; Peng & Dutta, 2023; Quigley et al., 2022; Rivers, 2021; Rivers, 2022; Staller et al., 2021). However, a more detailed comparison is difficult due to the fact that different research studied students from different forms of study, years of study, fields of study, as well as from different countries and universities.

Thirdly, this study revealed that both some personality traits and some types of academic motivation are significant predictors of the students' ATDETs and could explain from 13 to 22% of its variance. Regression analysis confirmed that the most universal predictors with a positive impact of the ATDETs and its components are Agreeableness, Conscientiousness and Motivation for personal growth in the subsample of psychologists, and Openness, Extraversion and Intrinsic cognition motivation in the subsample of philologists. It is important to note that

Neuroticism and extrinsic academic motivation were not significant predictors of the ATDETs in both subsamples. As we noted above, the identified significant correlations and especially significant predictors in both students' subsamples emphasize the specifics of student learning in the fields of study under consideration.

Thus, it can be argued that the differences between Psychology students and Philology students are more pronounced not in the absolute expression of personality traits (except for Openness), types of academic motivation, and the ATDETs, but in the associations of these variables to each other in each of the subsamples. In general, our results that different personality traits and different types of academic motivation can be significant predictors of the attitudes towards DETs among university students of different fields of study correspond to the conclusions of previous research (Al-Said, 2023; Keller & Karau, 2013; Novikova et al., 2022b; Quigley et al., 2022), however, a more detailed comparison is difficult, since previous studies usually used other diagnostic tools and compared students from other fields of study.

There are several *limitations* to our study that should be taken into account when evaluating its results and conducting future research in this area. Firstly, the main limitation is female-to-male ratio in the sample in which female students predominate, but this is consistent with the gender distribution in university students' populations in Psychology and Philology. Secondly, the limitation is that university students from only two fields of study, only first-year students, and only students from one University were studied, but in this research this helped to equalize the subsamples in terms of basic socio-demographic indicators. Thirdly, the possible limitation is the measure used to collect the data. The university students ATDETs can be measured with various tools, the most popular being self-questionnaires. However, there is a need to use more objective methods, for example, experts' and peers' assessments. The next limitation is a certain lack of prior research studies on ATDETs predictors based on the Tripartite Model of Attitudes in university students in Russian psychology, so it is difficult to compare our results with other researchers' data.

Accordingly, summing up all of the findings and limitations of our research, the prospects for further research are associated with balancing the samples by the female-to-male ratio and expanding its by students from different Russian universities, different fields, degrees, forms, and years of study and with the use of additional methods for students' attitudes towards DETs measurement (for example, expert assessment by teachers and classmates).

Thus, despite some limitations, results of the present research confirm the need to take into account the psychological features of students when implementing and applying digital technologies in education. Based on the results of the study, we plan to develop recommendations for psychological support for Psychology students and Philology students to improve and optimize their attitude towards digital technologies, which will inevitably be increasingly used in education in the future.

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APPENDIX

Attitudes towards DETs Scale for University Students (ATDETS-US)

Dear student!

Please answer the questions below regarding the use of digital technologies in university education. Digital technologies in this survey are understood in a very broad sense: as digital (electronic) educational materials (electronic textbooks, presentations, assignments, etc.), digital educational resources (electronic databases, libraries, search resources, etc.), digital educational systems (LMS, TUIS, etc.), digital platforms used for training (ZOOM, MS Teams, etc.), and use of AI and a digital (virtual) educational environment. Try to be sincere. Responses will be processed in aggregate form and the data will be used for scientific purposes only.

