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Digital doctorate: use of digital tools by postgraduates at Lobachevsky university, Russian Federation

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Abstract. Digitalisation has become part of today's educational system. It is now a social transformation that penetrates to the core of how knowledge is created, valued and lived. ***Aim.*** To describe and explain how postgraduates at Lobachevsky University adopt and use digital research tools through the lenses of digital academic habitus and symbolic labour. ***Methods.*** Quantitative research method, specifically a cross-sectional descriptive survey to collect data from respondents. An online questionnaire was used to collect data from January to June, 2025. In all, forty-seven postgraduates answered the questionnaire successfully. The data was analysed and the results were presented in tables and figures for easy understanding. ***Results.*** Findings from the study indicate that, most postgraduates view digital tools positively and indicated that they received support from their supervisors. Generative artificial intelligence was the most frequently used group of tools. About 60% of postgraduates reported reliable internet access at the University campuses, and they also build their workflows around artificial intelligence assistance. Postgraduates also indicated that they use digital tools mainly to conduct their research efficiently and gain professional recognition, rather than to comply with strict university rules. Additionally, postgraduates in later stages of their doctorial programmes use digital tools more often and with greater confidence than those at the beginning of their postgraduate studies. On the basis of these results, the study recommends that Lobachevsky University implement a staged digital research curriculum with compulsory onboarding in the first semester and a third-year booster targeted at the observed dip in regular use. Furthermore, the Graduate School should establish supervision standards for digital practice, supported by monthly clinics, and require agreed tool norms in individual study plans. The university should also build access resilience through an approved digital tool catalogue, compliant substitutes, connectivity support, and a rapid response help desk. Lastly, there should be formalized peer learning via cross-cohort practice circles, a repository of templates and guides, and recognition awards which is a model suitable for replication by other universities.

Keywords: digital academic habitus, digital tools, doctoral education, generative artificial intelligence, research tool adoption

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Цифровая докторантура: использование цифровых инструментов аспирантами университета Лобачевского, Россия

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Аннотация. Цифровизация стала неотъемлемой частью современной системы образования. Сегодня это социальная трансформация, проникающая в саму суть того, как создается, оценивается и проживается знание. ***Цель:*** описать и объяснить, как аспиранты Университета Лобачевского осваивают и используют цифровые исследовательские инструменты через призму цифрового академического габитуса и символического труда. ***Методы:*** количественный метод исследования, а именно кросс-секционный описательный опрос. Сбор данных проводился с помощью онлайн-анкетирования с января по июнь 2025 г. В опросе приняли участие 47 аспирантов. Данные были проанализированы с применением методов описательной статистики, результаты представлены в таблицах и рисунках. ***Результаты.*** Исследование показало, что большинство респондентов положительно относятся к цифровым инструментам и получают поддержку от своих научных руководителей. Наиболее часто используемым инструментом стал генеративный искусственный интеллект. Около 60 % респондентов сообщили о надежном доступе к интернету, и многие из них выстраивали свои рабочие процессы с помощью искусственного интеллекта. Респонденты указали, что применяют цифровые инструменты в основном для эффективного проведения исследований и получения профессионального признания, а не для соблюдения строгих университетских правил. Кроме того, аспиранты третьего года обучения используют цифровые инструменты чаще и увереннее, чем те, кто находится в начале своего пути. Университету Лобачевского рекомендуется внедрить поэтапную учебную программу по цифровым исследованиям с обязательным вводным курсом в первом семестре и курсом повышения квалификации на третьем году обучения, направленным на устранение наблюдаемого снижения активности применения цифровых инструментов. Необходимо установить стандарты научного руководства в области цифровой практики, поддерживаемые ежемесячными консультациями, и требовать включения согласованных норм использования цифровых инструментов в индивидуальные учебные планы. Университету следует также укрепить устойчивость доступа к цифровым ресурсам посредством утвержденного каталога цифровых инструментов, подбора соответствующих аналогов, поддержки подключения и службы технической поддержки. Наконец, следует формализовать взаимное обучение через межпоточные практические группы, репозиторий шаблонов и руководств, а также внедрение системы поощрений, которую могут принять и другие университеты.

Ключевые слова: цифровой академический габитус, цифровые инструменты, докторское образование, генеративный искусственный интеллект, внедрение исследовательских инструментов

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Introduction

Higher education digitalisation is not merely a technical transformation. It is a social transformation that penetrates to the core of how knowledge is created, valued and lived [1, 2]. Doctoral students, who still carving their identity as scholars, find the movement towards digital tools in research not only reshapes what is deemed as legitimate academic practice but also how learning, labour and recognition are experienced [3]. These shifts are set against a much larger background of global crises, institutional impetus and changing technological cultures [4]. COVID-19 disturbed the traditional way of supervision, data collection and collaborative work, therefore dislocating academic existence into digital spaces [5]. Thereafter, new forms of connectivity were accompanied by increased vulnerabilities, particularly for junior researchers. This reorganization of scholarly routines is an uneven one, stratified by access to digital infrastructures, institutional support and the symbolic capital necessary for navigating academic fields [6].

Doctoral education is an arena where such contradictions come out strongly [7]. Doctorial education is where students are found juggling and competing demands for innovations, conformity and autonomy [8]. The journey for doctoral students is increasingly filled with uncertainty and constraint as institutions go to geo-political limitations, Western sanctions and restricted access as a result of limited funding [9]. Along with the global acceleration of artificial intelligence (AI) tools for academic writing, analysis and collaboration, opportunities for new adaptation, competition and proof of scholarly legitimacy through digitally-mediated means were opened [10]. The sudden high spread of generative tools ranging from citation generators to language models did not only alter the technical means of academic production but unsettled the boundaries between what is considered authentic, skillful or scholarly [11]. Digitalisation, for many doctoral students in under-resourced or semi-peripheral institutions, seems like an act of survival, rather than empowerment [12].

