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## TRANSVERSAL SKILLS OF STUDENTS AND THEIR ADAPTATION TO THE UNIVERSITY ENVIRONMENT

### Abstract

Transversal skills influence the adaptation mechanisms of university students, especially first-year students and students in other courses. The purpose of this article is to examine the relationship between transversal skills and key factors in student adaptation, including regular attendance at higher education institutions and problems in the academic and social spheres. In the process of analysing the scientific literature, the content was identified that influences the improvement of students' transversal skills for comfortable adaptation at university. The study considers additional skills that are not classified as transversal but are necessary for students and contribute to their adaptation to the conditions of higher education institutions. The study uses a mixed approach, including quantitative data collection and qualitative methods based on a student survey. The results of this study may be helpful to higher education institutions and educational organisations, as it proposes ways to improve the quality of education and student success. Higher education institutions can accept more students with complex needs by expanding skill development beyond academic competencies and including preparation for the challenges of higher education.

**Keywords:** transversal skills, student adaptation, higher education, academic performance, social integration, pedagogical measures, transition.

### Introduction

When a student transitions from high school to university, it is a significant moment in their university life, bringing plenty of new experiences and challenges. Students are required to adjust to substantial academic demands, a variety of social contexts, and a greater sense of independence throughout their college experience. Some recent studies have highlighted the significance of transdisciplinary abilities in easing the transition phase and enhancing overall academic success. In this light, the role of transversal skills should be thoroughly considered as a factor that helps students adapt to the university environment more easily.

Here is how 'unevoc.unesco.org' defines and describes transversal skills: "Transversal skills are those typically considered as not specifically related to a particular job, task, academic discipline or area of knowledge but as skills that can be used in a wide variety of situations and work settings (IBE 2013). These skills are increasingly in high demand for learners to successfully adapt to changes and to lead meaningful and productive lives.", underlining such ones as 'Critical and innovative thinking', 'Inter-personal skills' and other among which we focused on 'Global citizenship' that comprises 'tolerance, openness, respect for diversity, intercultural understanding, etc.' – very significant qualities for students to have better adjustment in the university environment. (UNESCO 2014c) [1]. This study aims to examine the relationship between transversal skills and students' adaptability to the university environment from the first year onward, focusing on attendance, academic performance, social integration, and overall satisfaction.

### **Literature review**

In Kazakhstan's educational sector, researchers have been rigorously investigating different issues, including the obstacles faced by new university students and the influence of diverse abilities on their adaptation.

Sanbayeva and Esenova found that language proficiency and institutional support, such as adaptation centres, help students integrate into university life, according to the report. They found that removing these barriers can boost international students' socio-pedagogical adaptability and academic success [2]. Asylbekova and colleagues explored the development of transliteracy among future teacher-psychologists. They highlighted the need for structured interventions to bridge this gap. They proposed a four-stage methodology – diagnostics, theoretical learning, practical training, and application – to enhance students' critical thinking and digital skills. This approach aims to improve their adaptability to the university environment and future professional demands in the digital age [3]. Kurbankulova and Stambekova argue that transversal skills in teacher training, such as critical thinking and communication, enable educators to foster student adaptability and cultural identity. These skills are crucial for creating learning environments that support students' adjustment to new settings, including the university environment, by enhancing their social and academic integration [4]. Researchers with Aldibekova believe that transversal competencies such as adaptability and critical thinking are essential for students to effectively manage higher education and professional problems, suggesting that although existing educational programs broadly address these competencies, practical applications need improvement to adequately prepare students, notably first-year students, for university expectations [5].

