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Evgeniia Shmeleva

Academic Dishonesty among Students at Russian universities:
Scale and Factors

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Igor Chirikov,
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INTRODUCTION

Research background

Academic dishonesty – i.e., plagiarism in written papers or copying from unauthorised sources on exams is widespread in universities across the world. These practices may negatively impact students, universities, and society. Academic dishonesty makes student assessment intrinsically unfair and reduces students' incentives to study diligently (Heyneman 2011; Gallant, Stephens 2020). It disrupts skills acquisition and distorts the signaling power of higher education in the labour market (Mavisakalyan, Meinecke 2016). The proliferation of academic dishonesty decreases the expected economic return from public and private investments in higher education, distorts the trustworthiness and prestige of the national higher education systems (Heyneman 2011; Altbach 2015). Moreover, academic dishonesty is contagious: students observing their peers getting away with cheating are more likely to cheat themselves during their studies (Fida et al. 2016) or, later, at the workplace (Nonis, Swift 2001; McCabe et al. 2012; Lucas, Friedrich 2005).

Researchers and policymakers are concerned about the high prevalence of academic dishonesty among students and seek to find ways to prevent or reduce it. They explore the reasons for students to cheat, the conditions under which cheating occurs, and what measures can be effective to affect its prevalence. Researchers find the links between academic dishonesty and student psychological characteristics, such as conscientiousness and agreeableness (Giluk, Postlethwaite 2015), moral development (Harding et al. 2007; Leonard 2017; Mayhew et al. 2009), tendency to rationalise behaviour (Stephens 2017; Rettinger 2017; Lee et al. 2020), self-efficacy (Ogilvie, Stewart 2010; Krou et al. 2020), and academic motivation (Anderman, Murdock 2011; Krou et al. 2020).

Recently, most of the current research has shifted focus to the contextual characteristics, forming a decision-making environment at university (McCabe et al. 2002; Pabian 2015). The studies find that academic dishonesty is related to the faculty

attitudes and actions which shape the classroom learning climate (Yu et al. 2016; Broeckelman-Post 2008), the peers' behaviour (McCabe et al. 2008; Megehee, Spake 2008; Ma, McCabe, Liu 2013), the availability and effectiveness of institutional measures to prevent and deter academic dishonesty (Arnold, Martin, Bigby 2007; McCabe et al. 2002), and students' understanding of academic ethics and regulation policies (Jordan 2001; Ma et al. 2013; McCabe et al. 2002). These factors acquire more and more attention since they are more open to administrative influence compared to individual student characteristics (McCabe and Trevino 1993: 536). Moreover, the researchers assume that academic dishonesty manifests itself situationally, rather than as an expression of the individual inclinations of students (Gallant, Stevens 2020).

The current studies show that academic dishonesty may be prevalent in Russian universities. Every sixth student believes that the majority of their college exams may be passed with the help of cheating and more than a third believe that a lot of their fellow students download written papers from the Internet (Maloshonok 2016).

Despite the pervasiveness of academic dishonesty in Russia, there are a few initiatives, both at the national and institutional level, that seek to curb academic dishonesty in higher education. At the institutional level, a handful of selective universities and departments have instituted honour codes or introduced specific punishments for plagiarism and cheating (for instance, at New Economic School¹ or the Higher School of Economics²). At the national level, the Ministry of Education and Science (MOES) has forced all universities to check all bachelor and master theses for

¹ New Economic School. The code of ethics. <https://www.nes.ru/ethics-code?lang=en>. Accessed October 24, 2020.

² Higher School of Economics. 2012. "Procedures for Applying Disciplinary Measures for the Violation of Academic Standards for Student Papers at the National Research University Higher School of Economics". <https://www.hse.ru/data/2015/08/13/1087393915/Appendix%207%20to%20Internal%20Regulations%20Disci..s%20for%20Violation%20of%20Ac%20Standards.pdf>. Accessed October 24, 2020.

plagiarism using plagiarism detection software³. However, there are many ways to bypass the plagiarism detection systems. In addition, there are concerns about the technical race for the originality of the text itself, which displaces the requirements for the quality of written papers (Stepanova 2017; Sevostyanov 2017).

Academic dishonesty in Russian universities

Important features of the Russian context are, first of all, a high level of domestic corruption (Transparency International 2017), as well as general tolerant attitudes to violations of academic ethics of the population (Maloshonok 2016). Researchers point to the common cultural roots of corruption and academic dishonesty (Magnus et al. 2002). Specific attitudes towards intellectual property rights in Russia can also determine tolerant attitudes towards plagiarism, which is not perceived as an act of theft of someone else's intellectual property (Radaev, Chirikov 2006; Golunov 2010).

The design of the higher education system also may contribute to a high prevalence of academic dishonesty among students. First, higher education institutions do not develop or enforce policies aimed at academic integrity, both at the national and institutional level. Honour codes or similar documents are virtually non-existent at Russian universities with few exceptions.

Second, there are no incentives for honest students to help maintain academic integrity among their classmates by reporting cheating students; whistleblowing is generally condemned (Magnus et al. 2002). Russian students study in administratively assigned study groups of 20-25 people throughout the period of their education; they attend all classes together. This leads to the development of a sense of belonging to the group and strengthens feelings of solidarity (Magnus et al. 2002). Cheating is therefore may be regarded as much less unethical compared to whistleblowing or a refusal to help a fellow student during an exam. In foreign studies, the likelihood of being reported by

³ Order of the Ministry of Education and Science of the Russian Federation of 29.06.2015 No. 636 “On approval of the procedure for the state final attestation for higher education programmes - bachelor's degree programmes, specialist programmes and master's programmes”.

other students is considered to be a substantial factor of academic dishonesty (McCabe et al. 2008).

Third, there are currently not enough incentives for faculty to combat cheating. Conversely, since university budgets depend on the number of enrolled students (Abankina et al. 2016), university faculty are pressed in this institutional environment to tolerate cheating. Very often they are advised by administrators not to give students failing grades for academic dishonesty so that these students can continue to be enrolled at the university because if enrollment declines by more than 10% during the period of study, the university will be deemed to have failed its government order (Zagirova et al. 2019). In case the maximum dropout rate allowed is exceeded, the institution will have to pay the funding back to the government and face the risk of state budget cuts in the future. Moreover, it may increase the faculty workload due to the need for additional exams (retakes and commissions).

Fourth, outdated teaching and grading methods contribute to the development of academic dishonesty. Russian students spend a lot of time at lectures, taking notes, copying, or taking pictures of PowerPoint slides (Chirikov 2015). Their major goal as learners is to memorize material and correctly reproduce it on exams in the way that their instructors expect. Therefore, it is not surprising that copying from cheat sheets or from others during the exams or while preparing a term paper has become so widespread.

Researchers find a striking consistency between student and faculty perceptions of the acceptability of academic dishonesty. The results of a qualitative study indicate that there is a tacit, voluntary collusion between students and faculty in relation to academic dishonesty (Titaev 2012). This concept is related to the concept of “disengagement compact”, which is more often used in the context of research on higher education (Kuh 2003; Frumin, Dobryakova 2012). Both terms describe a situation in which students do not make high demands on the quality of teaching, and faculty simplify the process of evaluating students' knowledge and turn a blind eye to

academic dishonesty. Research also indicates that both students (Chirikov 2015) and faculty are generally satisfied with this situation and do not seek to change the status quo (Froumin, Dobryakova 2012).

There are few studies on academic dishonesty in Russia, most of them are speculations about the causes and possible measures to combat it without using empirical data to test the hypotheses. Possible reasons for plagiarism, for example, are discussed in publications by Nikitov, Orchakov, Chekhov (2012) and Golunov (2010). The authors especially highlight the development of the Internet and technologies as the reasons for the expansion of plagiarism in Russian universities. Attempts at the classification of causes of academic dishonesty have been taken by Efimova and Chicherova (2012). Measures to combat academic dishonesty are discussed in the papers of Efimova (2013), Herzen (2013), Makarov and Vakhrushev (2014).

Existing empirical studies of academic dishonesty in Russia identify a link between academic dishonesty and student individual characteristics such as academic motivation or career plans (Gizhitsky, Gordeeva 2015; Sivak 2006), academic performance (Borisova, Polishchuk, Suvorov 2014). In addition, research reveals a link between academic dishonesty and the characteristics of the educational environment – namely, the perceived faculty behaviour (Sivak 2006; Radaev, Chirikov 2006) and behaviour of fellow students (Borisova, Polishchuk, Suvorov 2014).

There is also evidence that students become more academically dishonest over the course of their university studies (Denisova-Schmidt Huber, Leontyeva 2016). It contrasts with foreign studies (mainly US-based research), which, on the contrary, record a lower prevalence of academic dishonesty among students in their final years of study (Mayhew et. al 2016; McCabe et al. 2012). Researchers attribute this effect not only to the maturation but also to the specific college experiences that promote the values of academic integrity and honesty (Ibid.). However, the Russia data are cross-sectional and do not allow to draw convincing conclusions about the individual dynamics of student attitudes and cheating behaviour.

Existing research on academic dishonesty also has a number of methodological limitations. First, most of studies focus on exploring individual characteristics of students, without controlling for the characteristics of the educational environment. This may lead to an overestimation of the contribution of individual-level factors. Second, they are mainly based on small samples of students from one or two universities, which reduces the external validity of the results and does not allow estimating the effects of contextual factors.

Literature review: theoretical approaches

Academic dishonesty is “an intentional act of dishonesty, in which a student seeks to claim credit for the work or efforts of another without authorization or uses unauthorised materials or fabricated information in any academic exercise” (Gehring and Pavela 1994: 5). This study focuses on two of the most studied types of academic dishonesty (Mavisakalyan, Meinecke 2016) – cheating on tests/ exams and plagiarism in written papers. Cheating on exams is defined as using unauthorised materials on exam or test including paper cheat sheets, electronic devices, and other students’ help. Plagiarism in written papers comprises using fragments and ideas from other sources without any references, turning in papers written by someone else (for pay or not).

Theoretical approaches used to explain academic dishonesty among students distinguish student personal characteristics and contextual characteristics forming decision-making environment. One perspective links cheating decision-making to the individual moral judgement development and changes in moral, ethical reasoning (Harding et al. 2007; Leonard 2017; Mayhew et al. 2009). The studies show that students make considerable progress in their moral development at university resulting in more ethical behaviour by the end of studying suggesting that educational experience stimulates moral development (King, Mayhew 2002). Research also indicates that students with higher level of conscientiousness and agreeableness⁴, as well as those

⁴ Conscientiousness and agreeableness are two of the Big-five personality traits (Giluk, Postlethwaite, 2015).

with higher intelligence, are less likely to commit academic dishonesty (Cuadrado, Salgado, Moscoso 2020; Giluk, Postlethwaite 2015). Another perspective focuses on student academic purposes affecting their propensity to cheat: achievement goal theory, expectancy-value theory (Anderman, Murdock 2011; Murdock Anderman 2006; Yang, Huang, Chen 2013). These theoretical frameworks highlight the role of student goals, values and outcome expectations in determining their approach to learning: “cheating can be viewed as a viable strategy to attain extrinsic or performance goals” (Murdock, Anderman 2006, 131). Students may also consider cheating if they have low confidence in their abilities to complete tasks and do not expect to succeed – have low self-efficacy (Murdock, Anderman 2006).

