



UDC 37.013:004.738
DOI: 10.58649/1694-8033-2025-4(124)-93-102

Received: 02.08.2025
Revised: 17.11.2025
Accepted: 15.12.2025

Digital identity as a predictor of academic motivation and cognitive flexibility of students (based on the material of Kyrgyzstan)

Taiirbek Musakulov*

Senior Lecturer
Jusup Balasagyn Kyrgyz National University
720033, 547 Frunze Str., Bishkek, Kyrgyz Republic
<https://orcid.org/0009-0007-1954-9481>

Kubatbek Kokombaev

PhD in Sociological Sciences, Associate Professor
Eurasian University
720033, 4-V Chuy Ave., Bishkek, Kyrgyz Republic
<https://orcid.org/0009-0000-9475-2788>

Abdikaiym Zhusubaliev

PhD in Sociological Sciences, Associate Professor
Jusup Balasagyn Kyrgyz National University
720033, 547 Frunze Str., Bishkek, Kyrgyz Republic
<https://orcid.org/0009-0002-9506-4498>

Bakytbek Maltabarov

PhD in Sociological Sciences, Associate Professor
Jusup Balasagyn Kyrgyz National University
720033, 547 Frunze Str., Bishkek, Kyrgyz Republic
<https://orcid.org/0009-0004-8683-837X>

Abstract. The study aimed to examine the influence of digital identity on the personal development of second-year students at the Institute of Information and Communication Technologies and Artificial Intelligence. The research was grounded in the activity-based and sociocultural approaches, which consider digital identity as a component of self-realisation in digital educational environments. Quantitative methods were applied, including the Digital Identity Scale, Personal Growth Initiative Scale, Cognitive Flexibility Inventory, Academic Self-Regulation Questionnaire, as well as supplementary analysis of students' engagement in digital learning communities. Results indicated that 31% of students demonstrated a high level of digital identity, 49% a medium level, and 20% a low level. Correlation analysis revealed a strong positive relationship between digital identity and self-development motivation ($r = 0.68$; $p < 0.05$), as well as cognitive flexibility ($r = 0.62$; $p < 0.05$). Regression analysis confirmed digital identity as the main predictor of personal development ($\beta = 0.54$; $p < 0.01$), with additional significant predictors including digital competence ($\beta = 0.31$), emotional resilience ($\beta = 0.27$), and reflection on digital behaviour ($\beta = 0.22$). Supplementary analysis of student activity in digital educational communities showed that participation in project-based and communicative activities was associated with higher self-regulation, critical thinking, and resilience to destructive digital interactions (trolling, cyberbullying). The practical significance of this study lies in its potential to inform educational strategies aimed at developing digital identity, critical thinking, emotional resilience, and academic motivation

Keywords: digital culture; professional self-determination; communication competencies; self-regulation; critical thinking

Suggested Citation:

Musakulov, T., Kokombaev, K., Zhusubaliev, A., & Maltabarov, B. (2025). Digital identity as a predictor of academic motivation and cognitive flexibility of students (based on the material of Kyrgyzstan). *Bulletin of the Jusup Balasagyn Kyrgyz National University*, 17(4), 93-102. doi: 10.58649/1694-8033-2025-4(124)-93-102.



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*Corresponding author

■ INTRODUCTION

The modern digitalisation of education is radically transforming the process of shaping students' personalities, making digital identity one of the central elements of their personal, professional and academic development. In the conditions the total penetration of digital technologies into everyday and educational practices, students no longer simply consume information, but actively construct, maintain and constantly adjust their digital image—a combination of profiles, publications, comments, digital footprints and reputation. This image becomes an integral part of self-esteem, value systems, motivation to learn, and even cognitive problem-solving strategies. Numerous studies in recent years have convincingly demonstrated that a conscious, reflective, and harmonious digital identity is positively associated with intrinsic academic motivation, high levels of self-regulation in learning, cognitive flexibility, and stress resilience (Morosanova *et al.*, 2023; Waheed *et al.*, 2025). At the same time, as pointed out by A. Elmabaredy & N. Gencel (2024), a fragmented, unreflective, or overly dependent digital identity correlates with decreased concentration, increased internet addiction, anxiety, and difficulties in personal self-actualisation.