In the work of Azhumakova and group, it was found that exam-related stress considerably affects second-year medical students' psychoemotional and physiological states, hindering their adjustment to Asfendiyarov Kazakh National Medical University. Their findings suggest that first-year students may also experience stress-related concerns. The research supports university efforts, such as counselling, to minimise stress and promote adaptability during critical academic moments [6]. According to Otarova and colleagues, educational programs foster particular abilities, suggesting that first-year students may adjust to university challenges through early integration, and that changes to the curriculum might help new students acquire fundamental skills [7]. Asylbekova and colleagues' findings suggest that adding digital literacy and critical thinking to courses may help first-year students adjust to university. The study recommends psychological and pedagogical help to address skill gaps and boost student resilience and adaptability [8]. According to Sanbaeva and Esenova (2023), language hurdles (52% of foreign first-year students at Al-Farabi Kazakh National University lack fluency in Kazakh) and poor dormitory accommodations hinder integration by requiring communication and cultural adaptation. Their research suggests language and adaptability hubs can help first-year students academically and socially integrate. This shows how students adjust to institutional help. First-year students at Kokshetau Multidisciplinary Professional Institute struggle with academics and social integration, according to Abdualiieva and Utgenova. They stress communication skills. Psychology and educational support include university transition training and group activities. These findings suggest that first-year students need skill development and support to acclimate [9].

These studies collectively illustrate the relevance of transversal skills within Kazakhstan's higher education structure, providing valuable insights for developing measures to aid students from the first year onward.

There are, indubitably, also works on the topic by foreign researchers that are as captivating as the Kazakhstani ones and are well worth focusing on to gain many-sided views on the topic. Transversal skills such as communication, teamwork, problem-solving, and critical thinking are essential for first-year students' adaptability to the university environment, fostering resilience, autonomy, and academic success. Studies show that structured programs like the

Transversal Skills Laboratory enhance students' adjustment by promoting reflective practices and creative activities, crucial for early university transitions [10]. At the same time, recent graduates perceive these skills as vital for both academic and labour market integration, aiding social and personal adjustment [11], [12]. Employers globally value these competencies, emphasising the need for pedagogies that develop self-management and socio-relational skills to ease students' university and professional transitions [13]. Integrating transversal skills into curricula through context-specific, collaborative methods, such as socioformative project-based practices and online activities, supports students' adaptability by enhancing critical thinking and academic performance [14], [15]. These findings highlight the importance of embedding skills like creativity, resilience, and teamwork in higher education to help first-year students navigate academic challenges and prepare for future employability.

### **Materials and methods of research**

For the study, the relationship between transversal skills, first-year students, and other-year students, and adaptability was put in focus for further consideration. So, our research group designed a mixed-method study that included numerous students (over 300) from a variety of academic disciplines at different higher education institutions to answer the questionnaire.

The following was included in the research framework:

*Quantitative survey:* An extensive questionnaire evaluating learners' transversal skills, adaptation experiences, and study accomplishments.

*Qualitative content questions:* Questions that include open-ended options to let respondents share their own ideas or alternatives, to obtain a deeper understanding of their adjustment challenges and the impact of transversal skills.

Questionnaire was on formed on 'Google Forms' platform as it is the most convenient way to disseminate the questions to the responders and easy to form tables to analyse results. Questions in the questionnaire were provided in three languages – Kazakh, English, and Russian - to let students with different language levels feel comfortable answering.

The quantitative data were analysed using statistical software to determine correlations between transversal skills and various adaptation outcomes. Thematic analysis and coding of qualitative data were used to find common trends and insights.

### **Results and their discussion**

In our mission to gain a more comprehensive understanding of the interplay between transversal skills and students' adaptation process, we conducted an extensive inquiry involving as many higher education students as possible. The findings from this survey, presented in Table 1 and other diagrams, offer important insights into learners' self-assessment of their transversal skills and the obstacles they may encounter as they adjust to the academic environment.

#### *Transversal Skills Self-Assessment*

On a scale of 1 to 5, students were questioned about their level of competence in a variety of transversal skills. Figure 1 displays the findings.