- 1 – Strongly disagree
- 2 – Rather disagree
- 3 – Something in between
- 4 – Rather agree
- 5 – Strongly agree

№	Item	1	2	3	4	5
<i>Please rate your emotions and feelings towards digital technologies in university education.</i>						
1	I like that there are modern digital devices and technologies that can be used in the educational process.					
2	I have a negative attitude towards the possibility of using digital devices and technologies in seminars, even for educational purposes.					
3	I am pleased that digital devices and technologies can be used to pass certifications and exams.					
4	I have a positive attitude towards the opportunities provided by social networks and instant messengers for discussing various issues related to education.					
5	I am glad that in social networks you can find out the news of student life.					
6	I have a negative attitude towards the use of multimedia presentations in the educational process.					
7	I like that there is now an electronic form for submitting homework.					
8	I like that digital technologies can be applied to seminars and workshops online.					
9	I have a positive attitude to the possibility of receiving remote consultations from teachers and supervisors.					
10	I am pleased with the opportunity to attend online lectures in the academic disciplines of my field of study.					
11	I enjoy getting to know the possibilities of new digital educational technologies.					
12	I am glad that now there is an opportunity to take online courses in areas of interest to me on educational platforms and in other universities.					

№	Item	1	2	3	4	5
<i>Please rate your perceptions and knowledge regarding the possibilities of digital technologies in university education.</i>						
13	I am familiar with the principles of using digital devices and technologies in seminars for educational purposes.					
14	I am new to the rules for submitting homework electronically.					
15	I am aware of the schedule of remote consultations with teachers and supervisors.					
16	I have an idea about the features of new digital educational technologies.					
17	I know the main possibilities and limitations of the use of modern digital devices and technologies in the educational process.					
18	I understand that the use of digital devices and technologies in assessments and examinations has its advantages and disadvantages.					
19	I am aware of the advantages and disadvantages of discussing various educational issues and problems in social networks and instant messengers.					
20	I know well how to use social networks to find out the news of student life.					
21	I am not familiar with the basic rules and principles of creating and using multimedia presentations in the educational process.					
22	I have an understanding of the advantages and disadvantages of using digital technologies to conduct seminars and workshops online.					
23	I have a good idea of the pros and cons of online lectures in the academic disciplines of my field of study.					
24	I am not familiar with the possibilities of studying online courses in the disciplines that interest me on educational platforms and in other universities.					
<i>Please rate your level of proficiency with digital devices and technologies during your university studies.</i>						
25	I constantly use social networks in order to find out the news of student life.					
26	I have extensive experience in creating and using multimedia presentations in the educational process.					
27	I often encounter difficulties in seminars and workshops held online.					
28	It is difficult for me to absorb the material in online lectures in the academic disciplines of my field of study.					
29	I have already taken or am ready to take an online course in the field of interest to me on external educational platforms or in other universities in the near future.					
30	I constantly use digital devices and technologies in the process of studying at the university.					
31	I have experience passing certifications and passing exams at a university using digital devices and technologies.					
32	I often discuss educational issues and problems on social networks and instant messengers.					
33	I prefer to submit my homework in electronic form rather than in "paper" form.					
34	I often consult with teachers and supervisor through digital technologies.					
35	I constantly master and apply new digital educational technologies.					
36	I often use digital devices and technology in seminars for educational purposes.					

Key

Answers are scored:

«Strongly agree» – 5 points,

«Rather agree» – 4 points,

«Something in between» – 3 points,

«Rather disagree» – 2 points,

«Strongly disagree» – 1 point.

Subscales	Item
Emotional Subscale	1; 2*; 3; 4; 5; 6*; 7; 8; 9; 10; 11; 12
Cognitive Subscale	13; 14*; 15; 16; 17; 18; 19; 20; 21*; 22; 23; 24*
Behavioral Subscale	25; 26; 27*; 28*; 29; 30; 31; 32; 33; 34; 35; 36
ATDETS-US	1; 2*; 3; 4; 5; 6*; 7; 8; 9; 10; 11; 12; 13; 14*; 15; 16; 17; 18; 19; 20; 21*; 22; 23; 24*; 25; 26; 27*; 28*; 29; 30; 31; 32; 33; 34; 35; 36

Note: reverse items that require recoding are marked with an asterisk (*): score 1 changes to 5, 2 to 4, 3 does not change, 4 to 2, 5 to 1.