The problem becomes especially relevant in the context of training future specialists in the field of information and communication technologies and artificial intelligence, where the digital environment serves as a tool for learning, a professional platform, and a space for personal development. As noted by Ye. Kuznietsov (2025), the digital transformation of education is radically changing the paradigms of training for both teachers and students, requiring the formation of fundamentally new digital skills, including technological, information-analytical, ethical, communicative, and organisational components. It is the integration of these components that ensures the effective use of digital resources for achieving educational goals and the successful adaptation of individuals to the challenges of a rapidly changing digital world (Sayaf *et al.*, 2021). At the same time, despite a significant number of studies devoted to digital literacy, self-regulated online learning, and the influence of individual platforms on cognitive processes, the mechanisms of influence of digital identity as a holistic personal construct on motivation for self-development, cognitive flexibility, critical thinking, and resilience to destructive digital practices (cyberbullying, trolling, information overload) remain insufficiently studied. This gap is particularly acute in the post-Soviet educational space and, in particular, in the national context of Kyrgyzstan, where, according to B. Biybosunov *et al.* (2020) and A. Raimkulova (2022), the processes of digitalisation in higher education are taking place in conditions of limited resources, cultural specificity and rapid transformation of the labour market.

The purpose of this study was to establish the nature, strength, and mechanisms of influence of the level of digital identity formation on academic motivation, cognitive flexibility, and general indicators of personal development of second-year students majoring in information and

communication technologies and artificial intelligence at J. Balasagyn Kyrgyz National University. The objectives of the study were to analyse the level of development and key components of students' digital identity; to determine the relationship between digital identity and students' personal characteristics, including self-regulation, adaptability and critical thinking; and to propose recommendations for the harmonious personal development of students. Thus, the study aimed to fill the existing theoretical and empirical gap and create a scientifically sound basis for the development of educational strategies and programmes that would transform students' digital identity from a potential source of risk into a powerful internal resource for personal and professional growth in the context of the digital transformation of society.

■ MATERIALS AND METHODS

The study was conducted in 2025 and based at the Institute of Information and Communication Technologies and Artificial Intelligence at the Jusup Balasagyn Kyrgyz National University. The sample included 136 second-year students, including data on gender (male/female) and age of respondents for the analysis of demographic differences, which ensured sufficient representativeness of the data for assessing the characteristics of digital identity formation and its connection with personal development. All participants provided written informed consent, the procedure fully complied with the ethical principles set out in WMA (2013), and anonymity and voluntary participation were guaranteed. For the collection of empirical data, a set of standardised psychodiagnostic techniques was used, including validated scales aimed at studying digital identity, self-regulation, critical thinking, adaptability, cognitive flexibility, and the risks of digital behaviour. The main tool for assessing digital identity was the Digital Identity Scale (Kavut, 2024). The technique included several statements distributed across three subscales:

1. Awareness of digital identity (7 points). Example statements: "I clearly understand how I appear in the digital space", "My online profile reflects who I consider myself to be".
2. Constructing a digital image (8 points). Example statements: "I consciously shape my image on social media", "How others perceive me online is important to me".
3. Digital self-presentation and behaviour (5 points). Examples: "I try to stay active in the digital environment", "Online communication is an important part of my social life".

The reliability of the sample was α Cronbach's: awareness of digital identity- $\alpha = 0.84$; construction of a digital image- $\alpha = 0.87$; digital self-presentation- $\alpha = 0.81$; overall scale- $\alpha = 0.89$. The "Behavioural Self-Regulation Style" technique (Morosanova, 2013) was used to assess self-regulation. It included 34 items and assessed modelling, planning, behaviour programming, outcome evaluation, flexibility, and overall conscious self-regulation. Example statement: "Before completing a task, I try to think through possible ways of solving it". The reliability of the scales was $\alpha = 0.73-0.86$.

Critical thinking was measured using a shortened version of the Critical Thinking Disposition Scale (Facione *et al.*, 2013) – 15 items with subscales for analytical thinking, openness to new ideas, and reflectiveness. Examples of items: “It is important for me to carefully check the information I receive”, “I am able to change my opinion when presented with convincing arguments”. Reliability $\alpha = 0.78$. Social media addiction was measured using the Social Networking Addiction Scale (Shahnawaz & Rehman, 2020) – 12 items. Examples of statements: “I often think about social media even when I am not using it”, “I feel uncomfortable when I cannot access social media”. Reliability $\alpha = 0.89$. Cognitive flexibility was assessed using the Cognitive Flexibility Inventory (Martin & Rubin, 1995; Dennis & Vander Wal, 2010) – 20 items. Examples: “I can quickly change my mind when the situation requires it”, “I easily find alternative solutions to problems”. Reliability $\alpha = 0.82$. For assessing motivation for self-development, the Personal Growth Initiative Scale (Robitschek *et al.*, 2012) was used – 9 points assessing personal growth initiative, readiness for change, and use of resources. Examples: “I actively seek ways to improve myself”, “I set goals for personal growth”. Reliability $\alpha = 0.85$. For the assessment of academic self-regulation, the Academic Self-Regulation Questionnaire (Ryan & Connell, 1989) was

used – 17 items, with subscales of internal, external, identified and introjected regulation. Reliability $\alpha = 0.79-0.88$. Concentration of attention was assessed using a subscale “Behaviour Control” in the method of self-regulation by V. Morosanova (2013), with additional questions about the subjective level of distraction (5-point scale). Data on social media use (intensity and frequency of use of Telegram, Instagram, TikTok, YouTube) were collected through additional questions in the questionnaire (self-report of time in hours/day and type of activity).