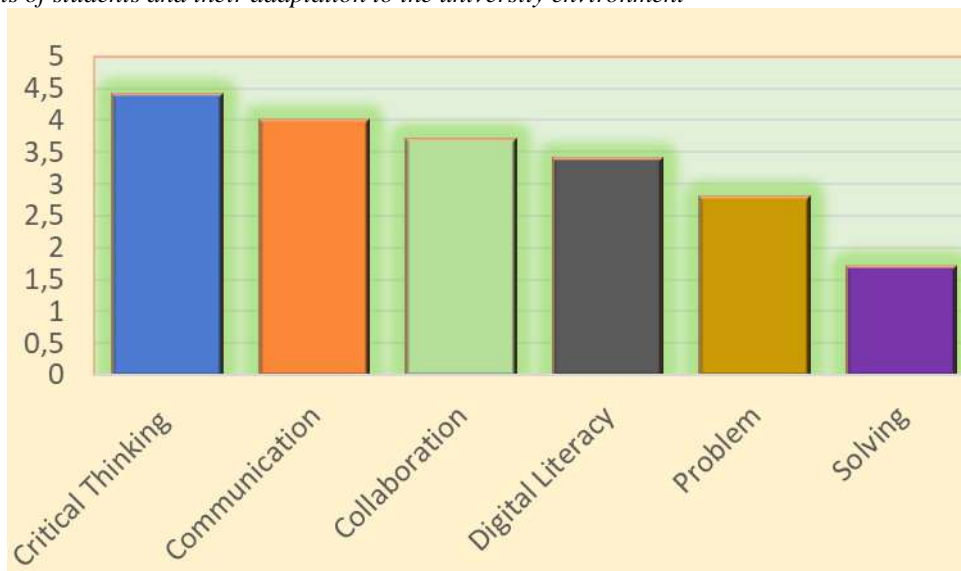


Figure 1. Self-Assessed Transversal Skills Proficiency

Note: compiled by the authors

According to the poll results, students think they are better at communicating and working together, but they could improve their digital literacy and problem-solving skills.

*Correlation between Transversal Skills and Adaptation Outcomes*

We examined the relationship between different adaptation outcomes and reported transversal skill performance. Table 1 illustrates the findings.

Table 1 – Correlation Matrix of Transversal Skills and Adaptation Outcomes

Transversal Skill	Academic Performance	Social Integration	Overall Satisfaction
Critical Thinking	0.65**	0.32*	0.48**
Communication	0.41*	0.72**	0.58**
Collaboration	0.38*	0.68**	0.55**
Digital Literacy	0.57**	0.25	0.40*
Problem Solving	0.61**	0.35*	0.52**

Note: compiled by the authors

\*  $p < 0.05$ , \*\*  $p < 0.01$

The correlation analysis reveals strong positive relationships between transversal skills and various adaptation outcomes. Notably, critical thinking and problem-solving skills show the strongest correlation with academic performance, while communication and collaboration skills are most strongly associated with social integration.

The correlation analysis reveals remarkable favorable relationships between transversal skills and different adaptation outcomes. In particular, *the strongest correlations are between academic success and critical thinking and problem-solving skills, whereas the most significant connections are between social integration and communication and collaboration skills.*

*Challenges in University Adaptation*

Learners were prompted to share their most difficult experiences about adjusting to life at university. The results are shown in Figure 2.