Studies that emphasize the importance of contextual factors identify five key factors: perceptions of fellow students’ behaviour (descriptive norms), perception of the likelihood of punishment for academic dishonesty, perception of the likelihood of being reported by other students, and perception and understanding of the university rules and policies regarding academic dishonesty (McCabe et al. 2008).

The effect of faculty and fellow students’ behaviour on academic dishonesty is often conceptualized based on social contagion theory and social learning theory which stress the role of prescriptive and descriptive norms perceived as a result of observing others’ behaviour (Ma, McCabe, Liu 2013; McCabe, Feghali, Abdallah 2008; McCabe, Trevino 1993; Megehee, Spake 2008). Many empirical studies find a strong link between individual academic dishonesty and the perception of fellow students’ behaviour – descriptive norms (Ma et al. 2013; McCabe et al. 2008; Megehee, Space 2008). The salience of the effect of descriptive norms may vary depending on the values prevailing in the culture in which the student is studying. The studies suggest that students from collectivistic countries are more likely to commit academic dishonesty (Magnus et al. 2002; McCabe et al. 2008; Chudzicka-Czupała et al. 2015). The authors attribute this to the difference in the value that in-group norms carry for individuals in

collectivistic and individualistic countries (McCabe et al. 2008; Chudzicka-Czupala et al. 2016).

Faculty behaviour also may contribute to the prevalence of academic dishonesty at Russian universities (Lang 2013). Faculty may deter students from academic dishonesty by reducing opportunities to cheat (Simon et al. 2004; Yu et al. 2017), treating cases of dishonesty seriously and fairly (Simon et al. 2004; Yu et al. 2017), verbally emphasizing academic integrity before examinations (Broeckelman-Post 2008), randomly assigning seats before examinations (Denisova-Schmidt 2017) or increasing clarity and relevance of instruction (Murdock et al. 2007; Teodorescu and Andrei 2008). The importance of faculty in deterring academic dishonesty by implying more strict punishments for cheating is emphasized in a variety of studies (Michaels, Miethe 1989; McCabe et al. 2002; broeckelman-Post 2008; Yu et al. 2017). That being said, faculty tend to be reluctant to address student dishonesty because of the psychological costs of dealing with student cheating, the direct and indirect costs associated with proving dishonesty, and the lack of real or perceived institutional support (Coalter et al. 2007; Keith-Spiegel et al. 1998; Thomas and De Bruin 2012).

The mechanism for deterring cheating and plagiarism in such studies is described through the theories that consider academic dishonesty by analogy with the crime, the decision on which is made as a result of the cost-benefit calculations. Deterrence theory emphasizes the role of severity, certainty, and celerity of punishments in deterring individuals from violating rules or laws (Ogilvie, Stewart 2010). The theory of reasoned action takes into account the benefits of academic dishonesty in addition to the costs (Ajzen, Fishbein 1980). The extension of these aforementioned theories – the theory of planned behaviour – considers perceived behavioural control as a predictor of academic dishonesty (Ajzen 2012).

The theory of planned behaviour is one of the most popular theoretical frameworks used to explain academic dishonesty and integrates both individual and contextual factors (Anitsal et al. 2009; Fishbein, Ajzen 2011; Simkin, McLeod 2010;

Camara et al. 2017). According to this theory, academic dishonesty is preceded by an intention to commit it, which is formed based on the beliefs that determine attitudes to academic dishonesty, the perception of subjective norms, and the perception of behavioural control – the ease or difficulty of carrying out actions (Beck, Ajzen 1991).

Another theory that combines a focus on individual and contextual factors is the motivational theory proposed by Murdock and Anderman (2006) who synthesised the results from the previous correlational and quasi-experimental studies on academic dishonesty. This theoretical framework considers academic dishonesty as motivated behaviour, the decision-making of which is related to 1) the goals pursued by students during their studies; 2) the perceived extent to which they can be achieved; and 3) perception of the costs associated with committing the cheating practices.

Theoretical framework of the study

This study focuses on three factors of academic dishonesty – faculty and fellow student attitudes and behaviour towards academic dishonesty and student academic motivation. Deterrence theory, the theory of planned behaviour, and motivational theory developed by Murdock and Anderman (2006) provide theoretical basis for linking these factors to academic dishonesty. To measure academic motivation, we rely on the self-determination theory (Ryan, Deci 2000), in which academic motivation is understood as the reason for the initiation and regulation of learning activities.

Exploiting nationally representative data, we expect to find a high level of tolerance of students and faculty towards academic dishonesty, which is manifested in the high prevalence of cheating and plagiarism among students, and the preference of faculty for mild forms of punishment (for example, verbal warning or a grade reduction). Previous studies indicate a high prevalence of academic dishonesty in Russia but rely on non-representative samples of students of a few universities (e.g., Magnus et al. 2002; Grimes 2004; Sivak 2006; Radaev, Chirikov 2006; Denisova-Schmidt, Huber, Leontyeva 2016; Malashonok 2016).

We suggest that the senior students are less likely to cheat, due to their maturation and moral development (Lee et al. 2020). Previous studies in Russia indicated the inverse relationship but were based on cross-sectional data (Denisova-Schmidt, Huber, Leontyeva 2016).

Based on the provisions of the deterrence theory (Ogilvie, Stewart 2010), the theory of planned behaviour (Ajzen, Fishbein 1980; Beck, Ajzen 1991), and motivational theory (Murdock and Anderman 2006), we hypothesize that the prevalence of academic dishonesty among students is negatively related to the costs associated with academic dishonesty – with the probability and severity of punishment by faculty. Although there is a theoretical justification for the effect of the threat of punishment in deterring academic dishonesty, there are studies that do not find this relationship. Some studies show a positive relationship between student academic dishonesty and the threat of punishment (Broeckelman-Post 2008; McCabe, Trevino 1993; Michaels, Miethe 1989; Yu et al. 2017), some do not find a connection or indicate a positive relationship (Harding et al. 2007; McCabe et al. 2006; McCabe, Treviño 1997; Passow et al. 2006).

The researchers suggest that the threat might not be a significant predictor if there are no substantial constraints for students to cheat, for example, if academic integrity is weak or the academic dishonesty-related policies are not enforced. (McCabe et al. 2002). In other words, students, observing the unpunished behaviour of their classmates, can rely on the observed norms among students, regardless of the subjective perception of the probability of being detected and punished (Freiburger et al. 2017).

In this study, we expect to find a positive association between student academic dishonesty and perceived descriptive norms. In previous studies conducted in countries with more salient collectivistic orientation (where in-group norms have a higher value), such as Ukraine and Lebanon, the perception of other students' behaviour was the most significant factor of academic dishonesty (McCabe et al. 2008; Chudzicka-Czupala et al. 2015). In the context of the high prevalence of academic dishonesty in Russia, the

deviation of students from the norm of cheating may entail greater costs, which manifests the "coordination effect" (Magnus et al. 2002).

Based on the motivational theory of Murdock and Anderman (2006), we test the hypothesis of a negative relationship between student academic motivation and the prevalence of academic dishonesty. Previously, domestic studies recorded the relationship, but did not take into account the characteristics of the educational environment (Gizhitsky 2014; Gizhitsky, Gordeeva 2015).

To measure academic motivation, we rely on the theory of self-determination (Ryan, Deci 2000), in which learning motivation is understood as the reason for the initiation and regulation of learning processes. This conceptualization of academic motivation distinguishes not only internal and external motivation, but also offers an extended typology that takes into account the multiplicity of academic motives.

Objective of the study

The objective of the study is threefold:

1. to estimate the scale and dynamics of the prevalence of academic dishonesty among students of Russian universities;
2. to identify faculty actions in response to these practices;
3. to estimate the relationship between student academic dishonesty and the following factors:
 - 3.1 perception of fellow students' behaviour (descriptive norms);
 - 3.2 faculty actions in response to academic dishonesty;
 - 3.3 student academic motivation.

RESEARCH METHODOLOGY AND DESIGN

Four sets of secondary quantitative data were used as an empirical basis for this study.

1. Nationally representative survey of students and faculty (hereinafter – the dataset “MEMO student data”, “MEMO faculty data”)

Within the project “Monitoring of education markets and organizations” (MEMO) implemented by the National Russian University – Higher School of Economics, a survey was conducted among students (N = 2 978) and faculty (N = 1 507) from 99 Russian universities in 2014. Students answered questions about their socio-economic background, educational experience at university, career and educational plans, as well as their experience of academic dishonesty⁵. Faculty answered questions about the actions they take in response to plagiarism and cheating on exams⁶, about their perception of how common these practices among students⁷, and how they approach detecting plagiarism in student papers⁸. The detailed information about the survey questions can be found in Shmeleva (2016).

Based on these questions, we estimated the scale of cheating and plagiarism in Russian universities, identified typical actions of faculty in response to plagiarism and cheating, identified factors of student academic dishonesty at the individual level, as well as contextual level – constructed on the basis of faculty responses using the

⁵ Question “What of the following have you done at your university in the last 12 months (2014)?” is a checklist format question with a list of academic dishonesty practices.

⁶ Question “If you found out that a student cheated on an exam, how would you likely react?”, answer options range from “Give an unsatisfactory grade” to “Do nothing”; “If you found out is an explicit plagiarism in a student paper, how would you likely react?”; answer options range from “Give the student a failing grade and report to the department about the incident” to “Do nothing”.

⁷ Question “How often in your institution students ...?”; answer options “Never”, “Occasionally”, “Often”.

⁸ Question “Does your institution enforce mandatory checks of student papers (diploma, courseworks, essays, etc.) for plagiarism, borrowings from published texts (including from the Internet), student papers of past years? If not, do you carry out such checks yourself?”, answer options from “At our institution, all written student works are subject to a mandatory plagiarism check” to “At our institution, no such checks are carried out and I personally do not do them either”.

Principal Component Analysis. Binary logistic regressions were used to analyze the factors of academic dishonesty.

The results of the analysis are presented in the paper: Shmeleva E. Plagiarism and Cheating in Russian Universities: the Role of the Learning Environment and Personal Characteristics of Students // Educational Studies Moscow. 2016. No. 1. P. 84-103.