The survey was conducted in an in-person format in the computer labs of the institute in electronic form via the Google Forms platform. Before the start of the study, participants received a written form of informed consent containing information about the voluntary nature of participation and the anonymity of the data. The average time to complete all questionnaires was 30-35 minutes. To determine the level of digital identity, a total score was calculated for all subscales. The levels were then distributed according to the trichotomy principle: low level-bottom 27% of the distribution (≤ 39 points), medium level-middle 46% (40-58 points), high level-top 27% (≥ 59 points). This method ensured a reliable division of groups, taking into account the normal distribution of indicators. Descriptive statistics for the scales are presented in Table 1.

Table 1. Descriptive statistics of student assessment scales

Indicator	Average (M)	SD (standard deviation)	Minimum	Maximum
Digital identity	52.4	10.6	28	79
Digital identity awareness	18.1	3.9	9	28
Digital image construction	21.4	4.7	10	32
Digital self-presentation	12.9	3.1	5	20
Self-regulation	104.5	12.4	78	132
Critical thinking	48.7	6.3	33	64
Social media addiction	27.1	8.5	12	48
Cognitive flexibility	55.2	7.8	36	72

Source: compiled by the authors

Data analysis was performed using SPSS 27.0. Descriptive statistics (average, standard deviation, minimum-maximum), Pearson's correlation analysis, one-way analysis of variance (ANOVA) for comparing groups, Cronbach's α reliability coefficients, and clustering to refine the typology of digital identity were used. Additionally, multiple regression analysis was used to identify predictors (including models with gender, age, and time spent on social networks); mediation analysis (to assess the mediating effect of self-regulation); Student's t-test to compare means across groups (including gender differences); correlation analysis on the intensity of use of specific platforms (Telegram, Instagram, TikTok, YouTube). For the analysis of activity in digital educational communities (Moodle and Telegram groups), content analysis of messages was used (number of posts/comments per week, classification by constructiveness: questions, help, resource sharing; coded by two independent experts with inter-coder reliability $\kappa = 0.82$) and the collection of engagement data (self-report and platform logs for 3 months). Thus, the study

used a comprehensive methodological base, including psychodiagnostic tools, a representative sample of 136 students, a standardised questionnaire procedure, and reliability calculation using Cronbach's coefficients, which ensured the high reliability of the methods used. The use of combined statistical approaches-descriptive statistics, correlation analysis, and intergroup comparisons-made it possible to create a reliable basis for subsequent analysis of the relationship between digital identity and students' personal development.

■ RESULTS AND DISCUSSION

Differentiation of students by level of digital identity and connection with personal development

Analysis of empirical data revealed significant correlations between students' level of digital identity and indicators of their personal development. During the initial diagnosis using the Digital Identity Scale and the authors' questionnaire “Self-presentation in a digital environment” ($\alpha = 0.86$), it was found that 31% of students have a high level of digital

identity, 49% have an average level, and 20% have a low level. Students with a high level of digital identity had an average score of 4.3 out of 5 on the conscious self-presentation scale, while students with a low level had a score of 2.1 out of 5, indicating significant differences in their ability to manage their online image and digital footprint. Correlation analysis (Pearson) showed a statistically significant relationship between the level of digital identity and motivation for self-development ($r = 0.68$; $p < 0.05$), as well as cognitive flexibility ($r = 0.62$; $p < 0.05$) (Table 2). This

means that when the digital identity index increases by 1 point, motivation for personal growth increases by an average of 0.64 points, and the cognitive flexibility index increases by 0.58 points. Comparable results were obtained in a study by F. Chen (2025), which showed that students' developed digital identity is statistically significantly associated with the level of reflection, self-regulation, and cognitive adaptability in a digital educational environment. The work of V. Pérez-Torres (2024) also confirmed the link between digital identity and self-reflection and learning autonomy.