Doctoral students are active agents in their choice of technology [13]. Use of digital tools by doctoral students speaks volumes about social processes surrounding belonging, aspiration, exclusion and identity. Their access, resistance or incorporation of digital practices is mediated by their positionality in the academic field, the epistemic culture of their departments and the implicit expectations of academic legitimacy [13]. The implications for viewing digitalisation for doctoral research suggest an understanding as socially engaged and symbolically saturated versus a simple set of tools. The tools a student chooses or avoids can carry meanings far beyond functionality, signalling competence, modernity or marginality within the institutional order.

This study approaches digital tool usage as a form of symbolic labour situated between institutional logic, social background and individual trajectory. Building on Bourdieu's theory of practice, the concept of digital academic habitus is proposed to capture the structured and structuring dispositions that shape doctoral students' engagement with technology [6]. These dispositions are not reducible to personal preference or digital skill. They emerge from life histories, cultural capital and the sociopolitical environments, in which students are embedded [14]. Within Russian academia, long and uncertain doctoral roles mean that digitalization is used not only to innovate but also to manage day to day pressures and to show professional status [15].

This study uses empirical data from Lobachevsky University in Nizhny Novgorod, a context shaped by post pandemic recovery, technological change, and international sanctions [16, 17]. The study employs a quantitative cross-sectional online survey of enrolled postgraduate candidates conducted from March to July 2025. The analysis addresses four questions: which digital tools are used most regularly, what forms of supervisory and institutional support and constraint are reported, what motivations shape visible use and whether patterns differ by stage in the programme. Mapping these patterns, the study operationalizes digital academic habitus and symbolic labour for survey use and identifies practical levers for training, supervision and access.

Literature review

Theoretical review: Bourdieu's theory of practice

Pierre Bourdieu's Theory of Practice gained much attention from sociologists in an effort to explain the way people's actions are shaped by their socioeconomic, educational backgrounds and the systems they work and live in [18]. The theory concepts of habitus, field, and capital show how doctoral students choose and use digital tools within academic life [19]. Habitus, as such here, refers to the ways of thinking, feeling, and acting that the individual forms throughout life experience. These patterns become so internalized that they seem normal [19]. The field is that place where quite structured arenas, like the university, would allow people to contend for their recognition and status [20]. In this field, different forms of capital, such as knowledge, networks, digital skills, or prestige determine how successful someone might be. For postgraduate students, especially those early in their journey, being confident with digital tools can offer symbolic capital, signalling competence and modernity [21]. However, not all students have the same opportunities to develop these skills. Their background, access to resources and the values of their discipline all influence how they engage with technology [21].

Many scholars support using Bourdieu's theory in digital education. In [22] it is shown how students, who are less familiar with technology, often feel excluded, not because of lack of access, but because of a mismatch between their background and digital expectations. Ignatow & Robinson [21] argued that Bourdieu's theory, though developed before the digital age, can still explain new forms of inequality brought about by technology. Schirone [16] also applied Bourdieu's ideas to show how digital ranking systems, like citation metrics, shape academic behaviour in similar ways to older forms of prestige.

Edgerton and Roberts [22], tried to clarify the difference between habitus and cultural capital in education. They agree that habitus is useful but warn against assuming people are fully shaped by their past. Indeed, some critics argue that Bourdieu's theory can seem too rigid. In these digital environments that change at breakneck speed, it would likely be a regrettable understatement to speak of the capacity of students to adapt, resist, or change in given situations [23].

There are worries, though, that these new platforms create a new sort of a space that does not fit very well into traditional academic disciplines. For instance, a student could get similar recognition by posting work to social media or by the effective use of AI tools, such forms of visibility do not usually comply with standard rules of being recognized academically. For the most part, scholars do not dismiss the theory in its entirety; they argue just for an updated version that will suit the digital environment today [17].

This study sees great relevance in Bourdieu's theory. It can be interpreted to explain why certain postgraduate students engage willingly with digital tools while others either struggle with digital tools or outright refuse to use digital tools. Their choices are shaped not just by skill but by their experiences, environment, and what they think is expected of them. The idea of a digital academic habitus social patterns, not just personal preference. In a Russian university affected by limited international digital resources, sanctions and post-pandemic challenges, this framework offers a meaningful way to understand how students navigate academic life and digital expectations.

Conceptual review

Digital tools in higher education and their use in Russian Academia

Higher education nowadays displays a variety of digital tools that helps students in research, collaborative, teaching or academic communication. Such tools range from Mendeley and Zotero reference managers to virtual meeting platforms like Microsoft Teams and Zoom, data analysis software, learning management systems, and the newest entry into higher education – the generative AI tools such as ChatGPT and Grammarly. These digital tools are increasingly central to how

doctoral students manage their workloads, write theses, analyse data, publish and collaborate with peers [24–26]. The ubiquity of these tools is supported by the high level of global connectivity, with over 66% of the world's population now using the internet (Fig. 1).