2. Cross-sectional survey of students of leading Russian universities (hereinafter - the dataset “Students of leading universities - cross-sectional data”)

As part of the inter-university research project “Trajectories and experience of Russian University students”, a survey of students (N = 15 159) from eight leading highly selective Russian universities participating in the “5-100” program⁹ was conducted in Fall 2015. Students who voluntarily participated in the study answered questions about their educational experience at university, in particular about the frequency of committing academic dishonesty practices¹⁰, their attitudes towards these practices¹¹, the perception of the prevalence of these practices among their fellow students¹², and the perception of the severity of punishment for these practices by

⁹ Project 5-100 was launched in 2013 in accordance with the Presidential Decree of the Russian Federation “On measures to realize state policy in the sphere of education and science”. Under this project, 21 highly selective Russian universities received financial support to maximize their positions in the global research and education market. The link to the project description: <http://5top100.com/>.

¹⁰ Question “How often during this academic year did you...”, 1) copied from other students on exams, tests, 2) used cheat sheets on exams, 3) accessed materials downloaded to the mobile phone during exams; answer options “Never”, “1-2 time”, “3-5 times”, “More than 5 times”.

¹¹ Question “If a student is caught using cheat sheets (including electronic devices) or copying from other students during an exam or test, what should the instructor do?”, answer options from “Do nothing” to “Fail the student”, and “Do not know”; question “If a student is caught plagiarizing in a written assignment, what should the instructor do?”, answer options from “Do nothing” to “Inform the department about the incident”, and option “Do not know”.

¹² Questions “What proportion of your classmates regularly do the following ...?” 1) “Turn course assignments with fragments copied from other papers or books (including online sources) without any references”, 2) “Use cheat sheets (including electronic devices) or copy from other students during an exam or test”; answer options from “0%-25%” to “76%-100%”.

faculty¹³. The detailed information about the survey questions can be found in Maloshonok, Shmeleva (2019).

Applying the theory of planned behaviour, as well as using the method of structural equation modelling, as done in the previous studies (for example, Mayhew et al. 2009, AL-Dossary 2017), we estimated the relationship between the frequency of committing academic dishonesty practices and students' personal attitudes about academic dishonesty, the perception of their fellow students' behaviours well as the perception of the severity and likelihood of punishment for plagiarism and cheating by faculty.

The results of the analysis are presented in the paper: Maloshonok N., Shmeleva E. Factors Influencing Academic Dishonesty among Undergraduate Students at Russian Universities // *Journal of Academic Ethics*. 2019. Vol. 17. No. 3. P. 313-329.

3. Longitudinal survey of students of leading Russian universities (hereinafter - the dataset “Students of leading universities - longitudinal data”)

Within the inter-university research project “Trajectories and experience of Russian University students”, two waves of surveys were conducted among students of four leading highly selective universities participating in the “5-100” program – in Fall, 2015 (N = 1 149) and again in Spring, 2016 (N = 914). The response rate of the second wave was 78%. In the first wave, the level of academic motivation was measured using tools developed by Vallerand and his colleagues (Vallerand et al. 1992), as well as student academic engagement and perception of academic norms at their university. The second wave assessed academic motivation using tools validated by Gordeeva, Sychev, and Osin (2014), student academic engagement, self-reported academic

¹³ Questions “How common are the following practices in your university?” 1) “Instructors at my university will remove a student from the classroom if they find them cheating during an exam or test”; 2) “Instructors at my university will give bad grades if they detect plagiarism in written assignments”, answer options from “Nobody does this” to “Everybody does this”.

performance, frequency of committing academic dishonesty¹⁴, and contextual characteristics – the perception of the prevalence of these practices among fellow students¹⁵, as well as the perception of faculty actions in response to plagiarism and cheating¹⁶. The detailed information about the survey questions can be found in Shmeleva, Semenova (2019).

Data from the longitudinal survey were used to assess the relationship between academic dishonesty and the level of academic motivation measured in the first and the second semesters of the first year, as well as factors related to the perception of faculty and fellow student behaviour. The theoretical framework proposed by Murdock and Anderman (2006) was used as a theoretical foundation for linking academic dishonesty, academic motivation, and the perception of the costs of committing academic dishonesty. The methodology proposed in the work of Sheldon and colleagues (Sheldon et al. 2017) was used to construct the index of academic motivation (Relative Autonomy Index) measured in the second wave. The relationship was estimated using ordinal logistic regressions, in which the dependent variables were the frequency of plagiarism and cheating.

The results of the analysis are presented in the paper: Shmeleva E., Semenova T. Academic Dishonesty among College Students: Academic Motivation vs Contextual Factors // Educational Studies Moscow. 2019. No. 3. P. 101–129.

4. Nationally representative survey of engineering students and their faculty (hereinafter - the datasets “SUPER-test student data 1”, “SUPER-test student data 2”, “SUPER-test faculty data”)

¹⁴ As in the dataset “Students of leading universities - cross-sectional data”.

¹⁵ Question “What proportion of your classmates regularly do the following ...?”; answer options from “No one does it” to “Everybody does it”.

¹⁶ Question “How would you estimate the probability of the following situations at your university?”, (1) “Instructors at my university will remove a student from the classroom if they find them cheating during an exam or test”; (2) “Instructors at my university will give bad grades if they detect plagiarism in written assignments”; and (3) “Instructors will check my written assignment (e. g. essay or report) for plagiarism”; answer options “Low”, “Moderate”, “High”, “Do not know”.

Within the international longitudinal study of the quality of engineering education “Study of Undergraduate Performance” (SUPER-test)¹⁷, students majoring in electronic engineering and computer science and their faculty from 34 Russian universities were surveyed. Three datasets were generated during this study. The basis of the dataset “SUPER-test – student data 1” was a representative survey of first-year students (N = 1 320) that took place in Fall 2015. The data set “SUPER-test student data 2” is based on longitudinal data from two surveys, the first of which was conducted in Fall 2015 on a representative sample of third-year students, the second – in Fall 2016, when these students were studying in the fourth year (N = 1 016). The response rate in the second wave was 88%. The third data set “SUPER-test faculty data” was formed on the basis of a survey of faculty (N = 533) who taught the third-year students mathematics and physics courses in the first two years of their studies in 2013-2015, which accounted for about 80% of the total academic load of students. Faculty responses were weighted by the respective credit hours allocated to each faculty member’s course and matched with the third-year students’ responses. Faculty responses were aggregated and weighted by the respective credit hours allocated to each faculty member’s course using the methodology proposed by Bettinger and Long (2005) and matched to the third-year students’ responses (“SUPER-test student data 2”).

The current study used the student answers to questions about their socio-economic background, their educational experience before admission (type of school where they studied, Unified State Exam scores in math), the characteristics of their current studies (major, type of funding for a place), as well as their attitude towards cheating on exams¹⁸. The study also used faculty answers about their gender, age,

¹⁷ More details on the SUPER-test project in Loyalka et al. (2019).

¹⁸ Question “If a student is caught cheating on an exam, what should the faculty member do?”; answer options from “Do nothing” to “Give the student a failing grade and inform the department about the incident”, and option “Do not know”.

pedagogical experience, degree, position and typical reactions to cheating on exams¹⁹. The detailed information about the survey questions can be found in Chirikov et al. (2019).

Information about the institutional characteristics of higher education institutions – the ratio of the number of faculty and students and the amount of funding per student was obtained from the data of the project “Monitoring of the effectiveness of higher education institutions”, collected in 2016.

The described data were used to assess the scale of student tolerance for cheating among students and faculty, to assess the dynamics of individual attitudes of students over the course of studying, and to estimate the effect of strict actions of faculty in response to cheating on the student attitudes towards cheating. The theoretical justification of the relationship between the severity of punishment and academic dishonesty was provided by the theory of deterrence. To estimate the latter effect, we used a series of binary logistic regressions with adjusted standard errors using the Huber-White estimator (Freedman 2006).

The results of the analysis are presented in the paper: Chirikov I., Shmeleva E., Loyalka P. The role of faculty in reducing academic dishonesty among engineering students // *Studies in Higher Education*. 2020. Vol. 45. No. 12. P. 2464-2480.

¹⁹ Question: “If you found out that a student cheated on an exam, how would you likely react?”; answer options from Do nothing” to “Give the student a failing grade and inform the department about the incident”, and option “Do not know”.

LIMITATIONS OF THE STUDY

This study has a number of limitations that must be taken into account when extrapolating its results.

1. Self-report data and sensitivity issues. The scale of academic dishonesty may be underestimated in this study, as it relies on student self-reported data. Students may misjudge their frequency of committing cheating practices, both as a result of the effect of social desirability and as a result of natural forgetfulness of particular cases of plagiarism and cheating. In part, the sensitivity of the questions in surveys was reduced by using an indirect question about the students' expectations of how the faculty should react, if encountering a cheating which was used to measure student attitudes towards academic dishonesty (in SUPER-test data).

2. Limited set of parameters considered. The author of the dissertation research had limited opportunities when developing measurement tools. In particular, it was not possible to add scales that measure student moral attitudes and beliefs, such as moral obligation or moral judgment, the salience of which is negatively associated with academic dishonesty (for example, Chudzicka-Czupala et al. 2015; Harding et al. 2007; Mayhew et al. 2009). However, these characteristics may have little effect in the Russian context, taking into account that most students do not consider cheating unethical and perceive it as a socially acceptable way to achieve their educational goals (Grimes 2004). In such circumstances, academic dishonesty may be determined, not so much by moral principles, but by established social convention, in other words, by observed norms of behaviour (Murdock et al. 2007).

In addition, the study does not take into account the experience of academic dishonesty prior to entering the university. However, the randomised sampling in the SUPER-test project randomises the prior cheating experience as well as eliminating the possible effects of prior cheating on the relationships between academic dishonesty and explored factors.

3. Limited degree of detail. The study does not allow for a high degree of detail and identification of situational factors related to the peculiarities of courses and classroom climate features. First, the study does not answer questions about what elements of course design contribute to reducing academic dishonesty, and whether the perceived usefulness and interest of the discipline matters for the prevalence of academic dishonesty. The lack of qualitative data – data from interviews with students and faculty – does not allow us to take into account the ambiguity of academic dishonesty practices and reflect the blurring boundaries of these practices from student and faculty perspectives. One of the studies that offers a more extensive, but less generalisable results, is a qualitative study of Dremova and her co-authors (Dremova et al. 2020).

4. A lack of data on the faculty perspective. In this study, we only partially considered the factors of faculty tolerance towards academic dishonesty. In the study based on SUPER-test data, we isolate the effect of faculty intolerant attitudes by controlling in the regressions for their individual characteristics, such as gender, teaching experience, type of employment contract, and so on. Other studies indicate that faculty tend to take an accusatory position towards students, as well as reject their responsibility in maintaining student academic motivation (Terentyev, Gruzdev, Gorbunova 2015). Their understanding of their role can help us understand why they respond to academic dishonesty in one way or another. Future research needs to clarify under which conditions faculty are more likely to impose stricter punishments for academic dishonesty and how they justify their behaviour.