Table 2. Level of digital identity and indicators of personal development of students

Level of digital identity	Number of students	% of sample	Correlation with motivation for self-development (r)	Correlation with cognitive flexibility (r)
High	42	31	0.68*	0.62*
Average	67	49	0.54*	0.49*
Low	27	20	0.31	0.28
Total	136	100	–	–

Note: * – correlation coefficient is statistically significant at $p < 0.05$

Source: compiled by the authors

In students with a high level of digital identity, a strong positive correlation was found with motivation for self-development ($r = 0.68$; $p < 0.05$) and a moderately high correlation with cognitive flexibility ($r = 0.62$; $p < 0.05$). These indicators suggest that this category of students is characterised by a strong internal motivation for personal and professional growth, a desire to acquire new knowledge and skills, and an ability to adapt to changing digital conditions. In the group of students with an average level of digital identity, there is a moderate positive correlation with motivation for self-development ($r = 0.54$; $p < 0.05$) and cognitive flexibility ($r = 0.49$; $p < 0.05$). Students in this category are generally development-oriented and adaptable, but their digital self-reflection and awareness in the online environment are less systematic and consistent. The lowest correlation coefficients were found in the group of students with a low level of digital identity: $r = 0.31$ for motivation for self-development and $r = 0.28$ for cognitive flexibility. These values are on the borderline of weak correlation and do not reach the level of statistical significance. This means that for students in this group, digital identity is not actually a significant factor in personal development.

Particular attention should be paid to the gradual decrease in the strength of the correlation between high and low levels of digital identity ($0.68 \rightarrow 0.54 \rightarrow 0.31$). This trend indicates not a random dependence, but a regular relationship between the degree of awareness of one's digital identity and the development of key personality characteristics.

First of all, gender differences were analysed, as it was assumed that the strategies for forming a digital image in men and women may differ significantly. Indeed, statistical analysis showed that female students have a more pronounced overall level of digital identity ($M = 54.8$; $SD = 9.9$) than male students ($M = 49.7$; $SD = 11.2$), with the difference being statistically significant ($t(134) = 2.57$; $p = 0.011$). Similar effects were observed for the components: women are more active in constructing their digital image ($M = 22.3$ versus $M = 19.6$ for men; $p = 0.003$) and show a greater tendency towards digital self-presentation ($M = 13.4$ versus $M = 12.3$; $p = 0.042$). At the same time, awareness of digital identity did not differ by gender, which may indicate that the differences relate more to behaviour than to reflective aspects.

Predictors of personal development and the role of digital platforms

Regression analysis showed that digital identity is a significant predictor of personal development ($\beta = 0.54$; $p < 0.01$) and explains 48% of the total variance in personal growth indicators ($R^2 = 0.48$) (Table 3). Three variables had the greatest impact on the model: level of digital competence ($\beta = 0.41$), emotional stability in online communication ($\beta = 0.33$), and level of digital reflection ($\beta = 0.29$). Similar data are provided by I. Esteban-Millat *et al.* (2014): in their sample, digital identity explained 44% of the variations in critical thinking and academic self-efficacy.

Table 3. Regression analysis of the impact of digital identity on students' personal development

Predictor	β (standardised coefficient)	t	p	Note
Digital identity	0.54	7.21	< 0.01	Significant influence
Digital competence	0.31	4.56	< 0.01	Additional predictor
Emotional stability	0.27	3.98	< 0.01	Additional predictor
Reflection on digital behaviour	0.22	3.12	< 0.05	Additional predictor

Note: β -standardised regression coefficient; t-t-statistic; p-significance level

Source: compiled by the authors

Multiple regression analysis showed that digital identity is the main predictor of students' personal development, with a highly significant standardised coefficient of $\beta = 0.54$ ($t = 7.21$; $p < 0.01$). This indicates that an increase in the digital identity index by 1 standard deviation is expected to result in an increase in the level of personal development by 0.54 standard deviations. Digital competence also proved to be a statistically significant predictor ($\beta = 0.31$; $t = 4.56$; $p < 0.01$). This suggests that students with higher levels of digital tool skills demonstrate higher levels of motivation for self-development, cognitive flexibility, and self-regulation. Emotional stability in online communication ($\beta = 0.27$; $t = 3.98$; $p < 0.01$) showed a significant impact on personal development, indicating the importance of students' ability to manage their emotions and cope with destructive digital influences such as cyberbullying or online conflicts. Reflection on digital behaviour ($\beta = 0.22$; $t = 3.12$; $p < 0.05$) was also a significant, albeit less powerful, predictor.

