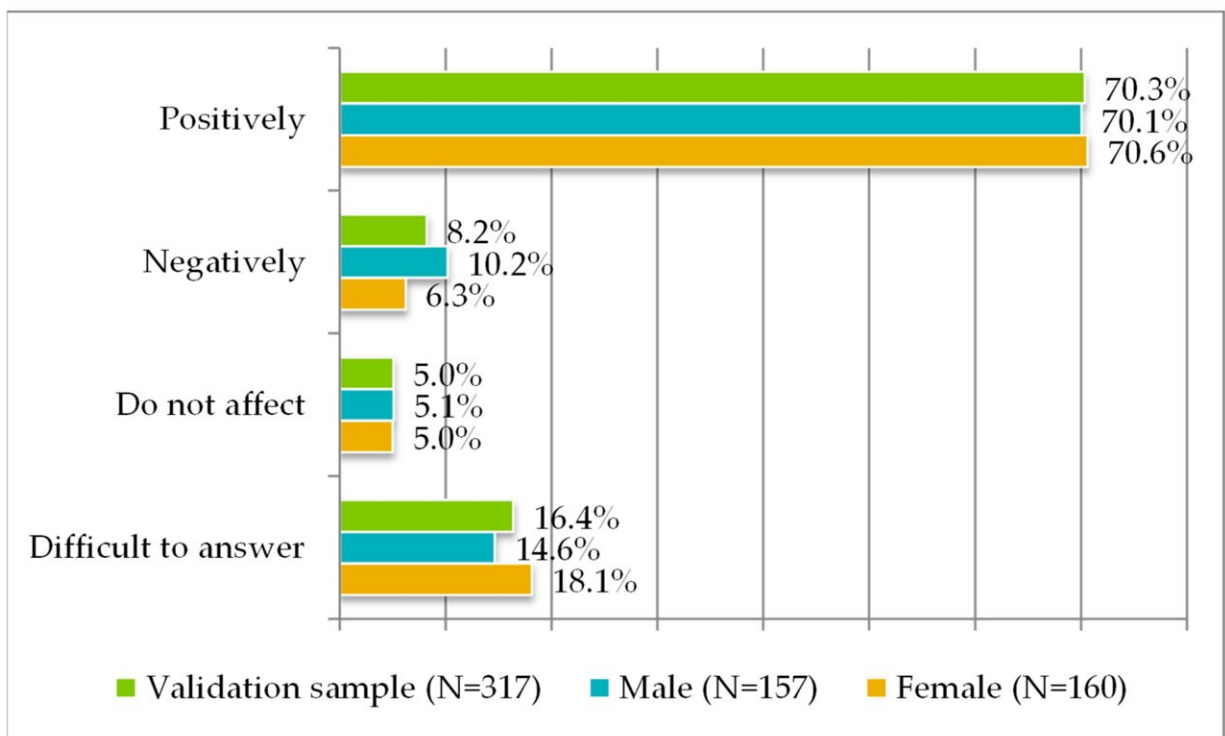


# Psychologists create scale for students' attitudes toward digital educational technologies

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Frequency of answer to a question: “How do you think digital technologies affect the learning process?” (in %). Credit: *Computers* (2023). DOI: 10.3390/computers12090176

RUDN University psychologists have developed a questionnaire to

determine how students feel about digital educational technologies. It is one of the first such scales in Russia. The [results](#) were published in the journal *Computers*.

The success of introducing [digital tools](#) into education largely depends on how the main participants in the educational process (students and teachers) approach the idea. Questionnaires and scales are used to assess their attitude toward digitalization, identify weaknesses, and adjust educational policies. RUDN University psychologists proposed the first scale in Russia, developed based on a three-component model of social attitudes, which will help determine the attitude of university students to digital educational technologies (DET).

"The attitude of students towards digital educational technologies is an important psychological factor. They can hinder or facilitate the introduction of digital technologies into the educational process. Foreign researchers have developed many tools for diagnosing students' attitudes toward various aspects of digitalization of education. However, there are very few such techniques in Russian.

"My colleagues and I have been researching this problem since 2018; even before the pandemic, we developed the first version of our methodology. However, the drastic changes that occurred in the education system in connection with the massive transition to distance learning during quarantine required significantly changing the questionnaire using a different methodology," said Irina Novikova, Ph.D., Associate Professor of the Department of Psychology and Pedagogy of RUDN University.

The proposed scale is based on the three-component model of attitude (social set) widely known in psychology, as well as taking into account the experience of similar scales in foreign languages. It was called ATDETS-US (Attitudes Towards DET Scale for University Students).

RUDN psychologists verified and tested the new scale in a study on 680 undergraduate and graduate students from Russian universities. To check the validity and reliability of the scale, the authors used generally accepted modern statistical methods: for example, Cronbach's alpha and McDonald's omega coefficients, correlation, and factor analysis.

The ATDETS-US questionnaire includes three components: emotional, cognitive, and behavioral. It contains 36–45 statements, agreement with which must be assessed on a scale from 1 to 5. The results of diagnosing attitudes towards digital educational technologies among girls and boys have significant differences (girls, on average, have a better attitude towards digital education, especially on the emotional scale), so standardization and data normalization were carried out by RUDN psychologists separately for these two groups. The developed norms can be used in subsequent studies to assess the severity of attitudes towards DLC among students from different universities and areas of training.

"Further research using the developed methodology will analyze the factors and predictors of students' attitudes towards the DTC. For example, we propose to consider academic motivation, [personality traits](#), psychological well-being, and other personality characteristics as predictors of attitudes toward digital technologies in education.

"It is also interesting to identify the relationship between the [attitude](#) toward the COT and academic performance. The data obtained can be used to develop recommendations for possible correction of the processes of digitalization of higher [education](#). We plan to develop a similar scale for diagnosing attitudes towards the COT for university teachers," says Irina Novikova, Ph.D., Associate Professor of the Department of Psychology and Pedagogy of the RUDN University.

**More information:** Irina A. Novikova et al, Attitudes towards Digital Educational Technologies Scale for University Students: Development

and Validation, *Computers* (2023). DOI: [10.3390/computers12090176](https://doi.org/10.3390/computers12090176)

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