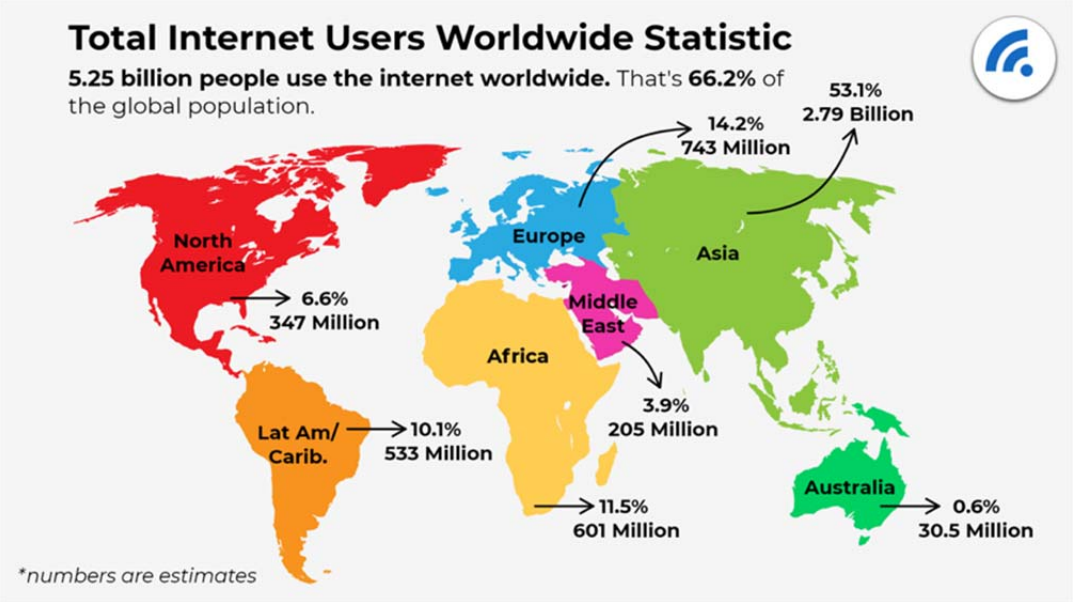


Fig. 1. *Total Internet users worldwide*[1]
Рис. 1. *Общее количество пользователей Интернета во всем мире*[1]

Globally, digital tools are promoted for improving efficiency, fostering innovation and strengthening engagement in academia. The Russian context differs in important ways. Russia is subject to extensive international sanctions that affect the economy and the digital services available to universities. These restrictions shape the academic digital ecosystem by influencing access, licensing and the stability of common platforms. Since the time of international sanctions, especially 2022, Russian universities and students have had restricted or blocked access to global platforms such as the Google Suite, Microsoft Teams, GitHub, Dropbox, and many other cloud-based academic services [27, 28].

These restrictions further isolating Russian academia digitally incited even greater improvisation or reliance on outdated systems among students and researchers. Many doctoral students use domestic alternative platforms (Fig. 2), unofficial VPNs, or peer-distributed software packages practices that illustrate digital fragmentation and the seeding of a semi-parallel research culture within Russia. In the words of Sherman [27], the "digital technology isolationist" policies of Russia are increasingly leading its universities toward a dependence on certain domestic technologies that are at times never integrated or evaluated at comparable international standards with the established system in the West [27].

The effects of sanctions also limit access to AI-based research tools, which are now rapidly transforming doctoral education globally [1, 29]. While AI offers potential support for writing, summarising, and coding tasks, its use is often restricted or discouraged in Russian institutions either for legal, ethical, or infrastructural reasons. Post-pandemic learning setups such as remote conferencing, digital peer collaboration, and cloud document sharing, which have gained international acceptance, remain constrained in Russian settings due to technological shortcomings and institutional uncertainty [30].

[1] Ginniaseelisabet. URL: https://ginniaseelisabet.pages.dev/mqatlcn-active-internet-users-in-world-2024-photos-atfvbpk/ (дата обращения 15.06.2025).

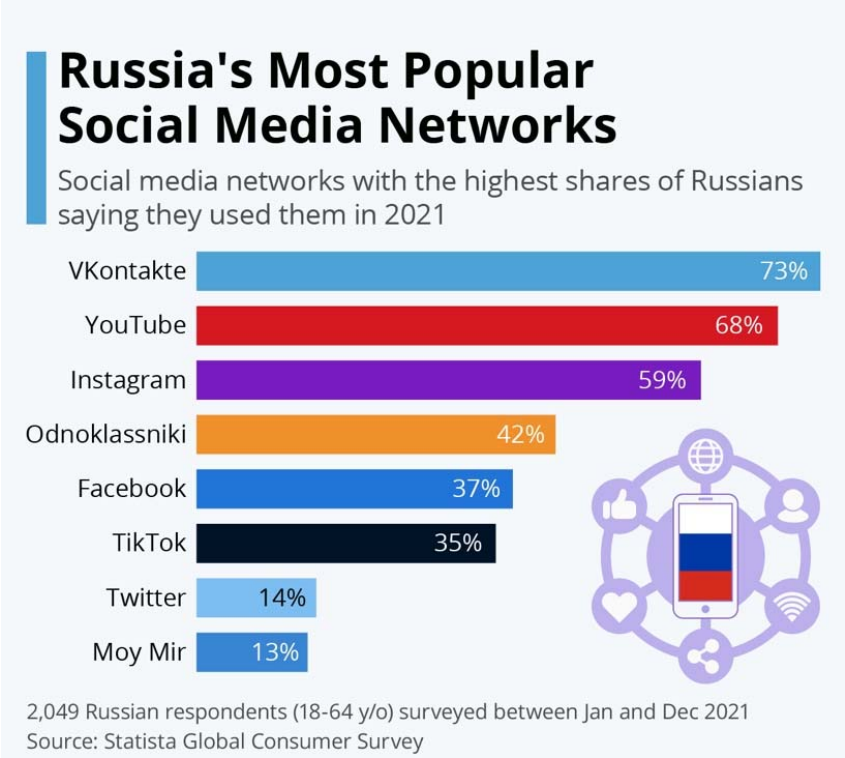


Fig. 2. *Most popular social Media Networks in Russia*[2]
Рис. 2. *Самые популярные социальные сети в России*[2]