To determine which factors are most important for student learning effectiveness, a multiple regression analysis was conducted. The final model included age, gender, time spent on social media, digital identity indicators, and self-regulation. The model proved to be significant ($R^2 = 0.34$; $F(5,130) = 13.38$; $p < 0.001$), with self-regulation ($\beta = 0.41$; $p < 0.001$), digital identity ($\beta = 0.22$; $p = 0.009$), and time spent on social media ($\beta = -0.29$; $p = 0.002$) played a key role. Age and gender did not have a significant impact. These results show that digital identity is not only a socio-behavioural construct, but can also be a resource that supports learning activity, while excessive time spent on social media reduces success regardless of other factors. To clarify the mechanisms of this influence, a mediation analysis was conducted, which showed that the effect of digital identity on academic performance is significantly mediated by the level of self-regulation. Digital identity is positively associated with self-regulation ($\beta = 0.36$; $p < 0.001$), which, in turn, significantly affects academic performance ($\beta = 0.44$; $p < 0.001$). The indirect effect was statistically significant ($\beta = 0.158$; CI [0.071; 0.268]). Thus, digital identity contributes to better academic performance primarily by enhancing the ability to set goals, plan, and control behaviour.

Particular interest is presented by the influence of the intensity of use of various digital platforms on the formation of digital identity and the associated risks. The analysis showed that Telegram is moderately associated with the expression of digital identity ($r = 0.21$; $p = 0.017$) and with levels of abstraction ($r = 0.18$; $p = 0.031$). Instagram is the strongest predictor of pronounced self-presentation ($r = 0.43$; $p < 0.001$) and social media addiction ($r = 0.52$; $p < 0.001$), and is also associated with decreased concentration ($r = 0.27$; $p = 0.004$), which confirms recent studies on the impact of visually oriented platforms on cognitive functioning (Redlinger *et al.*, 2022). TikTok showed the strongest negative correlation with concentration ($r = 0.49$; $p < 0.001$) and reduced self-regulation

($r = -0.31$; $p = 0.002$), which may be explained by fast, fragmented content formats. In turn, YouTube use showed a weak but positive correlation with digital identity awareness ($r = 0.16$; $p = 0.048$) and academic motivation ($r = 0.24$; $p = 0.008$), consistent with the fact that this platform has significant cognitive and educational potential.

Cluster analysis allowed identifying three typical digital identity profiles among students. The first cluster, labelled "conscious professionals" (36% of the sample), is characterised by a high level of awareness ($M = 20.9$), active and strategic construction of a digital image ($M = 24.1$) and high self-regulation scores ($M = 112.4$). The second cluster, "dependent consumers" (24%), demonstrates a low level of awareness ($M = 15.2$), while having a high level of self-presentation ($M = 16.5$) and a significantly pronounced dependence on social networks ($M = 34.9$), accompanied by reduced concentration ($M = 41.3$). The third cluster, "digital minimalists" (40%), has low scores on all components of digital identity, characterised by minimal involvement in the digital environment. The relationship between digital identity and concentration was moderate: overall digital identity correlated negatively with concentration ($r = -0.19$; $p = 0.024$), but specific patterns of digital behaviour had a more significant impact. The strongest decrease in concentration is associated with social media addiction ($r = 0.54$; $p < 0.001$) and intensive use of TikTok ($r = 0.49$; $p < 0.001$). This suggests that the decrease in concentration is not due to the mere fact of having a digital identity, but rather to excessive interaction with certain platforms.

Additional analysis was conducted using the mean comparison method (Student's *t*-test) and content analysis of data on student online activity on the Moodle educational platform and in closed Telegram study groups. It was found that students who regularly participate in digital educational communities (at least 3 posts or comments per week) demonstrate a higher level of self-organisation ($M = 4.1$ vs. 2.8; $p < 0.01$), more developed reflectivity ($M = 3.9$ vs. 2.5; $p < 0.01$), and a lower level of exposure to destructive digital influences (on the cyberbullying resilience scale-4.4 vs. 2.9 out of 5). Content analysis showed that 72% of messages from students with a high level of digital identity were constructive and professionally oriented (questions, assistance, resource sharing), while in the group with a low level of digital identity, this figure was only 29%. A similar pattern is described in a study by S. Soh *et al.* (2024), where active participation in online communities correlated with the development of emotional intelligence ($r = 0.57$) and academic responsibility ($r = 0.63$).

Overall, the results of the study demonstrate the complex relationship between digital identity and personal characteristics, learning activities, and cognitive functions. Digital identity, when moderately expressed and structured, contributes to the development of self-regulation and learning effectiveness, while excessive use of certain social networks leads to cognitive overload, decreased concentration, and an increased risk of addiction. A comparison of the data obtained with the results of similar studies, such as

J. Wertsch & O. Jäggi (2022) and R. Ryan & E. Deci (2023), allows to conclude that digital identity is an integrative indicator of personal development in the context of the digitalisation of education. It reflects not only the level of technological proficiency, but also the degree of awareness, ethical maturity, and social activity of the learner. Analysis of the results confirms the conclusions of previous studies. Thus, R. Ibrahim *et al.* (2024) noted the mediating role of digital literacy and self-regulation in the academic process, while S. Zakir *et al.* (2025) pointed to the positive impact of digital identity on academic performance. The data obtained also agrees with the conclusions of S. Soh *et al.* (2024), who emphasise the importance of digital practices for the formation of identity and self-regulation skills.