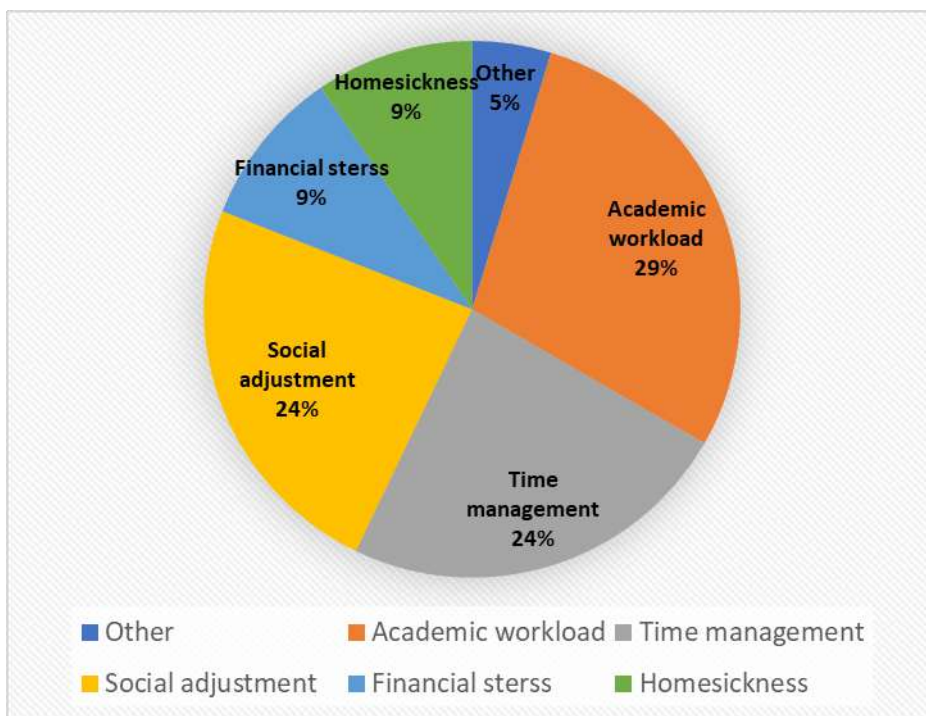


Figure 2. Most Challenging Aspects of University Adaptation

Note: compiled by the authors

The results of the questionnaire indicate that students’ biggest obstacles are social adjustment and time management, followed by academic workload. These results highlight how crucial it is for students to acquire transversal skills to overcome these obstacles more effectively.

*Perceived Importance of Transversal Skills Over Time*

The apparent significance of transversal skills at various phases of students' academic careers has been investigated. The results are presented in Figure 3.



Figure 3. Perceived Importance of Transversal Skills Over Time

Note: compiled by the authors

The information shows a distinct pattern in how students view the value of transversal skills as they progress in their educational paths. Digital literacy, communication, and critical thinking are increasingly seen as crucial, with critical thinking showing the greatest increase in perceived relevance from high school to graduation.

The questionnaire's responses offer significant insights into how students view transversal skills and how they fit within the university adaptation process. The results emphasize those fields where targeted efforts can be most helpful and confirm our previous conclusions regarding the significance of these skills.

Concerning the association involving transversal skills and student adaptation, our study came up with some striking findings:

#### *Academic Performance*

Students' transversal skills and learning outcomes were strongly positively correlated, according to the data. Specifically, it was found that learning success was significantly predicted by critical thinking, time management, and computer literacy, as shown in Table 3 [16].

Table 3 – Academic Performance

<b>Transversal Skill</b>	<b>Correlation with GPA</b>	<b>P-value</b>
Critical Thinking	0.68	<0.001
Time Management	0.62	<0.001
Digital Literacy	0.55	<0.001
Note: compiled by the authors		

#### *Social Integration*

According to the data, respondents who showed higher scores in communication, teamwork, and emotional intelligence reported better social integration and greater satisfaction with their university experience. These skills were especially critical for international learners and those with various cultural backgrounds.

#### *Study Habits*

Self-regulation and analytical skills were discovered to be strongly related to good study habits and academic determination. Students who demonstrated excellent self-reflection and adaptability were more likely to change their study habits when faced with new problems.

#### *Overall Adaptation*

Figure 4 shows a composite measure of transversal skills as an effective indicator of ultimate adaptation success, accounting for 47% of the variation in adaptation results after altering for social and academic characteristics.