MAIN FINDINGS

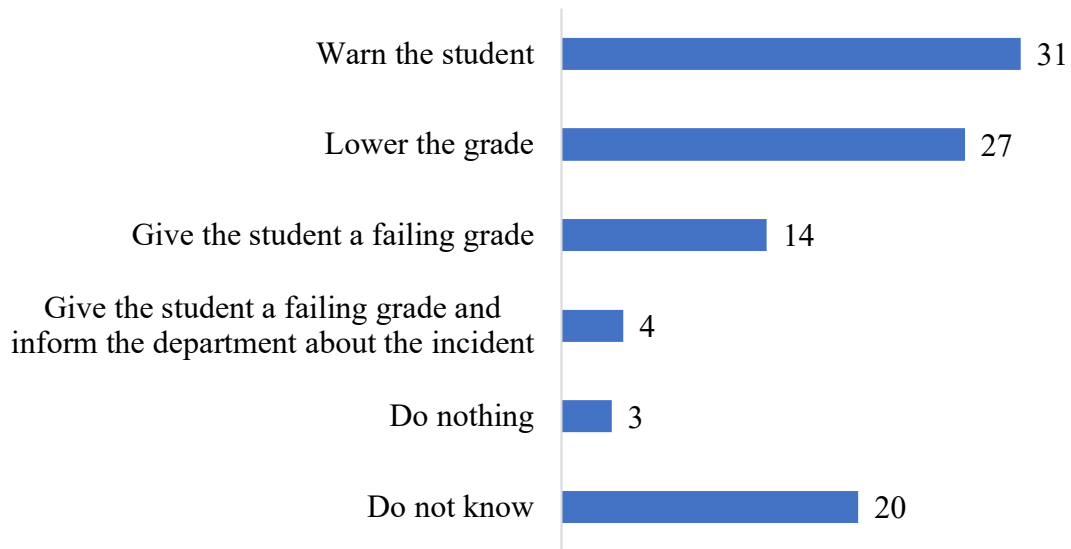
Scale and dynamics of academic dishonesty

The data obtained indicate that 29% of students of Russian universities cheated during exams²⁰ at least once during the academic year, and the same share plagiarised²¹ in their written papers (MEMO student data). Data from a survey of students from highly selective universities (“Students of leading universities - cross-sectional data”) indicate a higher prevalence: more than half of students (56%) reported cheating during the exam at least once during the academic year, about a third allowed other students to copy their answers, and 84% used other people's ideas or text fragments in their written papers without reference to the source. The practice of submitting works made by others (58%) is much more common than the practice of submitting works downloaded from the Internet (8%).

Since direct questions about academic dishonesty can be sensitive for students and lead to an underestimation of the real scale, in one study, instead of a direct question, we asked about student attitudes towards cheating. Following earlier research that measured attitudes to academic dishonesty using questions about fair punishment (Brimble, Stevenson-Clarke 2005; Levy, Rakovsky 2006; Newton 2016), we asked students similar question about cheating. The data showed that the majority of students are tolerant of cheating on exams (“SUPER-test student data 1”): 82% of first-year students favor lenient punishments for academic dishonesty (or none at all) (Picture 1). Almost one in three students (31%) consider a verbal warning to be an adequate penalty for cheating, and only one in six students supports severe penalties for cheating (giving an unsatisfactory grade).

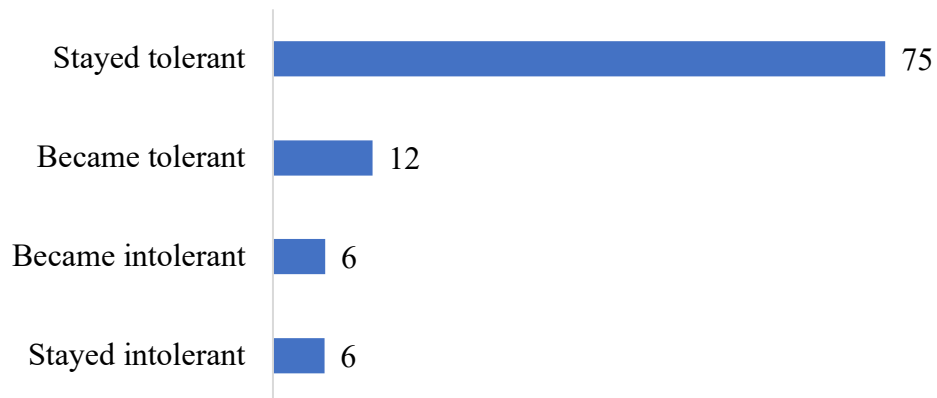
²⁰ The percentage of students who admitted that during the school year at least once 1) copied from other students on exams, tests, or 2) used cheat sheets on exams, or 3) accessed materials downloaded to their mobile phone during exams.

²¹ The percentage of students who admitted that during the academic year at least once 1) used parts of the text from other articles or books without reference to the source, or 2) used other people's ideas written in their own words in the submitted written works, without reference to the source, or 3) bought ready-made written works.



Picture 1 – Student attitudes towards cheating on exams, “SUPER-test student data 1” dataset

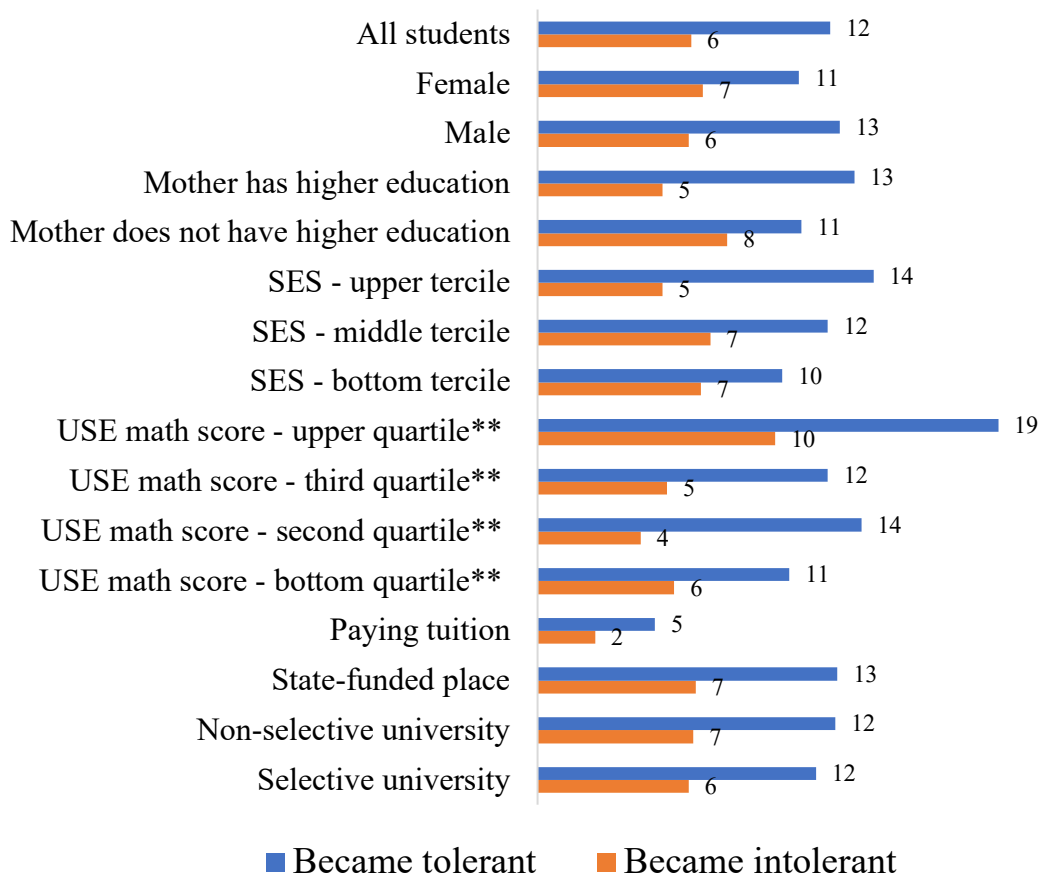
The analysis of cross-sectional and longitudinal data (Picture 2) confirms the suggestions that students become less honest in learning, stated in the previous studies (Denisova-Schmidt, Huber, Leontyeva 2016).



Picture 2 – Changes in student attitudes towards cheating on exams from the first to the year of studying, “SUPER-test student data 2” dataset, longitudinal data

The level of tolerance towards academic dishonesty increases across all student subgroups by gender, parental education, socioeconomic status, precollege characteristics and across different types of universities. It is especially worrisome that

students in the top quartile by precollege academic performance (as measured by Unified State Exam score in math)²² increase their tolerance towards academic dishonesty at a higher rate than other subgroups of students (Picture 3). This indicates that universities are unable to sustain academic integrity even of the most engaged and talented students.

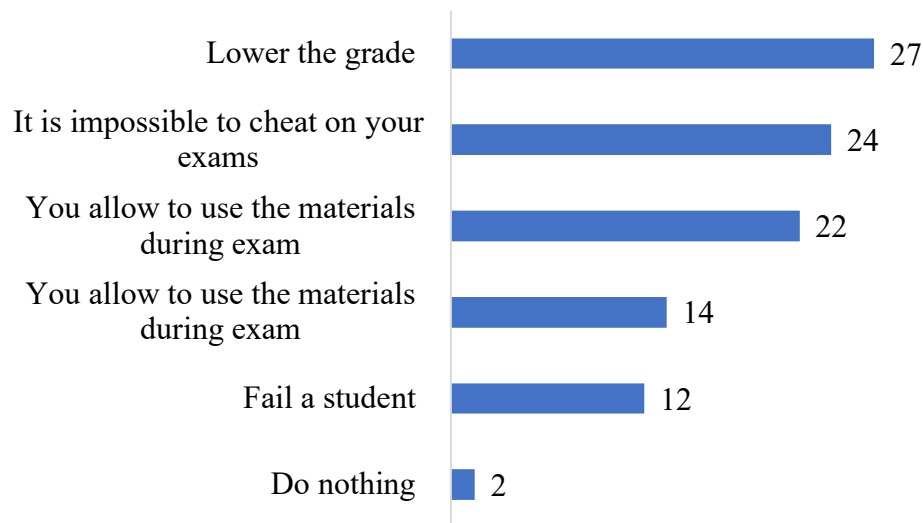


Picture 3 – Changes in student attitudes towards cheating on exams from the first to the second year of studying, by student individual characteristics, “SUPER-test student data 2” dataset, longitudinal data, ** - the differences are significant at the level 0,05

²² The Unified State Exam score in math serves as a proxy for the level of academic preparation of students before entering the university.