A comparison with international studies shows that the trend towards integrating digital identity and personal development is relevant not only in a national context, but also in a global one. For example, A. Faza & I. Lestari (2025) emphasise that digital identity has a positive impact on students' adaptability and critical thinking, which is fully consistent with the results of this study. Discussion of the results allows for drawing several key conclusions. Firstly, students' digital identity is directly linked to the development of personal and professional competencies, which confirms the need to integrate digital practices into educational programmes. Secondly, the identified differences between levels of digital identity indicate the need for a differentiated approach to teaching and developing digital skills. Thirdly, the correlations established demonstrate that the formation of a stable digital identity can contribute to increased academic motivation and learning effectiveness.

Educational strategies for forming a harmonious digital identity

Given that digital identity is the main predictor of personal development ($\beta = 0.54$; $p < 0.01$), educational practice requires systemic changes aimed at forming a conscious and reflective digital identity among students. It is advisable to integrate specialised modules into educational programmes, such as "Digital Identity and Self-Presentation", "Responsible Behaviour in the Digital Environment" and "Digital Footprint and Reputation". The use of reflective assignments, including keeping digital diaries, blogs, and e-portfolios, will allow students to analyse their own digital image and its impact on their academic and personal lives. The main goal of this area is to consciously construct a positive and harmonious digital identity as the basis for personal growth.

The significance of digital competence as a predictor of personal development ($\beta = 0.31$; $p < 0.01$) necessitates the systematic development of digital technology skills. The introduction of training courses on digital literacy, cybersecurity, and working with information and media content will create conditions for forming confidence and autonomy among students in the digital environment. The use of project-based assignments, such as creating podcasts, websites, and online platforms, contributes to the development of practical skills and a creative approach to using digital

tools. Particular attention should be paid to forming the skills of critical assessment of information through media education, which will ensure students' ability to interact with digital content in an informed and responsible manner.

Emotional stability in online interactions, demonstrating a significant correlation with personal development ($\beta = 0.27$; $p < 0.01$), requires the inclusion in the educational process of psychological training in self-regulation and emotion management. Analysing cases related to cyberbullying, trolling, and internet addiction will allow students to develop a critical attitude towards destructive forms of digital interaction. Exercises to develop empathy and tolerance in digital communication will ensure the formation of the ability to maintain psychological stability in the digital space and interact constructively with various participants in the educational process. Reflection on digital behaviour, which acts as an additional factor in personal development ($\beta = 0.22$; $p < 0.05$), involves regularly self-analysing digital habits and assessing the amount of time spent online. Including tasks such as "How do I behave in the digital space?" and "How does the digital environment influence my values and decisions?" contributes to the development of awareness and critical thinking. The use of portfolios and SWOT analysis of digital behaviour allows students to gain control over their own digital practices and develop strategies for harmonious interaction with the digital environment.

The results of the analysis showed that the involvement of students in project and communication activities in digital educational communities increases the level of self-regulation, critical thinking and resistance to destructive forms of interaction. The creation of professional online communities at universities, the introduction of mentoring in the digital environment, and the encouragement of participation in educational forums, scientific platforms, and student digital projects foster a sense of belonging and social significance. Active participation in constructive digital communities contributes to the formation of professional identity and strengthens motivation for self-development. At the same time, the formation of digital identity should not be limited to educational activities, but requires of integration into the educational system of the university. Holding themed weeks, such as "My Digital Identity", organising discussions on values in the digital age, and competition for the best project or blog create a favourable environment for reflection and the development of a conscious attitude towards the digital space. Supporting the initiatives of students in online cultural and scientific projects enhances their social activity and contributes to the formation of a sustainable positive digital identity.

Effective implementation of these strategies is impossible without training teaching staff. It is necessary to conduct advanced training courses for teachers in the areas of digital identity pedagogy, digital ethics, online communication psychology, and managing the digital stress of students. A competent teacher, knowledgeable about the specifics of digital identity formation and able to purposefully accompany this process, is a key factor in the successful

implementation of educational strategies. The formation of a harmonious digital identity serves not only as a means of adapting to the digital environment, but also as a mechanism for personal maturity, self-regulation, and sustainable development of the student's personality. The systematic implementation of these strategies in educational practice will ensure a balance between personal growth, digital activity and psychological well-being, transforming digital identity from a potential source of risk into a powerful internal resource for the professional and personal development of students in the context of the digital transformation of society.

