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KEY INDICATORS OF A STUDENT PROFILE IN HYBRID-FORMAT MATHEMATICS EDUCATION

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ANNOTATION

This article presents the results of a study analyzing the profile of a students who choose a hybrid format for mathematics education. Demographic, social, and behavioral indicators are identified, and future development prospects are outlined.

АННОТАЦИЯ

В данной статье представлены результаты исследования, анализирующего профиль студентов, выбирающих гибридный формат обучения математике. Определены демографические, социальные и поведенческие показатели, а также обозначены перспективы дальнейшего развития.

Keywords: hybrid learning, mathematics education, student profile.
Ключевые слова: гибридное обучение, математическое образование, профиль студента.

Digital transformation necessitates the development of new educational strategies [1] to preserve traditional teaching approaches and ensure that new technologies enhance the training level of future specialists, providing access to quality education beyond university classrooms [2]. In this context, the hybrid learning format is actively developing [3,4]. It is understood as the synchronous integration of classroom and online formats within a single educational event [5,6]. This format is increasingly being adopted by leading higher education institutions both internationally and in Russia.

Siberian Federal University (SFU), responding to modern trends, has taken steps in this direction, considering it a complex task encompassing various aspects of the educational process [7]. At SFU's Institute of Space and Information Technologies, the bachelor's program "Computer Game and Application Development" (field of study 09.03.02 "Information Systems and Technologies") is delivered in a hybrid format. This research focused on for mathematical disciplines among 59 students, 16 of whom chose the online learning format. The research aimed to analyze the profile of a students who choose a hybrid format for mathematics education. To achieve the research goal, a student survey was conducted to identify demographic, social, and behavioral indicators.

Let us consider some of the obtained results. Table 1 presents selected demographic and social indicators based on student responses. Overall, these indicators do not reveal any specific characteristics of the student profile that would allow us to state definitively that a student is studying in a hybrid format, with the exception of geolocation.

Table 1 – Summary of Respondent Responses

Characteristic		**%**
Gender	Male	69,4
	Female	30,6
Age	18	38,9
	19	25
	20	19,4
	21-24	16,7
Place of Residence	Krasnoyarsk (university location)	69,4
	Moscow	5,6

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	Novorossiysk	2,8
	Neftekamsk	2,8
	Irkutsk	5,6
	Kansk	2,8
	Other	11
Living Conditions	In a university campus dormitory	41,7
	In a rented apartment	13,9
	In own apartment	8,3
	With parents	36,1
Marital Status	Married	2,8
	Single	55,6
	In a relationship	41,7
Employment Status	Yes, working in my field of study	11,1
	Yes, working outside my field of study	8,3
	No, not employed	80,6
Parental Education Level	Postgraduate degree (e.g., PhD, ScD)	5,6
	Higher education	75
	Incomplete higher education	11,1
	Secondary vocational education	44,4
	Secondary general education	11,1

However, the analysis of responses to additional survey questions concerning preferences, habits, reactions in various situations, and motivation revealed the following key behavioral indicators of hybrid-format learners [8, 9]. These include:

1. *Flexibility and Convenience* – valuing the ability to combine studies with work due to a flexible schedule and the elimination for daily commuting.
2. *Digital Competence* – possessing experience in the digital environments and demonstrating readiness to adapt to new technologies.
3. *Psychological Well-being and Health* – striving to reduce stress and take care of one's well-being.
4. *Learning Style and Pace* – preferring an individual pace in learning mathematics, supported by a high level of self-organization and discipline.

Furthermore, the survey identified the primary reasons influencing the choice of learning format:

– *Learning from Any Location* – the ability to integrate studies with various life circumstances.

– *Maximizing Inclusivity* – ensuring access to educational resources without the need for physical presence.

– *Effective Time Management* – optimizing time by reducing logistical overhead.

– *Comfort and Safety* – creating a psychologically supportive environment.

The findings demonstrate the modern generation's interest in the hybrid learning format, confirm the demand for geographical flexibility in education, and enabled the formulation of key student profile indicators.

Future research should focus on deepening the understanding of cognitive and behavioral characteristics of students in hybrid environments, as well as assessing their level of digital literacy. Additionally, it is essential to define the material, technical, and methodological conditions required for the effective implementation of hybrid learning.

Another relevant direction involves developing interaction models for all participants in the educational process. These models should facilitate a high level of communication between online and offline students, promptly address emerging issues, and encourage them to engage in

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subject-specific discussions, which will undoubtedly contribute to increasing their involvement in the learning process.

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