Hence, the digital tools used in Russia are dependent not only on individual capabilities and preferences but also on systemic and geopolitical contingencies. For many doctoral students, digitalisation is less about embracing innovation and more about navigating fragmented access, informal workarounds, and symbolic performances of competence using whatever tools are available. This results in an environment where students are expected to maintain global scholarly standards while lacking access to the tools needed to meet those expectations. As in [31, 32] observed, these sanctions have produced both external isolation and internal pressure for self-reliance pressures that now define the digital academic field in Russia. Digital tools are no longer just technical aids; they became politically loaded and symbolically meaningful. Their usage (or absence) reflects deeper dynamics of academic marginalisation, technological nationalism, and adaptation under pressure. This reality must shape how we understand doctoral students' digital practices not only in terms of skills, but also as acts of symbolic labour performed in a fractured academic space.

Digital Academic Habitus

Digital Academic Habitus is the deeply ingrained attitudes, dispositions, and practices through which doctoral candidates interact with digital tools in academia. This theory of habitus embraces the belief that the environment of a student determines digital actions, not merely access or technical skills – they rather draw their meaning from the wider cultural, educational and institutional context. In academic life, these digital dispositions influence how students interpret the value, risks, and appropriateness of using tools like citation managers, academic databases and generative AI [33].

[2] Russia's Most Popular Social Media Networks. URL: https://www.statista.com/chart/26988/most-popular-social-media-in-russia/ (дата обращения 15.08.2025).

As Romele [33] explains, digital habitus is a product of social learning, cultural norms, and institutional values that determine how individuals perceive and use technology. This is significant both in academia and out. Digital practice also constitutes a form of symbol: and for students actually making use of, or avoiding the use of, digital tools, it's a signal that they are trying to conform to what they see as expected or legitimate in their field. Through previous educational experiences, combined with reinforcement from peers' interactions, feedback from supervisors, and the dominant tone of one's academic discipline, the habitus is gradually formed [33].

In Russian conditions, the national ones will further supplement the development of digital academic habitus. Kargapolova et al. [34] assert to have influenced the reading and information habits of Russian students through not only global but also domestic restrictions, such as limited access to international tools plus national digital infrastructure dependence. These have formed dissimilar patterns of digital engagement and reinforced differences in digital preparedness between students coming from different academic fields or institutions.

Digital academic habitus is also about how postgraduate candidates construe their roles as emerging scholars. According to Galimberti [35], tacit knowing-how develops an academic identity in students, such as unwritten rules for behavior, writing, and credulity in academic community participation. Digital tools such as Mendeley or Grammarly come to form part of such tacit knowledge. Some learn from them that by using these tools they will be perceived by others as professionals and modern scholars; others learn that by not using these tools they will be construed as culture or even by their supervisor's expectations [35]. Herut and Gorfu [36] argue too that a lack of digital intimacy could also lead students to procrastinate or lose confidence in their doctorate level graduation. Students then resort to procrastination on primary assignments, tend to be tensed excessively, particularly with little guidance, if they feel incompetent in using the online platforms [36]. In such cases, the habitus does not only guide behavior it can also generate emotional responses that shape students' ability to perform as scholars.

Meanwhile, global trends such as the integration of generative artificial intelligence (GAI) into academic life are reshaping the boundaries of the digital academic habitus. Research and writing are now making increased use of tools such as ChatGPT, Grammarly, and AI-based tools for summarization. As discussed in [37], GAI is all about the change it brings into the paradigm of knowledge management with respect to problems of ownership, creativity, and knowledge production. But all students are not responding in the same way to this kind of change. According to [38], GAI instruments may widen the economic disparities in academic engagement for some students by favoring those already confident in a digital environment.

As such, Akhtar elaborates on the complex challenges posed by the emergence of multimodal and highly defined language models to student learning and scholarly communication [39]. Some students view it as enabling their ability to self-learn and write better. Others, however, find it confusing, with ethical issues and even phobia of academic dishonesty associated with it. Most of all, how digital a student's academic habitus is ultimately determines whether they see AI as support, risk, or threat [39].

Even tools that appear neutral, such as Mendeley, take on different meanings depending on a person's academic habitus and profile. Preexisting beliefs often persist and can produce reluctance to adopt the tool. Limited early exposure to academic technologies among educators and students reinforces this hesitation [40]. This example highlights how the habitus mediates access, confidence, and learning outcomes in digital academic practice.

In this study, the concept of digital academic habitus is essential to understanding how doctoral students relate to digitalisation. Their practices reflect a mixture of background experience, peer influence, disciplinary culture, and institutional norms. Especially in contexts like Russia emerging tools is inconsistent students' digital behaviours are not just technical choices. They are socially situated responses to a changing and uneven academic field.

Symbolic labour in doctoral education

Symbolic labour refers to the amount of labour a postgraduate student exerts to appear competent, earn legitimate status, and perhaps another form of scholarliness within the academic field [41]. Where the scholarship dwelt traditionally on publishing, citations and knowledge of one's disciplines, with the onset of the digital age, those indicators have taken a new form by including use of digital tools as academic legitimacy [41]. Indeed, symbolic labour, nowadays brands itself with a mark of proficiencies for example: navigating platforms such as Zotero, NVivo, Grammarly, and writing assistants powered by AI; tools to represent today more than just technical support but professional identity. Using certain tools can signal modernity, innovation, or alignment with academic best practices. A doctoral student who manages references with Zotero, codes interviews in NVivo, or integrates AI-generated summaries into a literature review may be seen as skilled and future-oriented [41].