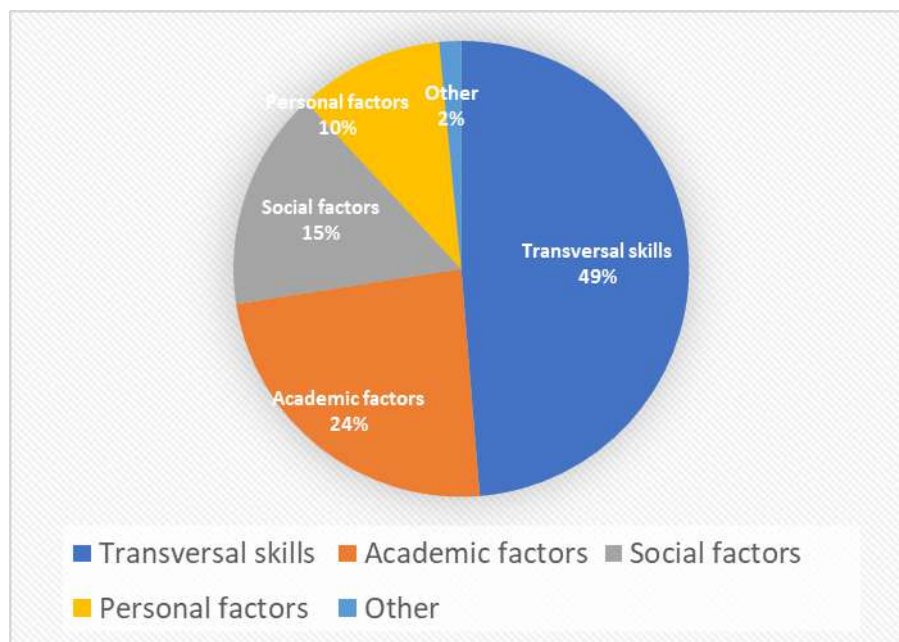


Figure 4. Factors Contributing to Adaptation Success

Note: compiled by the authors

#### *Pedagogical Measures to Enhance Transversal Skills*

According to our findings and the analysis of the sources with the best practices in higher education, we want to offer the following pedagogical measures to reinforce the development of transversal skills and make easy the students adaptation of first-year and further:

1. Integrated Skill Development: Using focused exercises and evaluations, integrate transversal skill development into current course curricula. For example:
  - Include critical thinking tasks in homework that are subject-specific.
  - Include group tasks to improve communication and teamwork skills.
  - To improve problem-solving skills, apply problem-based methods of learning.
2. Experiential Learning: Through case studies, internships, and service-learning initiatives, offer chances for the practical application of transversal skills in the real world. This may consist of:
  - Collaborating with affiliated businesses to provide temporary internships
  - Planning leadership- and team-intensive community service projects
  - Using real-world case studies to enhance analytical and decision-making capabilities
3. Peer Mentoring Programs: To promote social integration and knowledge exchange, set up peer mentoring programs bringing together first-year students with competent senior year students.
4. Reflective Practice: To assist students in growing more self-aware and adaptive, consistently stimulate self-reflection and cognitive processes exercises.
5. Technology-Enhanced Learning: Use digital platforms and technologies to help students increase their online cooperation and digital literacy.
6. Information Competence Development: Put into practice initiatives created especially to improve students' capacity to search and find, assess, and implement information in courses of study.

7. Interdisciplinary Projects: Encourage interdisciplinary cooperation among students to improve their capacity to use transversal abilities in a variety of circumstances.

8. Gamification and Simulations: Develop appealing surroundings for transversal skill practice via game-based learning and simulations.

9. Personalized Learning Plans: According to preliminary evaluations of students' transversal levels of skill, establish personalized skill development plans.

10. Cross-Cultural Exchange Programs: Encourage intercultural collaboration and exchanges to improve awareness of the world and understanding of culture.