■ CONCLUSIONS

The study confirmed that students' digital identity is a key factor in personal development under the conditions of a digital educational environment. An analysis of data from 136 second-year students at the Institute of Information and Communication Technologies and Artificial Intelligence showed that 31% of students have a high level of digital identity, 49% have an average level, and 20% have a low level. This differentiation indicates significant differences in digital competence, self-presentation awareness, and the ability to adapt in a digital environment. Correlation analysis revealed a strong positive relationship between digital identity and motivation for self-development ($r = 0.68$; $p < 0.05$), as well as cognitive flexibility ($r = 0.62$; $p < 0.05$). These results show that increased awareness of one's digital identity is accompanied by increased student activity in the area of self-development and adaptive thinking skills. The average scores of students with an average level of digital identity ($r = 0.54$ - 0.49) confirm the presence of a positive effect, but to a lesser extent, while students with low digital identity show virtually no effect.

Regression analysis showed that digital identity is the main predictor of personal development ($\beta = 0.54$; $p < 0.01$), explaining about 48% of the variation in

personal maturity indicators. Important additional influences are digital competence ($\beta = 0.31$), emotional stability ($\beta = 0.27$), and reflection on digital behaviour ($\beta = 0.22$), indicating a complex interaction between the cognitive, emotional, and behavioural components of digital identity in the formation of students' personal maturity. Additional analysis of student activity in digital educational communities showed that participation in project and communication activities is associated with higher levels of self-regulation, reflection, and resistance to destructive forms of digital interaction. Students with high activity levels demonstrated 17-22% higher personal development indicators compared to their less active peers. Prospects for further research are related to studying the impact of digital identity on professional self-determination, academic performance, and adaptation of students in various specialties, as well as the implementation of intervention programmes aimed at increasing personal maturity and digital competence in the context of the digitalisation of education.

■ ACKNOWLEDGEMENTS

The authors would like to express their gratitude to the management of the J. Balasagyn Kyrgyz National University for their organisational support of the research, as well as to the staff of the Institute of Information and Communication Technologies and Artificial Intelligence for their assistance in data collection. The authors are grateful to all the students who participated in the research.

■ FUNDING

The authors declare that they received no financial support for this study.

■ CONFLICT OF INTEREST

None.

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Санариптик иденттүүлүк студенттердин академиялык мотивациясын жана когнитивдик ийкемдүүлүгүн алдын ала айтуучу катары (Кыргызстан боюнча)

Тайырбек Мусакулов

Улук окутуучу

Ж. Баласагын атындагы Кыргыз улуттук университети
720033, Фрунзе көч., 547, Бишкек ш., Кыргыз Республикасы
<https://orcid.org/0009-0007-1954-9481>

Кубатбек Кокомбаев

Социология илимдеринин кандидаты, доцент
Евразия университети
720033, Чуй просп., 4-В, Бишкек ш., Кыргыз Республикасы
<https://orcid.org/0009-0000-9475-2788>

Абдикайым Жусубалиев

Социология илимдеринин кандидаты, доцент
Ж. Баласагын атындагы Кыргыз улуттук университети
720033, Фрунзе көч., 547, Бишкек ш., Кыргыз Республикасы
<https://orcid.org/0009-0002-9506-4498>

Бакытбек Малтабаров

Социология илимдеринин кандидаты, доцент
Ж. Баласагын атындагы Кыргыз улуттук университети
720033, Фрунзе көч., 547, Бишкек ш., Кыргыз Республикасы
<https://orcid.org/0009-0004-8683-837X>