As Limna notes, NVivo is more than software, it represents a methodological choice that signals research seriousness and technical competence [42]. As mentioned in [43], doctoral students create their academic identity through visible performances of scholarly engagement, which have increasingly included digital fluency. However, symbolic labour is not always voluntary. Many doctoral students feel pressured to use tools they are not fully conversant with or do not feel fully prepared to use. Pressure emanates from anxiety over being seen as behind the times or being incompetent. Some overuse digital tools like an AI paraphraser or a writing assistant, not for improving content quality, but for imitating the expected academic standards, especially when working in a second language.

These dynamics illustrate how symbolic labour is often shaped by the hidden curriculum of academia: the unspoken rules that reward visible, performative competence while marginalising quiet learning or hesitation [44]. In contexts like Russia or other resource-constrained or geopolitically isolated environments, symbolic labour becomes even more pronounced. Students are caught between traditional university systems often hierarchical and resistant to change and global academic cultures that demand digital proficiency and innovation. Mhlongo et al. describe how uneven access to digital infrastructure, training, and support creates both barriers and performance anxiety [45]. They must incessantly inspect what they are expected to do, what could be considered acceptable or effective instruments, and how their use (or non-use) of those instruments will be construed by superior personnel or colleagues. According to Garbett's foundation theory, symbolic labour is the creation of forms of legitimacy or recognition within social fields via symbolic action [46]. Although his ethnographic studies were limited to analysing ritual in African communities, the idea is transferable to the academic domain that digital behaviours represent symbolic actions to amass cultural and symbolic capital. Thus, it is understood from symbolic work that the use of digital tools in doctoral education is not functional but performative. Doctoral students use digital tools within the academic field to establish themselves with credibility and to conform with institutional and discipline norms [46]. Such actions, which appear to be technical, are inherently social, embedded in power structures and shaped by students' position, resources, and the institutional environment.

Research methods

The study used a quantitative research method. A quantitative observational cross-sectional survey was the most appropriate design for this study because the aim was to estimate the prevalence and patterns of digital tool use and related dispositions at a single point in time and to compare subgroups without making causal claims, which aligns with standard guidance on survey-based quantitative research [47].

A self-administered online questionnaire was used to reach a dispersed doctoral population efficiently. This helped to minimise interviewer effects, standardise measurement and enable rapid data capture, consistent with current practice in web surveys [48]. The questionnaire contained Likert

type multi-item scales, measuring frequency of use, perceived support and theorised dispositions of digital academic habitus and symbolic labour. Internal consistency was evaluated and reported alongside descriptive statistics. Ethical and data protection procedures followed online survey best practices. The information page explained purpose, confidentiality, voluntariness and approximate completion time, consent was recorded, no identifiers were collected and only completed results were analysed and reported. This design yields a timely baseline profile of doctoral digital practice under current institutional conditions and provides actionable diagnostics for programme level improvement while acknowledging the limits of nonprobability sampling [48].

Discussion

Demographics characteristics

The demographic profile of the 47 doctoral respondents is summarised in Table 1, covering gender, field of study, year in programme, writing language and internet access. The cohort is majority female, plural across disciplines with a humanities plurality, skewed toward later years, predominantly writes in English and reports mostly reliable internet access.

Table 1. *Demographics of respondents*
Таблица 1. *Демографические данные респондентов*

Variable Переменная	Category Категория	Frequency Частота (n)	%
Gender/Пол	Female/Женский	25	53.2
	Male/Мужской	22	46.8
Field of study Область исследования	Humanities/Гуманитарные науки	10	21.3
	Business and Management Бизнес и менеджмент	8	17.0
	Education/Образование	6	12.8
	Natural Sciences/Естественные науки	5	10.6
	Social Sciences/Социальные науки	4	8.5
	Engineering and Technology Инженерия и технологии	4	8.5
	Medicine and Health Sciences Медицина и науки о здоровье	4	8.5
	Law/Право	3	6.4
	Arts and Design/Искусство и дизайн	3	6.4
Year in doctoral Programme Год в аспирантуре	4th year or above 4-й курс и старше	17	36.2
	3rd year/3-й год	15	31.9
	2nd year/2-й год	10	21.3
	1st year/1-й год	5	10.6
Language of academic writing Язык академического письма	English/Английский	21	44.7
	Russian/Русский	15	31.9
	Both/Оба	11	23.4
Reliable Internet access at home or hostel Надежный доступ в интернет дома или в общежитии	Yes/Да	28	59.6
	Sometimes/Иногда	16	34.0
	No/Нет	3	6.4

Source: compiled by author.
Источник: составлено автором.

From Table 1, 47 valid responses were received. Female respondents form the largest gender group with 25 respondents, which is 53.2%. Humanities is the most represented field with 10 respondents, or 21.3%, followed by lesser shares for other fields. Most of the participants are

fourth-year doctoral candidates and beyond, at 17 respondents, or 36.2%, indicating a mature doctoral cohort. From the respondents, English was the most common language in academic writing, with 21 respondents, or 44.7%. This reflects the international orientation of the doctoral community. For home or hostel Internet connectivity, 28 respondents, or 59.6%, said that theirs is reliable. This stands relevant to the interpretation of digital tool-use patterns.