Faculty punitive actions against academic dishonesty

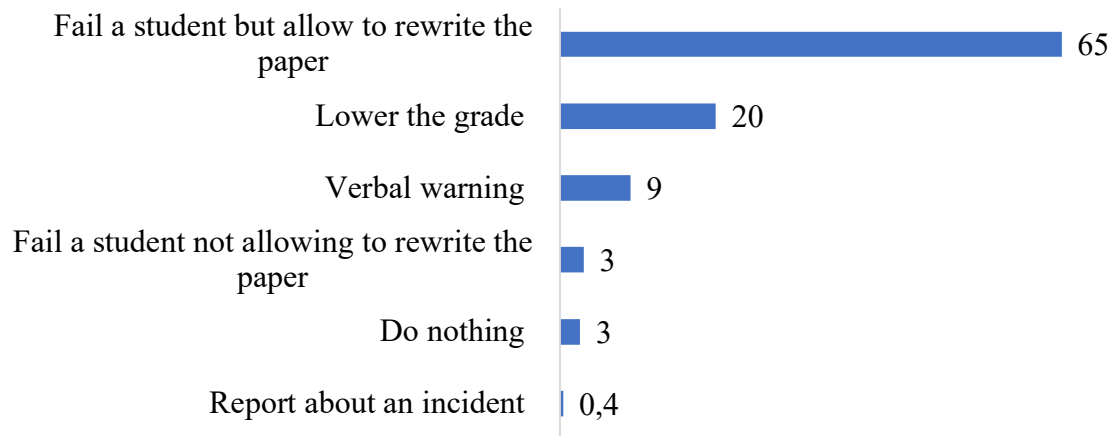
The majority of faculty at Russian universities prefer mild forms of punishment in response to academic dishonesty, which reflects their tolerant attitude towards these practices. About a quarter of faculty choose verbal warnings in response to student cheating on exams (Picture 4, MEMO faculty data). Given that most students do not consider cheating unethical (Grimes 2004), this faculty response to cheating does not increase the cost of cheating, in other words, it does not have the potential to deter student academic dishonesty. Only 14% of faculty allow the use of materials in exams, that is, they use the open book format, which is considered one of the important means of reducing academic dishonesty among students.



Picture 4 – Faculty punitive actions in response to student cheating on exams, “MEMO faculty data” dataset

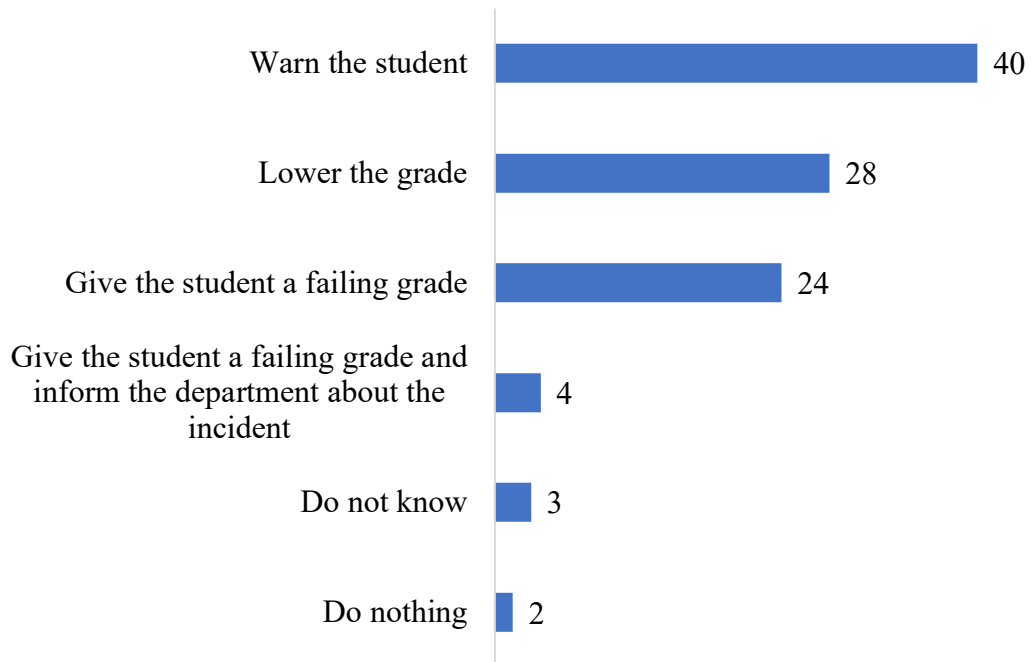
At first glance, a comparison of data on cheating and plagiarism suggests that faculty are less tolerant of plagiarism compared to cheating: verbal warnings are significantly less popular among faculty in response to plagiarism (9% – plagiarism, 24% – cheating), and about two-thirds of faculty give an unsatisfactory grade for student paper containing plagiarism (Picture 5). However, the most common response

to plagiarism is to allow the student to rewrite the paper (65%), i.e. to give the student a second chance and a basis for the first attempt to cheat.



Picture 5 – Faculty punitive actions in response to student plagiarism, “MEMO faculty data” dataset

The prevalence of this form of punishment not only increases the workload of faculty due to the need to re-evaluate the student papers, but also reduces the cost of students for the first attempt to plagiarise in their work. This problem is compounded by the fact that many universities do not practice checking the majority of written student works for plagiarism: 38% of faculty report that this practice is not enforced at their university (Roshchina, Shmeleva 2016, p. 31). Data from a survey of faculty in engineering (SUPER-test faculty data) show similar results: 40% of faculty prefer a verbal warning in response to cheating on exam, 28% lower grade by a certain number of points (Picture 6).



Picture 6 – Faculty punitive actions in response to student cheating on exams, “SUPER-test faculty data”

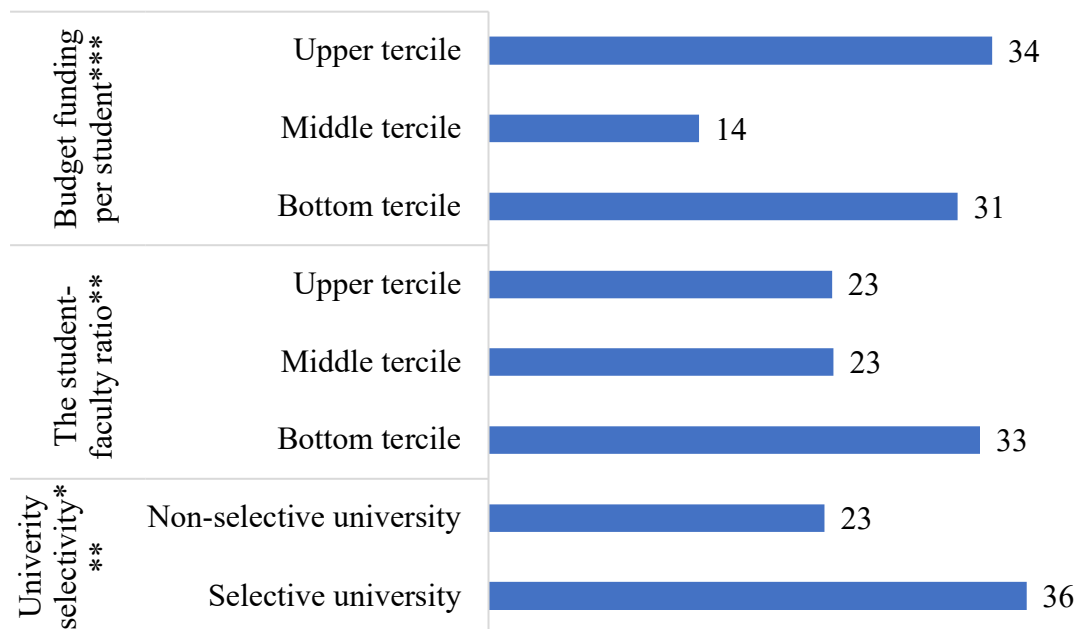
While lenient forms of punishment prevail among faculty of Russian universities, research abroad shows a lower tolerance of faculty for academic dishonesty. For example, according to a study conducted on data from 241 faculty at a US university, the most common practices for responding to academic dishonesty are reporting the incident to the dean's office (93% of faculty chose this option), giving an unsatisfactory grade for work (67%)²³, and giving an unsatisfactory grade for the entire course (49%) (Coalter, Lim, Wanorie 2007). Only 11% lower a grade, and 29% chose a verbal warning.

The exercise of severe faculty punishment is not related to faculty gender, age, the type of employment (full-time or part-time), or teaching experience. However, the share of faculty who prefer severe punishment is significantly lower among those who hold PhD degrees or occupy higher academic positions of full professor or associate

²³ The shares do not add up to 100%, since it was a multiple-choice question.

professor.²⁴ One possible explanation for this observation is that higher-ranked faculty conduct exams and encounter cheating incidents less frequently. It may also be that higher-ranked faculty, that are also heavily engaged in research, are less engaged in teaching compared to lower-ranked faculty.

There are also significant differences in the share of faculty that is tolerant to academic dishonesty by institutional characteristics of university: selectivity, student to faculty ratio, and funding per student. The share of faculty who prefer severe punishments is larger at selective universities (36%), at universities with the lowest student to faculty ratio (33%), and at universities with the largest funding per student (34%) (Picture 7). These findings suggest that administrators at selective institutions and at institutions that have more resources either hire faculty that are less tolerant towards academic dishonesty or require faculty to address incidents of academic dishonesty more seriously.