*Implementation Strategies*

The following techniques are advised to effectively implement these educational techniques into the university curriculum:

Table 4 – Implementation Strategies

Strategy	Description
Faculty Training	Provide workshops and resources for faculty members to effectively incorporate transversal skill development into their courses
Curriculum Mapping	Conduct a comprehensive review of existing curricula to identify opportunities for integrating transversal skill development
Assessment and Feedback	Develop robust assessment tools to measure students' progress in acquiring transversal skills and provide regular feedback
Institutional Support	Ensure administrative backing and resource allocation for transversal skill initiatives across all departments

Note: composed by authors

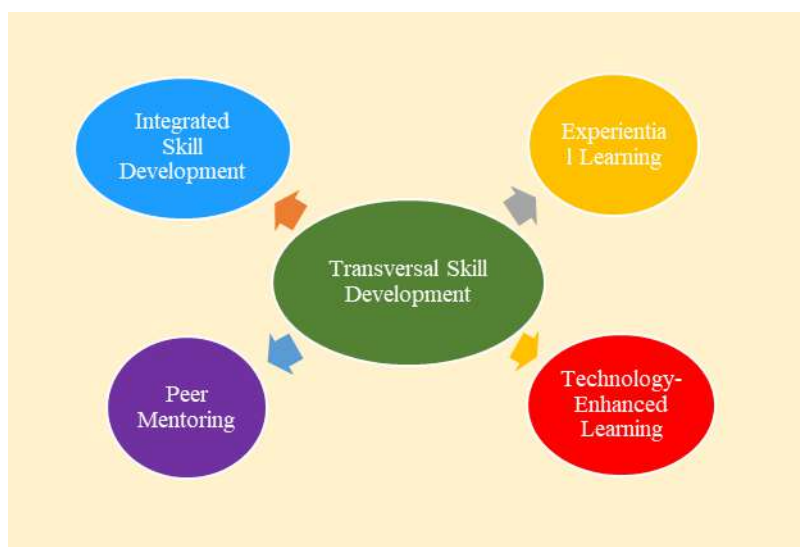


Figure 5. Interconnected Pedagogical Measures

Note: composed by authors

Higher education institutions can establish an enriching educational atmosphere that supports the development of critical transversal skills by putting these comprehensive educational methods into practice. This comprehensive approach ensures that students have several options for skill development and practice, equipping them not only for success in the classroom but also for future employment and lifelong learning.

*Other Relevant Skills for University Adaptation*

Even though transversal skills are a fundamental foundation for student success, our study also indicated that several other skill areas contribute an essential part in university adaptation:

*Cultural Competence:* This refers to the capacity to comprehend a variety of cultural contexts and viewpoints; it is especially crucial in growing international academic settings.

*Determination and adaptability:* These qualities are necessary for long-term academic achievement because they allow one to keep going in the midst of difficulties and disappointments.

*Financial Literacy:* The ability to handle one's own money and appreciate the financial implications of pursuing higher education.

*Health and Wellness Management:* The capacity to sustain one's physical and emotional health in the context of social and academic demands.

### **Conclusion**

To assess students' abilities to study at the next level of educational institutions after school is not really hard for an educational worker who has been working for a very long time in the corresponding settings with students. However, to provide a grounded evaluation, results analysis, and conclusions, further multilateral research on the topic is necessary, and interviewing up-to-date learners is pivotal in this case as well.

So, the studies underline the fundamental role of transversal skills in facilitating students' successful adaptation in the first year and, later, in the university environment, thereby showing a clear relationship between these skills and important adaptation outcomes, such as effective learning patterns, social integration, and academic success. By using focused instructional strategies to improve transversal abilities, higher education institutions can significantly enhance the university experience and prepare students for sustained achievement.

Finally, acknowledging other relevant skills, such as cultural awareness and adaptability, highlights the complex nature of student adjustment. For students at the beginning, a comprehensive strategy that addresses both transversal and supplementary skills is likely to produce the most accurate guidance.

We have fully demonstrated (within the scope of this research) that transversal skills are essential for students to adapt to the university environment, which, in turn, will contribute to academic achievement.

Transversal skills are becoming increasingly significant as higher education continues to shift in response to global issues and changing employment needs. Educational institutions that place greater emphasis on developing these competences alongside more traditional academic qualifications will be better prepared to train their students for success in their educational pursuits and beyond. "Transversal skills contribute to the development of information competence through effective search, media sorting, reflection, personal and spiritual development, rational application of knowledge and information of future university specialists".