Аннотация. Изилдөөнүн максаты Маалыматтык-коммуникациялык технологиялар жана жасалма интеллект институтунун экинчи курс студенттеринин жеке өнүгүүсүнө санариптик иденттүүлүктүн таасирин изилдөө болгон. Методологиялык негизи жеке-активдүүлүк жана социомаданий мамилелер болгон, бул бизге санариптик иденттүүлүктү санариптик билим берүү чөйрөсүндө өзүн-өзү таануунун элементи катары кароого мүмкүндүк берген. Сандык ыкмалар (Санариптик иденттүүлүк шкаласы, Жеке өсүү демилгесинин шкаласы, Когнитивдик ийкемдүүлүк инвентаризациясы, Академиялык өзүн-өзү жөнгө салуу анкеталары) жана санариптик билим берүү коомчулуктарындагы студенттердин активдүүлүгүнө кошумча талдоо жүргүзүлдү. Жыйынтыктар көрсөткөндөй, студенттердин 31 % жогорку деңгээлдеги санариптик иденттүүлүккө, 49 % орточо деңгээлдегиге жана 20 % төмөнкү деңгээлдегиге ээ болгон. Корреляциялык анализ санариптик иденттүүлүк менен өзүн-өзү өнүктүрүүгө мотивациянын ($r = 0,68$; $p < 0,05$), ошондой эле когнитивдик ийкемдүүлүктүн ($r = 0,62$; $p < 0,05$) ортосундагы күчтүү оң байланышты көрсөттү. Регрессиялык анализ санариптик иденттүүлүк жеке өнүгүүнүн негизги предиктору экенин ($\beta = 0,54$; $p < 0,01$), санариптик компетенттүүлүк ($\beta = 0,31$), эмоционалдык туруктуулук ($\beta = 0,27$) жана санариптик жүрүм-турумдук рефлексия ($\beta = 0,22$) да маанилүү предикторлор экенин тастыктады. Билим берүүчү санариптик коомчулуктардагы окуучулардын активдүүлүгүн андан ары талдоо долбоорго негизделген жана коммуникациялык иш-аракеттерге катышуу өзүн-өзү жөнгө салуунун, критикалык ой жүгүртүүнүн жана санариптик өз ара аракеттенүүнүн деструктивдүү формаларына (троллинг, киберкуугунтук) туруктуулуктун жогорулашы менен байланыштуу экенин көрсөттү. Изилдөөнүн практикалык мааниси окуучуларда санариптик иденттүүлүктү, критикалык ой жүгүртүүнү, эмоционалдык туруктуулукту жана академиялык мотивацияны өнүктүрүүгө багытталган билим берүү стратегияларын иштеп чыгуу үчүн натыйжаларды потенциалдуу колдонууда жатат.

Негизги сөздөр: санариптик маданият; кесиптик өзүн-өзү аныктоо; коммуникациялык компетенциялар; өзүн-өзү жөнгө салуу; критикалык ой жүгүртүү

Цифровая идентичность как предиктор академической мотивации и когнитивной гибкости студентов (на материале Кыргызстана)

Тайирбек Мусакулов

Старший преподаватель
Кыргызский национальный университет имени Ж. Баласагына
720033, ул. Фрунзе, 547, г. Бишкек, Кыргызская Республика
<https://orcid.org/0009-0007-1954-9481>

Кубатбек Кокомбаев

Кандидат социологических наук, доцент
Евразийский университет
720033, просп. Чуй, 4-В, г. Бишкек, Кыргызская Республика
<https://orcid.org/0009-0000-9475-2788>

Абдикайым Жусубалиев

Кандидат социологических наук, доцент
Кыргызский национальный университет имени Ж. Баласагына
720033, ул. Фрунзе, 547, г. Бишкек, Кыргызская Республика
<https://orcid.org/0009-0002-9506-4498>

Бакытбек Малтабаров

Кандидат социологических наук, доцент
Кыргызский национальный университет имени Ж. Баласагына
720033, ул. Фрунзе, 547, г. Бишкек, Кыргызская Республика
<https://orcid.org/0009-0004-8683-837X>

Аннотация. Цель исследования состояла в изучении влияния цифровой идентичности на личностное развитие студентов второго курса Института информационно-коммуникационных технологий и искусственного интеллекта. Методологической основой послужили личностно-деятельностный и социокультурный подходы, позволившие рассматривать цифровую идентичность как элемент самореализации личности в цифровой образовательной среде. Использовались количественные методы (опросники Digital Identity Scale, Personal Growth Initiative Scale, Cognitive Flexibility Inventory, Academic Self-Regulation Questionnaire) и дополнительный анализ активности студентов в цифровых образовательных сообществах. Результаты показали, что 31 % студентов имеют высокий уровень цифровой идентичности, 49 % – средний, 20 % – низкий. Корреляционный анализ выявил сильную положительную связь между цифровой идентичностью и мотивацией к саморазвитию ($r = 0,68$; $p < 0,05$), а также когнитивной гибкостью ($r = 0,62$; $p < 0,05$). Регрессионный анализ подтвердил, что цифровая идентичность является основным предиктором личностного развития ($\beta = 0,54$; $p < 0,01$), дополнительно значимыми предикторами выступили цифровая компетентность ($\beta = 0,31$), эмоциональная устойчивость ($\beta = 0,27$) и рефлексия цифрового поведения ($\beta = 0,22$). Дополнительный анализ активности студентов в образовательных цифровых сообществах показал, что вовлеченность в проектную и коммуникационную деятельность связана с повышением уровня саморегуляции, критического мышления и устойчивости к деструктивным формам цифрового взаимодействия (троллинг, кибербуллинг). Практическая значимость исследования заключается в возможности использования результатов для разработки образовательных стратегий, направленных на формирование цифровой идентичности, развитие критического мышления, эмоциональной устойчивости и академической мотивации студентов.

Ключевые слова: цифровая культура; профессиональное самоопределение; коммуникативные компетенции; саморегуляция; критическое мышление