Digital Academic Habitus

Likert scale coded 1 to 5 where 1 equal strongly disagree and 5 equals strongly agree. N equals 47.

The data is presented using a 5-point Likert scale where the abbreviations denote: SD (Strongly Disagree), D (Disagree), N (Neutral), A (Agree), and SA (Strongly Agree). Descriptive statistics are reported as the Mean (μ) and the Standard Deviation (SD).

Table 2. *Digital Academic Habitus of respondents*
Таблица 2. *Цифровой академический габитус респондентов*

Item/Элемент	SD	D	N	A	SA	Mean Среднее (μ)	SD
I feel confident using academic digital tools Я чувствую себя уверенно, используя академические цифровые инструменты	1	0	12	25	9	3.87	0.80
I was introduced to digital tools before joining the postgraduate studies Меня познакомили с цифровыми инструментами еще до поступления в аспирантуру	0	1	24	20	2	3.49	0.62
Using digital platforms feels natural to me Использование цифровых платформ кажется мне естественным	0	0	17	24	6	3.77	0.67
My academic background prepared me for digital research Моё академическое образование подготовило меня к цифровым исследованиям	0	1	20	24	2	3.57	0.62
My supervisors encourage the use of digital tools Мои руководители поощряют использование цифровых инструментов	0	0	12	25	10	3.96	0.69
My peers influence the tools I use Мои сверстники влияют на инструменты, которые я использую	10	12	19	6	0	2.45	0.97
I believe digital fluency is essential to being a good scholar Я считаю, что владение цифровыми технологиями необходимо для того, чтобы быть хорошим учёным	0	0	13	26	8	3.89	0.67

Source: compiled by author.
Источник: составлено автором.

Table 2 shows a generally positive digital academic habitus. Supervisor encouragement has the highest mean, M=3.96, with 53.2 percent agreeing and 21.3 percent strongly agreeing. The belief that digital fluency is part of scholarly identity is next, M=3.89, with 55.3 percent agreeing and 17.0 percent strongly agreeing. Self-reported confidence with academic digital tools is also high, M=3.87, with 53.2 percent agreeing and 19.1 percent strongly agreeing. Perceived naturalness of digital platforms is moderately high, M=3.77, with 51.1 percent agreeing and 12.8 percent strongly agreeing. Preparatory exposure is mixed. Prior introduction to digital tools before the postgraduate studies has M=3.49 with 51.1 percent neutral, while academic background that prepared respondents for digital research has M=3.57 with 51.1 percent agreeing and 4.3 percent strongly agreeing. Peer dynamics are weaker. Peer influence on tool choice has a low mean, M=2.45, with 21.3 percent strongly disagreeing, 25.5 percent disagreeing and 40.4 percent neutral, indicating limited peer driven adoption. Standard deviations are modest for the higher scoring items, SD 0.62 to 0.80 and larger for peer influence, SD 0.97, which suggests consolidated pro digital norms but

more variation in social influence. Overall, institutional support and internalised dispositions rather than peer pressure appear to drive digital engagement and early structured preparation could help equalise readiness across the cohort.

Table 3 presents the findings regarding symbolic labour, capturing the extent to which respondents use digital tools to manage their professional image, gain reputational advantages, or respond to perceived pressures within the academic field.

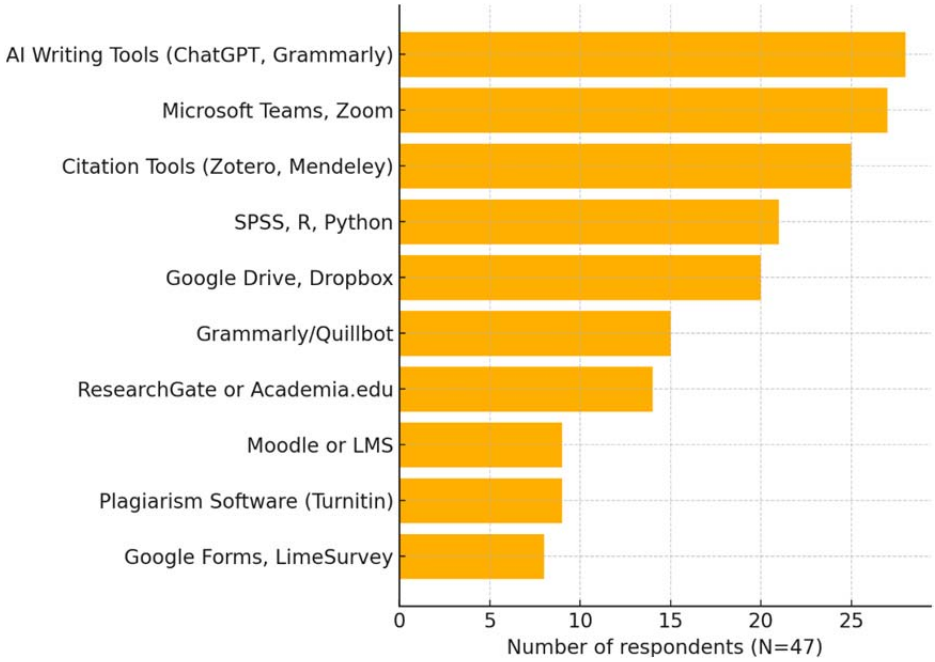
Table 3. *Symbolic labour*
Таблица 3. *Символический труд*