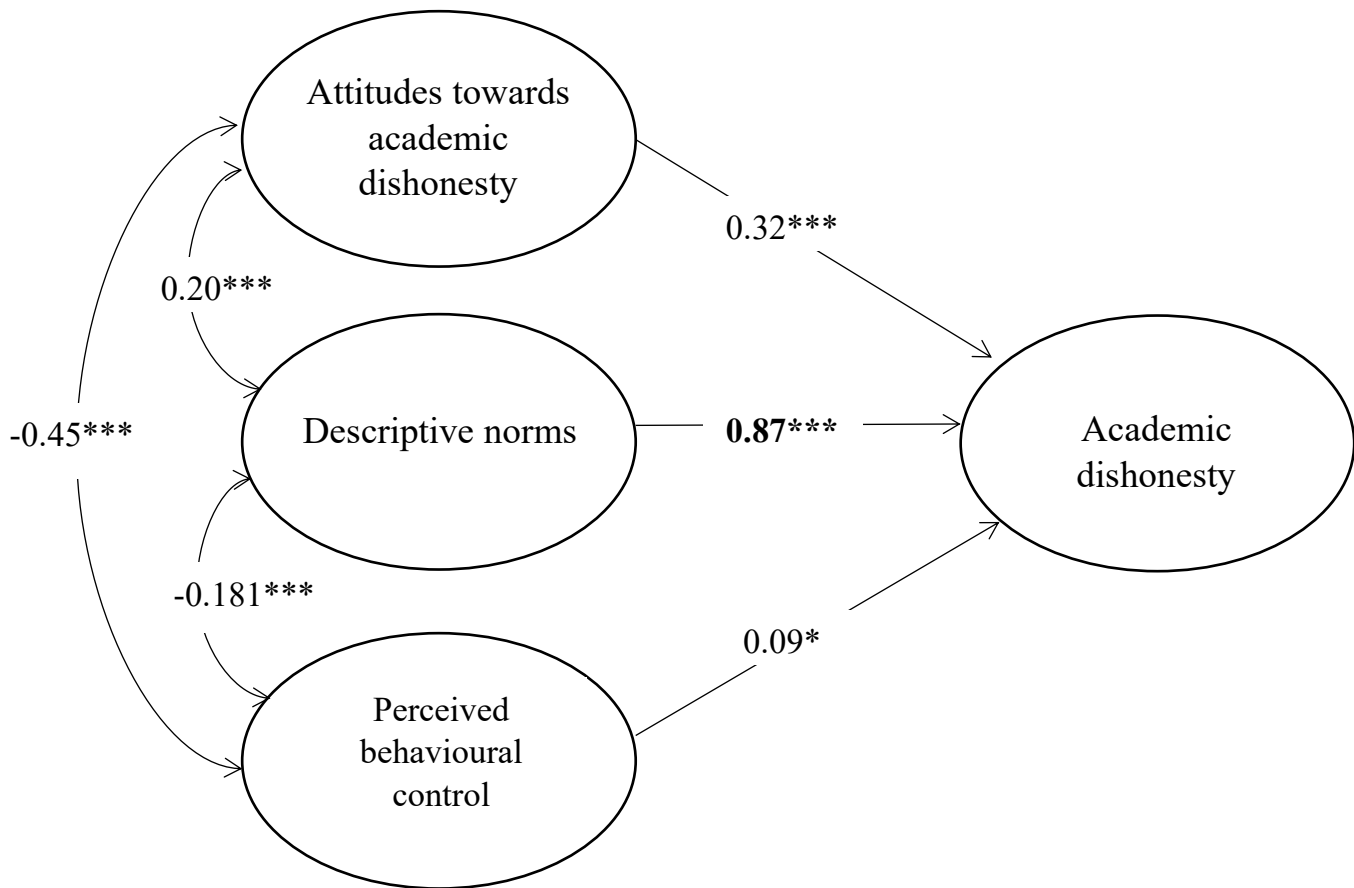
Picture 7 – Share of faculty holding intolerant attitudes towards student cheating on exam by the institutional characteristics of universities, “SUPER-test faculty data”

²⁴ These two variables are highly correlated: the majority of PhD holders are either full professors (21%) or associate professors (75%).

dataset, ** - the differences are significant at the level 0,05; *** - the differences are significant at the level 0,001

Academic dishonesty and perceived fellow students' behaviour

Analysis of three data sets (datasets “MEMO student data”, “Students of leading universities – cross-sectional data”, “Students of leading universities – longitudinal data”) shows that the student perception of fellow students' behaviour is the most significant correlate of their academic dishonesty: the chances of committing cheating and plagiarism significantly increase for a student who believes that many of his fellow students cheat. Perceived peer norms outperform the effects of individual attitudes towards academic dishonesty and perceived certainty of being punished severely.



Picture 8 – The results of structural equation modeling analysis, dataset “Students of leading universities – cross-sectional data”

These findings are consistent with other studies conducted in collectivist countries such as Ukraine and Lebanon, where perceptions of other students' behaviour are a more pronounced factor, while in individualistic countries such as the United States and Switzerland, the individual attitude of students to academic dishonesty is a more important factor (McCabe et al. 2008; Chudzicka-Czupala et al. 2015). This observation also illustrates the 'coordination effect' – “the more consistently a norm is observed in society, the greater the costs incurred by an individual deviating from it” (Magnus et al. 2002).

It should be taken into account that students tend to overestimate the prevalence of academic dishonesty among other students (Hard, Conway, Moran 2006), which often serves as a basis for rationalizing their cheating behaviour (MacGregor, Stuebs 2012; Stephens 2017). The faculty estimates are usually lower and considered to be more accurate (Hard, Conway, Moran 2006). The study exploiting the faculty perception as an indicator of the incidence of academic dishonesty (Shmeleva 2016) also shows that the prevalence of cheating even in faculty perception is one of the strongest predictors.

The results of the analysis are presented in the Appendix, tables A1, A2, A4, A5.

Academic dishonesty and perceived likelihood of punishment

The results of this study suggest that the faculty response to student academic dishonesty can play a significant role in reducing its scale. Regression analysis performed on the basis of data from a survey of students and faculty (dataset “MEMO student data”, “MEMO faculty data”) showed that students studying at universities with a higher share of faculty who choose more severe punishments for cheating are less likely to cheat when controlling for student individual and institutional characteristics of universities. Results of the analysis ran on the data of engineering students and their faculty (Table 1; datasets “SUPER-test student data 1”, “SUPER-test student data 2”, “SUPER-test faculty data”), allow us to draw even more convincing conclusions about the significant role of more strict faculty responses to cheating on the formation of

students' less tolerant attitudes towards academic dishonesty, since the analysis controlled for the attitudes of students in an earlier year of study, and also used data from a survey of faculty who taught about 80% of courses for these students.

Table 1 – Relationship between student intolerant attitudes towards cheating on exams and the share of intolerant faculty; datasets “SUPER-test student data 1”, “SUPER-test student data 2”, “SUPER-test faculty data; N = 912

Dependent variable – student intolerant attitudes towards cheating on exams	(1)	(2)	(3)	(4)	(5)
Share of intolerant faculty	0.097** (0.045)	0.099** (0.044)	0.098** (0.044)	0.096** (0.048)	0.115** (0.050)
Share of intolerant first year students (at the department-level)	0.170* (0.091)	0.165* (0.092)	0.170* (0.091)	0.121 (0.089)	0.112 (0.096)
Student socio-demographic characteristics	-	+	+	+	+
Precollege educational characteristics	-	-	+	+	+
Faculty characteristics	-	-	-	+	+
Institutional characteristics	-	-	-	-	+

Note: More detailed information is presented in Table A3, Appendix

The results also showed that the university policies related to checking written student works for plagiarism is not related to the likelihood of academic dishonesty among students. The students may cheat regardless of these measures, since the procedures for detecting plagiarism are not effective enough, and the chances of punishment in case of detection are still low (see Picture 6).

The effect of the perceived likelihood of punishment is weak if students observe a high prevalence of academic dishonesty among their fellow students (“Students of leading universities – longitudinal data”). Though about a half of students believe that faculty check the student papers for plagiarism and penalize it when detected, a lot of students witness academic dishonesty around them – 38% of the participants being convinced that most of their peers plagiarise. In this case, the experience of observing fellow students avoiding punishment for plagiarism may outweigh the fear to be detected and punished (Freiburger et al. 2017).

Academic dishonesty and student academic motivation

The results of the analysis (Table 2; Models 1 and 2; dataset “Students of leading universities - longitudinal data”) showed that academic motivation of students in the first and second semester of the first year is associated with academic dishonesty, which is consistent with foreign (Rettinger, Jordan 2005; David 2015; Anderman, Koenka 2017) and domestic research (Gizhitsky 2014; Gizhitsky, Gordeeva 2015).

Table 2 – The relationship between student academic dishonesty and academic motivation; dataset “Students of leading universities - longitudinal data”)

Dependent variable	The frequency of plagiarism			The frequency of cheating on exams		
	(1)	(2)	(3)	(1)	(2)	(3)
Academic motivation (1 st wave)	0,971	1,008	1,001	0,977	0,992	0,986
Academic motivation (2 nd wave)	0,780***	0,844*	0,937	0,665***	0,725***	0,876
Control student individual characteristics	-	+	+	-	+	+
Perceived costs of cheating associated with contextual factors	-	-	+	-	-	+

Note: More detailed information is presented in Tables A4-A5, Appendix

However, if we take into account the perceived threat of punishment for plagiarism and cheating, as well as the perceived prevalence of these practices among classmates, educational motivation ceases to play a significant role. In other words, even the most motivated students, when they find themselves in an educational environment characterised by condoning academic dishonesty and its high prevalence, begin to resort to these practices.

The results of the analysis are presented in the Appendix, tables A5-A6.

THESIS STATEMENTS

1. Academic dishonesty – cheating on exams and plagiarism in student written papers – is widespread among students of Russian universities. Different measurement approaches indicate their high prevalence and high degree of student tolerance: between a quarter and a half of students use these practices on average.
2. Students of Russian universities become more tolerant towards academic dishonesty as they progress through their studies. Students are becoming more tolerant regardless of gender, socio-economic background, and the selectivity of universities. However, students with the highest level of academic performance (measured by USE math score) increase their tolerance for academic dishonesty at a higher rate than other subgroups of students.
3. Most faculty at Russian universities are tolerant towards academic dishonesty: many choose less severe forms of punishment for cheating and plagiarism, for example, verbal warnings. Less severe punishments from faculty increase the chances of academic dishonesty among students and contribute to the development of more tolerant attitudes towards cheating among students.
4. Student academic dishonesty is related to the perception of its prevalence among fellow students. Students who perceive the prevalence of academic

dishonesty among their fellow students as high are more likely to turn to these practices.

5. Academic motivation of students (interest in learning) does not deter students from academic dishonesty, if there is a high prevalence of academic dishonesty among fellow students, and the threat of detection and punishment is perceived as low.

CONCLUSION

Academic dishonesty among students negatively affects the quality of education, weakens the signaling function of higher education in the labour market, and undermines the credibility of the higher education system. The forced distance learning format, which happened to Russian higher education institutions, due to the COVID-19 pandemic, exposed the problem of academic dishonesty that previously existed in higher education²⁵. To develop effective recommendations for universities seeking to improve the quality of education in their universities and avoid the devaluation of their diplomas, it is necessary to understand the reasons why students cheat in academic settings, as well as to determine the factors contributing to the prevalence of academic dishonesty.

This research is the first large-scale empirical study of academic dishonesty among students of Russian universities and faculty responses to these practices. The results indicate a high prevalence of academic dishonesty in Russian universities: between a quarter and half of the students use these practices on average. The empirical basis of the study is the nationally representative data which allows for a high degree of generalisation of the results. Previous domestic studies of academic dishonesty have relied on small samples of students from one or more universities (Sivak 2006; Radaev, Chirikov 2006, Borisova, Polishchuk, Suvorov 2014). These studies were rather descriptive in nature, identifying the relationship of academic dishonesty with the individual characteristics of students and ignoring the contextual factors.