The next research investigations will focus on prospective research to assess the long-term effects of transversal skill development on student outcomes, as well as on creative instructional approaches that can effectively integrate these skills across a variety of academic subjects. On top of that, evaluating how advanced technologies such as virtual reality and artificial intelligence can support the development of transversal skills might lead to new approaches to improving student performance and adaptability in higher education institutions.

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## **СТУДЕНТТЕРДІҢ ТРАНСВЕРСАЛДЫ ДАҒДЫЛАРЫ ЖӘНЕ ОЛАРДЫҢ УНИВЕРСИТЕТТІК ОРТАҒА БЕЙІМДЕЛУІ**

### **Андатпа**

Университет студенттерінің, әсіресе бірінші курс білім алушылары мен басқа курс білім алушыларының бейімделу механизмдеріне трансверсалды дағдылар әсер етеді. Бұл мақаланың мақсаты - трансверсалды дағдылар мен студенттердің бейімделуінің маңызды факторлары арасындағы байланысты, сондай-ақ, жоғары оқу орнына жүйелі түрде баруы, академиялық және әлеуметтік салалардағы мәселелерді зерттеу. Ғылыми әдебиеттерді зерттеу және талдау барысында университетте ыңғайлы бейімделу үшін білім алушылардың трансверсалды дағдыларын жақсартуға әсер ететін контент анықталды. Зерттеу трансверсалды санатына жатпайтын, білім алушылар үшін қажетті және жоғары оқу орындарының жағдайларына бейімделуіне ықпал ететін қосымша дағдыларды қарастырады. Зерттеу барысында білім алушыларға жүргізілген сауалнама және оның нәтижесінде сандық деректерді жинау және сапалық әдістерді қамтитын аралас әдіс қолданылды. Жүргізілген зерттеудің нәтижелері білім сапасы мен білім алушылардың жетістіктерін арттыру жолдарын ұсынатындықтан жоғары оқу орындары мен білім беру ұйымдары үшін пайдалы болуы мүмкін. Жоғары оқу орындары академиялық құзыреттіліктерден тыс дағдыларды дамытуды кеңейту және жоғары білім берудің қиындықтарына дайындықты қосу арқылы күрделі қажеттіліктері бар білім алушылардың көбірек санын қабылдай алады.

**Негізгі сөздер:** трансверсалды дағдылар, студенттерді бейімдеу, жоғары білім, үлгерім, әлеуметтік интеграция, педагогикалық шаралар, ауысу.

## ТРАНСВЕРСАЛЬНЫЕ НАВЫКИ СТУДЕНТОВ И ИХ АДАПТАЦИЯ К УНИВЕРСИТЕТСКОЙ СРЕДЕ

### Аннотация

На адаптационные механизмы студентов университетов, особенно первокурсников и студентов других курсов, оказывают влияние трансверсальные навыки. Цель статьи - изучить взаимосвязь между трансверсальными навыками и важными факторами адаптации студентов, такими как регулярное посещение высшего учебного заведения и проблемы в академической и социальной сферах. В процессе исследования и анализа научной литературы выявлен контент, влияющий на улучшение трансверсальных навыков студентов для комфортной адаптации в университете. В исследовании рассматриваются дополнительные навыки, не относящиеся к категории трансверсальных, которые являются необходимыми для обучающихся и способствуют их адаптации к условиям высших учебных заведений. В исследовании применен смешанный подход, включающий количественный сбор данных и качественные методы в результате проведенного опроса студентов. Результаты данного исследования могут быть полезны высшим учебным заведениям, государственным и образовательным организациям, так как предложены способы повышения качества обучения и успешности студентов. Высшие учебные заведения могут принять большее количество студентов с комплексными потребностями, расширяя развитие навыков за пределы академических компетенций и включая подготовку к вызовам высшего образования.

**Ключевые слова:** трансверсальные навыки, адаптация студентов, высшее образование, успеваемость, социальная интеграция, педагогические меры, переходный период.

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