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Исследовательская статья

Отношение к цифровым образовательным технологиям у студентов разных направлений обучения: роль академической мотивации и личностных черт

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Аннотация. Многочисленные исследования последних лет посвящены плюсам и минусам использования цифровых технологий в образовании. Установлено, что трудности, связанные с цифровой трансформацией образования, определяются не только объективными причинами, но и психологическими особенностями участников образовательного процесса и их отношением к цифровым образовательным технологиям (ЦОТ). Цель исследования — выявление различий как в отношении к ЦОТ, так и во взаимосвязях показателей этого отношения с личностными чертами и академической мотивацией у студентов разных направлений подготовки. В исследовании приняли участие 362 студента (90,05 % девушки), в том числе 199 студентов-психологов и 163 студента-филолога РУДН. Отношение студентов к ЦОТ определялось с помощью авторской методики «Шкала диагностики отношения студентов к ЦОТ», разработанной на основе трехкомпонентной модели аттитюда. Академическая мотивация студентов измерялась с помощью опросника «Шкалы академической мотивации», основанного на теории самодетерминации Деси и Райана. Личностные черты диагностировались с помощью «Пятифакторного опросника». Результаты исследования показали, что различия между студентами психологического и филологического направлений подготовки проявляются не столько в их отношении к ЦОТ, сколько в корреляциях и регрессионных моделях изучаемых переменных. Наиболее значимыми предикторами отношения к ЦОТ у студентов-психологов являются доброжелательность (согласие), добросовестность и мотивация саморазвития, у студентов филологов — открытость, экстраверсия и познавательная мотивация.

Ключевые слова: цифровизация; электронное обучение; студенты; трехкомпонентная модель аттитюда; отношение к цифровым образовательным технологиям; академическая мотивация; теория самодетерминации; Пятифакторная модель; черты личности

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ПРИЛОЖЕНИЕ

Шкала отношения студентов к ЦОТ

Уважаемый студент!

Ответьте, пожалуйста, на приведенные ниже вопросы относительно использования цифровых технологий в высшем образовании. Цифровые технологии в данном опросе понимаются предельно широко: как цифровые (электронные) учебные материалы

(электронные учебники, презентации, задания и др.), цифровые образовательные ресурсы (электронные базы данных, библиотеки, поисковые ресурсы и т.п.), цифровые образовательные системы (LMS, ТУИС и т.п.), цифровые платформы, используемые для обучения (ZOOM, MS Teams, и др.), а также использование ИИ и цифровой (виртуальной) образовательной среды. Постарайтесь быть искренними. Ответы будут обрабатываться в обобщенном виде и данные будут использоваться только в научных целях.

- 1 – Совершенно не согласен
- 2 – Скорее не согласен
- 3 – Нечто среднее
- 4 – Скорее согласен
- 5 – Полностью согласен

№	Утверждение	1	2	3	4	5
<i>Пожалуйста, оцените свои эмоции и чувства по отношению к цифровым технологиям в высшем образовании.</i>						
1	Мне нравится, что существуют современные цифровые устройства и технологии, которые можно использовать в учебном процессе.					
2	Я негативно отношусь к возможности использования цифровых устройств и технологий на семинарских занятиях даже в учебных целях.					
3	Я доволен, что цифровые устройства и технологии можно использовать при прохождении аттестаций и сдаче экзаменов.					
4	Я позитивно отношусь к возможностям, которые предоставляют социальные сети и мессенджеры для обсуждения различных вопросов, связанных с учебой.					
5	Я рад, что в социальных сетях можно узнавать новости студенческой жизни.					
6	Я негативно отношусь к использованию мультимедийных презентаций в учебном процессе.					
7	Мне нравится, что теперь существует электронная форма сдачи домашних заданий.					
8	Мне нравятся, что цифровые технологии можно применять для проведения семинаров и практических занятий онлайн.					
9	Я позитивно отношусь к возможности получать дистанционные консультации у преподавателей и научных руководителей.					
10	Меня радует возможность посещать онлайн лекции по учебным дисциплинам моего направления обучения.					
11	Я получаю удовольствие от знакомства с возможностями новых цифровых образовательных технологий.					
12	Я рад, что теперь есть возможность проходить онлайн-курсы по интересующим меня направлениям на образовательных платформах и в других вузах.					
<i>Пожалуйста, оцените свои представления и знания относительно возможностей цифровых технологий в высшем образовании.</i>						
13	Я знаком с принципами использования цифровых устройств и технологий на семинарских занятиях в учебных целях.					
14	Я плохо знаком с правилами сдачи домашних заданий в электронной форме.					
15	Я в курсе расписания дистанционных консультаций с преподавателями и научными руководителями.					
16	Я имею представление об особенностях новых цифровых образовательных технологий.					
17	Я знаю основные возможности и ограничения применения современных цифровых устройств и технологий в учебном процессе.					
18	Я понимаю, что использование цифровых устройств и технологий при проведении аттестаций и экзаменов имеет свои достоинства и недостатки.					
19	Я осознаю преимущества и недостатки обсуждения различных учебных вопросов и проблем в социальных сетях и мессенджерах.					
20	Я хорошо знаю, как использовать социальные сети для того, чтобы узнавать новости студенческой жизни.					