The longitudinal design allowed us to trace the actual changes in student attitudes towards dishonesty that are, in fact, changing over time. This research shows that students are becoming more dishonest over the course of studying. Prior studies provided similar results but were based on cross-sectional data (Denisova-Schmidt et

²⁵ RBK “University instructors complained about student plagiarism and cheating due to the distant education” <https://www.rbc.ru/society/03/08/2020/5f2414d29a7947ed990daf8e>. Accessed October 24, 2020.

al. 2016). This observation is important because it contrasts with research results obtained abroad (mainly in the United States), where students, on the contrary, become more honest in the learning process (Mayhew et al. 2016; McCabe, Butterfield, Treviño 2012). Researchers attribute this not only to student maturation and moral development (Lee et al. 2020) as well as students' successful learning of academic norms but also to the educational process design: in the United States, in contrast to upper-division students, lower-division students, in the United States, have larger classes that are harder to monitor during exams (McCabe, Butterfield, Treviño 2012). In Russia, classes tend to be of the same size during the course of the study and usually include several study groups within the same major. Finally, the increase in academic dishonesty, during the course of training, may be the result of weak institutional support for academic integrity policies, poor awareness of unacceptable practices, and a lack of strict and unavoidable penalties for academic dishonesty.

The conditions in which academic dishonesty can be considered as acceptable are determined in part by the absence of a significant threat of punishment. This study indicates that the majority of faculty prefer mild forms of punishment in response to academic dishonesty. For example, 65% of faculty allow students to rewrite the work with plagiarism, which reduces the costs of the first attempt to plagiarise.

According to previous studies, faculty tend to be reluctant to address student dishonesty because primarily due to the lack of institutional support at the university and the reluctance to participate in formal procedures due to the high workload associated with teaching (McLeod, Eaton 2020). This study indicates that faculty are stricter about cheating in more selective universities, in universities with a higher amount of funding per student, as well as with the lowest student to faculty ratio. This may indicate a higher level of institutional support for academic ethics at more prestigious universities.

This study supports the hypothesis of the deterrent effect of more severe punishments by faculty, based on the theory of deterrence (Ogilvie, Stewart 2010), the

theory of planned behaviour (Ajzen, Fishbein 1980; Beck, Ajzen 1991), as well as the motivational theory developed by Murdoch and Anderman (2006). The results of the previous studies are inconsistent. A few studies suggest that there is an inverse correlation between student perceptions of the severity of faculty punitive actions and academic dishonesty (Broeckelman-Post 2008; McCabe and Treviño 1993; Michaels and Miethe 1989; Yu et al. 2017). By contrast, some studies report that student perceptions of the severity of punitive actions are not related or even positively related to academic dishonesty (Harding et al. 2007; McCabe et al. 2006; McCabe and Treviño 1997; Passow et al. 2006). This study is the first attempt to assess the impact of faculty responses to student academic dishonesty, using the faculty responses, rather than student perceptions. Prior studies (Broeckelman-Post 2008; Michaels and Miethe 1989; Yu et al. 2017) relied exclusively on student responses to understand how the severity of punishment is related to student dishonest academic attitudes/ behaviour. Students, however, tend to report less severe punishments by faculty, in order to justify their cheating (Brent and Atkisson 2011). In Russia, the relationship between the faculty punitive actions and the prevalence of academic dishonesty has not been studied before.

The hypothesis about the deterrent effect of academic motivation, put forward based on the motivational theory developed by Murdoch and Anderman (2006), was not confirmed in this study. Unlike previous Russian studies that evaluated the relationship between academic dishonesty and student academic motivation (Gizhitsky 2014; Gizhitsky, Gordeeva 2015), this study takes into account the role of contextual factors such as the perception of the threat of punishment and the perception of the behaviour of other students. This study suggests that academic motivation when controlling these parameters ceases to be a significant predictor of academic dishonesty.

The key result of the study is empirical evidence of the prevailing tolerance of academic dishonesty, on the part of faculty, who prefer a mild form of punishment for cheating such as lowering the grade or doing nothing in response to cheating. The costs associated with detecting and punishing academic dishonesty play a significant

deterrent role in the spread of academic dishonesty. These results highlight the importance of supporting the faculty, for example, by providing training on academic integrity and effective practices to reduce the incidence of academic dishonesty, as well as by providing institutional support for implementing stricter and more inevitable penalties for plagiarism and cheating.

Imposing more strict penalties, however, should not be seen as a self-sufficient method to reduce the prevalence of academic dishonesty (Gallant, Stevens 2020). Strengthening the system of punishment, complication and formalization of related procedures can lead to a decrease in the willingness of faculty to impose prescribed penalties (for example, to report detected plagiarism), reinforcing academic dishonesty.

It is important that the punishment should signal the unacceptability of academic dishonesty, along with enforcing the proactive (educational) measures aimed at informing about academic integrity, ethics and rules of the game. Researchers recommend changing the assessment formats in favour of formative assessment, which allows faculty to track students' progress during the course instead of summative assessment, which focuses on results; and intermediate feedback from faculty and other students (in the form of, for example, peer review) (Eaton et al. 2007).

An important part of academic dishonesty prevention measures is to establish and maintain institutional rules that clarify, for both students and faculty, what happens when academic dishonesty is detected and what consequences should be expected (Morris, Carroll 2016). It is necessary to describe and record acceptable and unacceptable practices, the reasons for this distinction, and the likely consequences of resorting to unacceptable practices. Practices and consequences can be defined in so-called codes of academic integrity (honour codes). The examples of honour codes adapted in Russian universities are, for example, an honour code of the European University at Saint-Petersburg²⁶, which describes practices that fall under the definition

²⁶ Honour code of the European University at Saint-Petersburg <https://eusp.org/students/the-code-of-academic-integrity>. Accessed October 24, 2020.

of violations of academic ethics, as well as sanctions for these violations, and the honour code in the Higher School of Economics²⁷.

However, the implementation of an honour code system is not sufficient to reduce academic dishonesty without broad measures aimed at increasing the awareness about academic integrity (Ives, Nehr Korn 2019). Information and educational measures can take the form of compulsory courses in the university, as it is implemented in many universities worldwide for both students and faculty (e.g. the University of Oakland²⁸ in the USA or at the University of Bath²⁹ in England). The results of experimental studies indicate the effectiveness of training interventions in reducing students' tolerant attitudes towards plagiarism (Dee, Jacob 2012; Cronan et al. 2017)³⁰. Research has described ways to develop and implement such courses at universities (Lowe et al. 2018, Lysiak 2020). There are also courses hosted on external platforms, such as the course “Academic Integrity: Values, Skills, Action”³¹ on the FutureLearn platform, the course for students “My academic integrity”³² on the website of the project of the same name, as well as the short course “Academic integrity”³³, hosted on the Epigeum platform.

²⁷ Higher School of Economics. 2012. “Procedures for Applying Disciplinary Measures for the Violation of Academic Standards for Student Papers at the National Research University Higher School of Economics”. <https://www.hse.ru/data/2015/08/13/1087393915/Appendix%207%20to%20Internal%20Regulations%20Disci..s%20for%20Violation%20of%20Ac%20Standards.pdf>. Accessed October 24, 2020.

²⁸ Academic integrity course at the University of Oakland <https://www.auckland.ac.nz/en/students/forms-policies-and-guidelines/student-policies-and-guidelines/academic-integrity-copyright/academic-integrity-course.html>. Accessed October 24, 2020.

²⁹ Academic integrity training at University of Bath <https://www.bath.ac.uk/campaigns/academic-integrity-training/>. Accessed October 24, 2020.

³⁰ However, at the moment there is not enough convincing research indicating a positive effect of such interventions on behaviour (Ives, Nehr Korn 2019).

³¹ Course “Academic Integrity: Values, Skills, Action” <https://www.futurelearn.com/courses/academic-integrity>. Accessed October 24, 2020.

³² Course “My academic integrity” <https://myacademicintegrity.com/>. Accessed October 24, 2020.

³³ Course “Academic integrity” <https://www.epigeum.com/courses/studying/academic-integrity/>. Accessed October 24, 2020.

Further research on academic dishonesty may reinforce the study of factors of tolerance among faculty, analysis of effective institutional measures to combat academic dishonesty in Russian universities. Experimental and monitoring studies, aimed at tracking the dynamics of changes in the level of academic dishonesty and the effectiveness of pedagogical and institutional interventions, aimed at reducing its prevalence will help to deepen the understanding of academic dishonesty in the context of the Russian higher education system.

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APPENDIX

Table A1. The binary logistic regression results with the dependent variable indicating student experience in committing one of the types of plagiarism during a study year, datasets “MEMO student data”, “MEMO faculty data”

Variables	B	Sig.	Exp (B)
Male	0,030	0,745	1,031
Employed	0,193**	0,038	1,213
State-funded place	-0,240**	0,025	0,787
Fulfilling the minimal requirements to prepare for classes (base: no preparation for most classes)	-0,380*	0,064	0,684
Medium intensity in preparing for classes	-0,727***	0,001	0,483
High intensity in preparing for classes	-0,905***	0,000	0,404
Engagement in (any form of) research in current and previous academic years	0,222	0,114	1,249
Research productivity	-0,276*	0,072	0,759
High level of confidence in working in one’s field of study in the future	-0,218**	0,015	0,804
Planning to get another Bachelor’s or Specialist degree	0,190**	0,045	1,209
Planning to earn a Master’s degree in Russia	0,098	0,333	1,103
Planning to earn a PhD in Russia	-0,182	0,202	0,834
Planning to study abroad	-0,007	0,959	0,993
Attendance from 50% to 75%	0,096	0,627	1,101
Attendance over 75%	0,054	0,774	1,055
2 nd year (base: 1 st year)	0,450***	0,001	1,569
3 rd year	0,186	0,194	1,204
4 th year	0,497***	0,001	1,644

Variables	B	Sig.	Exp (B)
5 th year	0,070	0,702	1,072
Mostly good grades (B's) (base: satisfactory/unsatisfactory grades)	-0,081	0,598	0,922
Only good and excellent grades (B's and A's)	-0,062	0,691	0,940
Only excellent grades (A's)	-0,367*	0,060	0,693
Education quality is a priority in choosing university and major	-0,268***	0,003	0,765
Major: Social Sciences ^a	0,058	0,604	1,059
Major: Engineering ^a	-0,152	0,281	0,859
Major: Medical Sciences ^a	-0,440*	0,079	0,644
Major: Culture and Arts ^a	-0,167	0,110	0,846
Single-parent family	0,139	0,118	1,149
High-income family	-0,176**	0,049	0,839
Economic university ^b	0,345**	0,026	1,412
Humanities university ^b	0,589**	0,042	1,802
Classical university ^b	0,351**	0,015	1,420
Arts university ^b	0,023	0,934	1,023
Teacher-training university ^b	0,545***	0,004	1,725
Agricultural university ^b	-0,410**	0,033	0,664
State university	0,269	0,117	1,309
Main campus	-0,042	0,779	0,959
1,000–4,999 students in the student body (base: 999 student or less)	-0,188	0,247	0,829
Over 5,000 in the student body	-0,013	0,943	0,987
Moscow university	-0,039	0,716	0,962
University enforces academic dishonesty prevention practices	-0,027	0,764	0,973