Item/Элемент	SD	D	N	A	SA	Mean Среднее (μ)	SD
I use digital tools to appear competent Я использую цифровые инструменты, чтобы казаться компетентным	0	1	20	21	5	3.64	0.70
I feel pressure to use tools I am not familiar with Я чувствую давление, вынуждающее меня использовать инструменты, с которыми я не знаком	10	14	20	2	1	2.36	0.94
I fear being seen as behind if I do not use certain platforms Я боюсь, что меня сочтут отстающим, если я не буду пользоваться определенными платформами	6	15	20	5	1	2.57	0.93
I use AI tools because others expect it Я использую инструменты ИИ, потому что другие этого ожидают	10	21	15	1	0	2.15	0.78
I sometimes pretend I understand certain tools Иногда я притворяюсь, что понимаю некоторые инструменты	14	18	10	4	1	2.15	1.02
I believe using digital tools improves my academic reputation Я считаю, что использование цифровых инструментов улучшает мою академическую репутацию	1	0	15	24	7	3.77	0.79

Source: compiled by author.
Источник: составлено автором.

Table 3 above indicates that reputational motives are prominent. The belief that digital tools enhance academic reputation has a high mean of 3.77, with 24 respondents, 51.1%, agreeing and 7 respondents, 14.9%, strongly agreeing. Using tools to appear competent is also elevated, mean 3.64, with 21 agreeing, 44.7% and 5 strongly agreeing, 10.6%. By contrast, coercive pressures are weak. Being forced to use unfamiliar tools has a low mean of 2.36, with 51.1% disagreeing or strongly disagreeing. Expectation to use AI records the lowest mean, 2.15, with 31 of 47, 66.0%, disagreeing. Self-presentation without real mastery is uncommon, mean 2.15, with only 5 of 47, 10.6%, agreeing or strongly agreeing. Overall, symbolic labour appears oriented toward gaining recognition rather than complying with pressure. Practice should therefore create legitimate routes to visibility, for example transparent showcases of real digital competence and supervisor verified portfolios, paired with targeted skills training and clear ethical guidance to reduce perceived pressure and discourage performative adoption.

Fig. 3 ranks the ten most used tools by respondent count. AI writing tools lead with 28 of 47 users, 59.6%, followed by Microsoft Teams or Zoom with 27 (57.4%) and citation managers with 25, (53.2%). Analytical software has 21 users, 44.7% and cloud storage has 20, 42.6%. Usage then declines to Grammarly with 15 (31.9%) and ResearchGate or Academia.edu with 14 (29.8%). Platform linked or administrative tools are least used, with Moodle and Turnitin at 9 each (19.1%) and Google Forms at 8 (17.0). The pattern shows a concentration in collaboration, writing and reference management rather than learning management or administrative platforms.



Source: compiled by author.
Источник: составлено автором.

Fig. 3. *Top 10 digital tools used by doctorial students*
Рис. 3. *10 лучших цифровых инструментов, используемых докторантами*

Table 4. *Challenges faced in using digital tools*
Таблица 4. *Проблемы, возникающие при использовании цифровых инструментов*

Item/Элемент	SD	D	N	A	SA	Mean Среднее (μ)	SD
Sanctions have limited access to academic platforms or tools Санкции ограничивают доступ к академическим платформам или инструментам	2	3	28	11	3	3.21	0.83
I rely on VPNs or local alternatives due to tool restrictions Я полагаюсь на VPN или локальные альтернативы из-за ограничений инструментов	1	5	28	10	3	3.19	0.80
I avoid tools because they are blocked or not supported in Russia Я избегаю инструментов, потому что они заблокированы или не поддерживаются в России	2	6	30	8	1	3.00	0.75
Technical issues affect my engagement Технические проблемы влияют на мою работу	2	11	31	2	1	2.77	0.70
I feel excluded from global academic platforms Я чувствую себя исключенным из глобальных академических платформ	6	14	27	0	0	2.45	0.72
My university provides limited digital training Мой университет предлагает ограниченное цифровое обучение	8	22	15	2	0	2.23	0.79

Source: compiled by author.
Источник: составлено автором.

Table 4 shows that neutral responses dominate across items, which suggests variation by context. The highest means are for sanctions that limit access, M=3.21 and for reliance on VPNs or local substitutes, M=3.19, with 14 and 13 respondents agreeing. This indicates that a subset uses access workarounds. Avoidance of blocked tools is mostly neutral, 30 of 47, but 9 agree, so substitution is

selective rather than complete. Technical constraints are also largely neutral, 31 neutral and 13 disagree, implying uneven infrastructure rather than a general failure. Feelings of exclusion from global platforms are low, mean 2.45, with no agreement. Perceived scarcity of institutional digital training is lowest, M=2.23, with 30 disagreeing, which aligns with earlier findings that supervisory support is strong.

Discussion

Digital academic habitus and supervisory climate

Respondents show a broadly positive digital academic habitus. Agreement is highest for supervisor encouragement at M=3.96 and for the view that digital fluency is part of being a good scholar at M=3.89. Self-reported confidence is also high at M=3.87. This pattern aligns with studies that link facilitating conditions and close leadership support to stronger intentions to use educational technologies. The UTAUT literature shows that social influence is weaker when use is voluntary, while perceived usefulness, and support structures carry more weight. Our data follow this pattern. Peer influence is low at M=2.45, and supervisor encouragement is strong. Reviews of UTAUT in higher education also find that performance expectancy and facilitating conditions dominate, with social influence adding little when there is no mandate.

The habitus lens offers a sociological reading of these results. When students view digital fluency as part of scholarly identity, their internalised dispositions and capitals are shaped by networked academic practice. Candidates who hold these dispositions are more likely to choose tools that match what they see as legitimate ways of doing research. The observed comfort with platforms and the high confidence among respondents are consistent with this theoretical frame.