№	Утверждение	1	2	3	4	5
21	Я не знаком с основными правилами и принципами создания и использования мультимедийных презентаций в учебном процессе.					
22	Я имею представление о преимуществах и недостатках применения цифровых технологий для проведения семинаров и практических занятий онлайн.					
23	Я хорошо представляю себе плюсы и минусы онлайн-лекций по учебным дисциплинам моего направления обучения.					
24	Я не знаком с возможностями обучения на онлайн-курсах по интересующим меня дисциплинам на образовательных платформах и в других вузах.					
<i>Пожалуйста, оцените, насколько Вы владеете цифровыми устройствами и технологиями в процессе обучения в вузе.</i>						
25	Я постоянно использую социальные сети для того, чтобы узнавать новости студенческой жизни.					
26	Я имею большой опыт создания и использования мультимедийных презентаций в учебном процессе.					
27	Я часто сталкиваюсь с трудностями на семинарах и практических занятиях, проводимых в онлайн формате.					
28	Мне трудно усваивать материал на онлайн-лекциях по учебным дисциплинам моего направления обучения.					
29	Я уже прошел или готов в ближайшее время пройти онлайн-курс по интересующему меня направлению на внешних образовательных платформах или в других вузах.					
30	Я постоянно пользуюсь цифровыми устройствами и технологиями в процессе обучения в вузе.					
31	Я имею опыт прохождения аттестаций и сдачи экзаменов в вузе с использованием цифровых устройств и технологий.					
32	Я часто обсуждаю учебные вопросы и проблемы в социальных сетях и мессенджерах.					
33	Я предпочитаю сдавать домашние задания в электронной форме, а не в «бумажной» форме.					
34	Я часто консультируюсь с преподавателями и научным руководителем посредством цифровых технологий.					
35	Я постоянно осваиваю и применяю новые цифровые образовательные технологии.					
36	Я часто использую цифровые устройства и технологии на семинарских занятиях в учебных целях.					

Ключ

Ответы испытуемых оцениваются баллами:

«Полностью согласен» – 5 баллов,

«Скорее согласен» – 4 балла,

«Нечто среднее» – 3 балла,

«Скорее не согласен» – 2 балла,

«Совершенно не согласен» – 1 балл.

Шкалы опросника	Пункты опросника
Эмоциональный компонент	1; 2*; 3; 4; 5; 6*; 7; 8; 9; 10; 11; 12
Когнитивный компонент	13; 14*; 15; 16; 17; 18; 19; 20; 21*; 22; 23; 24*
Поведенческий компонент	25; 26; 27*; 28*; 29; 30; 31; 32; 33; 34; 35; 36
Отношение к ЦОТ	1; 2*; 3; 4; 5; 6*; 7; 8; 9; 10; 11; 12; 13; 14*; 15; 16; 17; 18; 19; 20; 21*; 22; 23; 24*; 25; 26; 27*; 28*; 29; 30; 31; 32; 33; 34; 35; 36

Примечание: звездочкой (*) отмечены пункты, требующие перекодирования: балл 1 меняется на 5, 2 – на 4, 3 не меняется, 4 – на 2, 5 – на 1.

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