Variables	B	Sig.	Exp (B)
Engagement of faculty in research	-0,254**	0,018	0,775
Incidence of academic dishonesty as assessed by faculty	0,300***	0,001	1,350
Intolerance to cheating	-0,577***	0,000	0,561
Constant	-0,543	0,162	0,581
Observations	2931		
Nagelkerke's R squared	0,104		
-2Log-likelihood	3315,8		
Hosmer-Lemeshow goodness-of-fit test	$\chi^2 = 6,576$; df = 8; sig = 0,583		
<i>Notes:</i> Significance levels: * p<0.1, ** p<0.05, *** p<0.01. a – base categories are natural sciences, medical sciences and humanitarian majors b – base categories are universities with transport, technical, and medical profiles			

Table A2. The binary logistic regression results with the dependent variable indicating student experience in cheating on exams during a study year, datasets “MEMO student data”, “MEMO faculty data”

Variables	B	Sig.	Exp (B)
Male	-0,083	0,386	0,921
Employed	0,091	0,333	1,096
State-funded place	-0,133	0,227	0,875
Fulfilling the minimal requirements to prepare for classes (base: no preparation for most classes)	-0,084	0,69	0,92
Medium intensity in preparing for classes	-0,37*	0,091	0,691
High intensity in preparing for classes	-0,636**	0,01	0,529
Engagement in (any form of) research in current and previous academic years	-0,263*	0,084	0,769
Research productivity	0,292*	0,076	1,339

Variables	B	Sig.	Exp (B)
High level of confidence in working in one's field of study in the future	-0,22**	0,017	0,802
Planning to get another Bachelor's or Specialist degree	-0,106	0,276	0,899
Planning to earn a Master's degree in Russia	0,098	0,343	1,103
Planning to earn a PhD in Russia	-0,394***	0,008	0,675
Planning to study abroad	0,085	0,524	1,089
Attendance from 50% to 75%	-0,219	0,258	0,804
Attendance over 75%	-0,546***	0,003	0,579
2 nd year (base: 1 st year)	0,753***	0,000	2,124
3 rd year	0,631***	0,000	1,879
4 th year	0,955***	0,000	2,6
5 th year	0,726***	0,000	2,068
Mostly good grades (B's) (base: satisfactory/unsatisfactory grades)	0,016	0,919	1,016
Only good and excellent grades (B's and A's)	-0,037	0,814	0,963
Only excellent grades (A's)	-0,083	0,672	0,921
Major: Social Sciences ^a	0,287**	0,044	1,332
Major: Engineering ^a	0,325**	0,028	1,385
Major: Medical Sciences ^a	0,061	0,767	1,063
Major: Culture and Arts ^a	-0,419*	0,095	0,657
Single-parent family	0,096	0,357	1,1
Mother obtained a higher education	0,103	0,256	1,108
High-income family	0,047	0,604	1,048
Education quality is a priority in choosing university and major	-0,264***	0,004	0,768
State university ^b	0,616***	0,000	1,852
Main campus	0,444***	0,004	1,559

Variables	B	Sig.	Exp (B)
Moscow university	0,177*	0,099	1,193
Humanities university ^b	1,151***	0,000	3,162
Engineering university ^b	0,223	0,126	1,25
Arts university ^b	-0,207	0,443	0,813
Agricultural university ^b	-0,894***	0,000	0,409
Transportation university ^b	-0,637***	0,004	0,529
1,000–4,999 students in the student body (base: 999 student or less)	0,001	0,994	1,001
Over 5,000 in the student body	-0,11	0,565	0,896
University enforces academic dishonesty prevention practices	0,137	0,131	1,146
Engagement of faculty in research	-0,486***	0,000	0,615
Incidence of academic dishonesty as assessed by faculty	0,232***	0,009	1,261
Intolerance to cheating	-0,271**	0,024	0,763
Constant	-1,463***	0,000	0,232
Observations	2931		
Nagelkerke's R squared	0,145		
-2Log-likelihood	3230,69		
Hosmer-Lemeshow goodness-of-fit test	$\chi^2 = 3,829$; df = 8; sig = 0,872		
<p><i>Notes:</i> Significance levels: * p<0.1, ** p<0.05, *** p<0.01. a – base categories are natural sciences, medical sciences and humanitarian majors b – base categories are universities with transport, technical, and medical profiles</p>			

Table A3 – Relationship between the faculty response to third-year student cheating majoring in engineering fields and student intolerance towards cheating on exams, results of a series of binary logistic regressions, datasets “SUPER-test student data 1”, “SUPER-test faculty data”

VARIABLES	(1)	(2)	(3)	(4)	(5)
Share of intolerant faculty	0.097** (0.045)	0.099** (0.044)	0.098** (0.044)	0.096** (0.048)	0.115** (0.050)
Share of intolerant first year students (at the department-level)	0.170* (0.091)	0.165* (0.092)	0.170* (0.091)	0.121 (0.089)	0.112 (0.096)
Student socio-demographic characteristics	No	Yes	Yes	Yes	Yes
Precollege educational characteristics	No	No	Yes	Yes	Yes
Faculty characteristics	No	No	No	Yes	Yes
Institutional characteristics	No	No	No	No	Yes
Observations	912	912	912	912	912
Number of study groups	120	120	120	120	120
Pseudo R-squared	0.015	0.021	0.023	0.048	0.051

Notes:

1. Average marginal effects are reported.

2. Standard errors adjusted for clustering at the study group-level in parentheses.

3. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

4. Student socio-demographic characteristics include: gender, age, parents' education, SES index (household assets index).

Precollege educational characteristics include: type of high school (advanced regular school), type of high school class (advanced class in math and physics or advanced in other subjects or non-advanced class), type of funding of education at university (state funding or paid tuition).

Faculty characteristics include: share of female faculty, average age of faculty, share of PhD holders, share of Full Professors, share of Lecturers or AP, share of full-time faculty, average number of years teaching).

Institutional characteristics include: university selectivity, funding per student (terciles); student-faculty ratio.

Table A4 – Ordinal logistic regression results. Dependent Variable: copying fragments from other publications or books (including online sources) without citing the source, dataset “Student of leading universities – longitudinal data”

Variables	(1)	(2)	(3)
<i>Academic motivation (relative autonomy indexes)</i>			
Academic motivation (1 st wave)	0,971 (0,029)	1,008 (0,032)	1,001 (0,032)
Academic motivation (2 nd wave)	0,780*** (0,070)	0,844* (0,081)	0,937 (0,093)
<i>Control variables: student individual characteristics</i>			
Male		0,822 (0,152)	0,830 (0,160)
Mother obtained higher education		1,091 (0,228)	1,095 (0,238)
University 2 (base: University 1)		3,261*** (1,060)	2,463*** (0,853)
University 3		2,843*** (0,619)	2,404*** (0,561)
University 4		3,422*** (0,963)	2,451*** (0,752)
STEM (base: humanities and social sciences)		0,951 (0,212)	0,934 (0,215)
Self-funding or apprenticeship contract (base: state funding)		1,493** (0,298)	1,534** (0,317)
A’s and B’s (base: straight A’s)		1,866** (0,572)	1,955** (0,618)
A’s, B’s, and C’s		1,736* (0,557)	1,735* (0,575)
Mostly C’s		2,463** (0,981)	2,513** (1,037)
		0,463***	0,652

Copying fragments from others without proper citation is not tolerated by the university (base: it is acceptable to copy fragments without citation or I don't know) (1st wave)		(0,137)	(0,205)
<i>Perceived costs associated with contextual factors</i>			
Most students use fragments from other publications or books without citing the source (base: no one or some students)			2,226***
			(0,407)
Everyone uses fragments from other publications or books without citing the source (base: no one or some students)			8,640***
			(2,899)
Moderate probability of getting bad grades in case plagiarism is detected (base: low probability)			1,328
			(0,699)
High probability of getting bad grades in case plagiarism is detected (base: low probability)			1,026
			(0,554)
Moderate probability of instructors checking assignments for plagiarism (base: low probability)			1,040
			(0,317)
High probability of instructors checking assignments for plagiarism (base: low probability)			0,903
			(0,295)
Observations:	566		
Chi-squared	10,46	78,19***	136,62***
Number of estimated parameteres	4	15	21
Akaike Information Criterion (AIC)	1162,7	1117,0	1070,5
Bayesian Information Criterion (BIC)	1180,1	1182,1	1161,6
McFadden's pseudo R-squared	0,009	0,067	0,117
<i>Note:</i> Significance levels: * p<0.1, ** p<0.05, *** p<0.01.			

Table 5 – Ordinal logistic regression results. Dependent variable: using cheat sheets (including on a mobile device) or copied from other students during an exam or test, dataset “Students of leading universities – longitudinal data”

Variables	(1)	(2)	(3)
<i>Academic motivation (relative autonomy indexes)</i>			
Academic motivation (1 st wave)	0,977 (0,027)	0,992 (0,029)	0,986 (0,030)
Academic motivation (2 nd wave)	0,665*** (0,057)	0,725*** (0,065)	0,876 (0,084)
<i>Control variables: student individual characteristics</i>			
Male		0,836 (0,151)	0,926 (0,177)
Mother obtained higher education		0,748 (0,152)	0,905 (0,192)
University 2 (base: University 1)		1,845** (0,527)	1,299 (0,392)
University 3		1,401 (0,299)	1,235 (0,278)
University 4		0,952 (0,263)	0,725 (0,211)
STEM (base: humanities and social sciences)		0,786 (0,171)	0,841 (0,191)
Self-funding or apprenticeship contract (base: state funding)		0,727 (0,146)	0,608** (0,130)
A’s and B’s (base: straight A’s)		1,670* (0,480)	1,978** (0,607)
A’s, B’s, and C’s		1,585 (0,479)	1,884** (0,608)
Mostly C’s		3,862*** (1,445)	4,884*** (1,925)
		0,567***	0,687*

Cheating during an exam/test is not tolerated by the university (base: it is acceptable or I don't know) (1st wave)		(0,118)	(0,150)
<i>Perceived costs associated with contextual factors</i>			
Most students use cheat sheets or copy from other students during exams or tests (base: no one or some students)			5,487***
			(1,042)
Everyone uses cheat sheets or copies from other students during exams or tests (base: no one or some students)			6,787***
			(2,366)
Moderate probability of instructors removing a student cheating during an exam/test from the classroom (base: low probability)			0,377**
			(0,152)
High probability of instructors removing a student cheating during an exam/test from the classroom (base: low probability)			0,336***
			(0,128)
Observations	638		
Chi-squared	27,12	69,44***	177,65***
Number of estimated parameteres	4	15	19
Akaike Information Criterion (AIC)	1185,4	1165,1	1064,9
Bayesian Information Criterion (BIC)	1203,2	1232,0	1149,6
McFadden's pseudo R-squared	0,023	0,058	0,148
<i>Note:</i> Significant levels: * p<0.1, ** p<0.05, *** p<0.001.			