Symbolic labour and reputational logics

Symbolic labour is evident in reputational motives. Believing that digital tools improve academic reputation scores high at M equals 3.77 and using tools to appear competent is elevated at M equals 3.64. At the same time, coercive dynamics appear limited because pressure to use unfamiliar tools is low at M equals 2.36 and using AI due to others' expectations is lowest at M equals 2.15. This configuration suggests performative use is more about accruing visibility and recognition than about conformity to external pressure. Recent scholarship characterises online visibility and influence as emerging forms of symbolic capital that sit alongside traditional academic metrics. Our results map onto that argument by showing reputational attitudes are salient even where explicit pressure is muted.

Tool engagement patterns and the rise of AI supported writing

AI writing tools are the most used category at 59.6%, closely followed by synchronous collaboration tools at 57.4% and citation managers at 53.2%. This ranking reflects global shifts in digital scholarship where generative AI and writing support tools are rapidly diffusing alongside established infrastructures for collaboration and reference management. Systematic reviews of ChatGPT in higher education report broad use for brainstorming, summarisation, translation and drafting, accompanied by concerns about integrity and disclosure. Surveys of researchers similarly document adoption focused on language support and idea generation. The profile in this sample fits those larger patterns.

Differences by gender and doctoral seniority

Regular use, defined as rating four or five, increases with programme seniority and is highest in year four or above, which is consistent with doctoral socialisation models that predict cumulative integration into digital research routines as students progress. Gender differences are small and

mixed across years, with females reporting slightly higher mean counts of regularly used tools in most years. Meta analytic work on gender and Information and Communications Technology (ICT) finds persistent but context dependent differences in use and skills, with gaps often narrowing in academic settings that provide comparable access and support. The modest differences observed here are consonant with that literature.

Contextual constraints and workarounds

Context matters strongly. Sanctions limiting access to platforms obtain the highest constraint mean at 3.21, and reliance on VPNs or local alternatives is close at 3.19. These scores indicate that a nontrivial segment must navigate restricted or degraded access. Since 2022 Microsoft has suspended new sales in Russia and subsequently moved to cease cloud services to Russian organisations in response to EU measures, both of which affect collaboration ecosystems such as Teams and Office cloud services. Independent reporting also documents periodic blocking of common VPN protocols, which complicates access workarounds. These external constraints provide a plausible backdrop for the neutral centring on avoidance of blocked tools at N equals 30 and for the prevalence of local substitutions that respondents mention in open comments.

Conclusions

The study collected data from 47 postgraduate candidates at the Lobachevsky University, Russian Federation. The study shows a generally positive digital habitus supported by strong supervisor encouragement and high confidence. Engagement concentrates on generative AI applications, collaboration platforms and citation managers. About sixty percent report reliable internet access, while the main constraints relate to platform access and workarounds linked to sanctions. Technical barriers and feelings of exclusion are mostly neutral. Regular use increases with programme seniority, although peer influence on tool choice is weak. Two anomalies remain salient. Regular use dips in year three, and many responses cluster at neutral on constraint items despite high uptake of collaboration tools. These patterns indicate uneven socialisation and point to clear institutional levers for Lobachevsky University, with lessons that other universities can adopt.

From the findings, the study made the following recommendations. First, Lobachevsky University should institute a staged digital research curriculum that begins with a compulsory onboarding module in the first semester and a required refresher in year three that directly addresses the observed dip in regular use. The content of this digital research curriculum should cover responsible use of generative AI, collaboration platforms, citation managers and secure data practice, delivered through short practical workshops with assessed tasks. The impact should be monitored through completion rates, pre and post confidence scores and a reduction in neutral responses on constraint items. Other universities can implement the same staged model through their graduate schools.

Also, The Graduate School should set explicit supervision standards for digital practice. Each supervisory team should be required to document agreed tool norms in the individual study plan and to review these at every progress meeting. The University should run monthly research clinics for supervisors that demonstrate transparent end to end workflows from literature search to write up and submission, and issue micro credentials for participation. Compliance can be audited through random checks of study plans and participation registers. Universities with similar structures can adopt the same policy to raise the quality and consistency of supervision.

Thirdly, the University should strengthen access, resilience and compliance on the use of digital tools. Actions include maintaining a vetted catalogue of approved tools with compliant equivalents, negotiating institutional licences where feasible, expanding campus connectivity support, securing access services and publishing clear offline workflows for analysis and writing during outages. A rapid response help desk should log requests, response times and resolutions and should produce

quarterly access reports for the Graduate School Board. Institutions facing platform volatility can use the same approach to protect continuity and equity.

Lastly, the study recommends that peer learning should be formalised and recognised in the University. The Graduate School should create small cross cohort digital practice circles that meet monthly under trained student facilitators, maintain a repository of vetted templates and how to guides and introduce an annual digital scholarship award to raise positive peer influence on adoption. Doctoral programmes should embed at least two peer exchange sessions per semester in their timetables and track participation and reported usefulness. Universities elsewhere can replicate this low-cost model to amplify peer effects where supervisor time is constrained.

Limitations and directions for future research

The cross-sectional design limits causal inference and the achieved sample of 47 restricts subgroup precision. Self-report may also inflate alignment with valued norms, particularly for symbolic labour items. Future work should triangulate survey responses with digital trace data and qualitative interviews to illuminate how reputational concerns, ethical norms and infrastructural constraints shape day to day practice. Longitudinal designs would help track changes in AI use across doctoral milestones and shifting access regimes.

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