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Interview with Professor Manja Klemenčič

Manja Klemenčič is a researcher in national and international education policies at Harvard University, where she also teaches a course in sociology in the Faculty of Arts and Sciences. She is Editor-in-Chief of European Journal of Higher Education. The interview is devoted to report Five Theoretical Propositions Concerning Research on Students, which Manja Klemenčič delivered at the 6th International Conference Rethinking Students: Ideas and New Research Approaches as a special guest of the Russian Association of Higher Education Researchers.

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In your presentation you were introducing the concept of student university citizenship and suggesting that students being active citizens of their universities is better for both students and their learning outcomes as well as universities. Students as citizens — how can it be achieved?

Manja Klemenčič: My discussion started with trying to present that in the research on students there is an inherent tension between how we conceive students — do we conceive them as subjects of higher education or as objects of higher education. Do we conceive them as people to whom things are done or as people who can do things for themselves and who are responsible for their own learning in some way. Are they subjects or masters of their own learning and self-formation?

So from that contemplation went on to discuss the concept of student agency. Student agency I defined as students' capacity to intervene in their higher education environment for the purposes of achieving self-formation and well-being which I see as two of the fundamental purposes of higher education. Studentship, being a student, is namely, a rite of passage to some new role, status or life condition. It is oriented towards becoming a projected future self. Being a student also includes other functions, such as learning to take care of oneself, know how to develop and maintain relationships, develop own styles and tastes, find a job.

And from here I come to the concept of student university citizenship where I argue that for most of the time in the literature the question is posed: what can institutions — universities — do to help their students, to satisfy their students, to meet their students' needs. And this discussion has gone even further in the research on student affairs into questions what kind of services we provide to the students in order to satisfy them and meet their needs, into the literature on marketing higher education provision as a service and how universities can pitch the message so that that will appear attractive and appeal-

ing to the students as customers, so that they would choose their university over another.

I argued at the beginning of my presentation, when I spoke about student agency, that we should also pose a question: what students can do for themselves in terms of their own learning and being responsible for their own learning trajectory? And I have introduced the concept of self-regulated learner which prompts students to think critically and meta-reflectively about their own learning trajectory — what they would like to get out of being in education, what kind of learning they expect — and make strategies on how they will achieve that.

But what I have also added is that we should probably push the discussion even further — it's not just what the universities can do for the students and what students can do for themselves in terms of their learning, but also the question what students as full members of the communities of their universities, in fact — citizens of universities in a sense of rights and responsibilities, — could do for their universities. And what I have argued is that we should try to see how we can in the time when individualism and consumerism as parts of cultural system are strengthening in our societies, how we can invoke in the students the sense of collective belonging to their institutions, the sense of collective belonging to their communities within higher education institutions and how we can invoke in them a concern not only for the personal self-interest — the instrumentalist logic of thinking: what can I get for myself and how can I promote myself and do my self-formation and achieve my own personal well-being, but also concern about what can a student do as a member or as a citizen of the academic community of his/her institution, for the community to which she/he essentially belong.

So this is how I come to the concept of university citizenship. I argued that students' university citizenship is not just important for the sake of achieving some kind of collective good and collective well-being. But it is also important — purely instrumentally — for the learning processes of the students. If the students enact their citizenship, their sense of belonging to that university will be much stronger. And with the strong sense of belonging their agency, their capacity to intervene within the institution will be stronger. In other words, students would feel empowered in that community. And if they feel empowered their sense of capacity, their judgment of their own capacity to change things within their institution, to learn more, would be stronger, their efficacy will be strengthened, they will engage more, they will be interested in voicing their concerns more, they will want to be involved more in the decisions that concern them, and ultimately they will be happier.

And I think that important aspect of being a student is actually that you are happy, you have fun time, you have memorable experiences of studentship. Some argue that you have to have some fun and you have to have memorable experience in order to claim a genuine student experience. Some people were skeptical to my advocating that

students should try to do more within university communities by volunteering their time. The counter proposition was: if they want to work for this university then it makes sense that students want to engage voluntarily because it will improve their chances of employability with this institution, but if they want to go elsewhere it probably does not make sense. Then they should seek engagements elsewhere. I disagree with that. I don't say that students should just be engaged within their academic community and not do anything else outside. They should of course nurture relationships and possibilities outside. But what I do argue is that if they live a split student life while being students, if their concerns and their mindfulness is more directed to the outside world rather to where they are actually located — in the university, they will be less happy, less integrated, they will have built fewer relationships with the people around them, with the teachers, with peers, they will learn less because learning is ultimately and essentially a social activity, and they will be less happy.

When I spoke about the agency which is difficult to translate to Russian what it means but I tried to explain it as a capacity to intervene in one's own environment for the purposes of self-formation and well-being. What I wanted to say is that students have both possibilities to influence their own learning trajectory and they have the motivation to do that. But it is much easier to discuss agency in a specific context — agency in the classroom, agency when it comes to extra-curricular activity, agency in quality assurance systems within institutions where students can actually give feedback on the quality of the processes in the institution. Agency as a theoretical concept is difficult to capture.

How is it related to the concept of students unions?

Student unions are proxy agencies for students. Students have their individual personal agency as their personal capacity — and will and power — to intervene in their environment. But students turn to their student unions — or student councils, or student parliaments, governments, whatever the name is — their representative body when they feel that they cannot solve issues themselves and they would need a representative to act on their behalf, or when they feel that the union can solve their problems better, can act more efficiently on their behalf, or when they are afraid to act on their own behalf because they fear negative repercussions for themselves as students. Example will make it easier to understand this — if I am a student and I have problem with my teacher because this teacher is not giving me feedback on my essays or has not been responding to any of my messages, or if feel she or he is wasting our time at the lectures and I am utterly dissatisfied because I actually want to learn from this course, there are several courses of actions I can take to respond to this situation: I can go myself to the head of the department or my tutor and say that this professor is not

doing much and ask whether something can be changed. This might be a risky action and I can fear negative consequences: maybe this head of the department is a close friend of this teacher and nothing will happen, in fact bad things may happen, maybe this chair of the department will confidentially tell this teacher about me complaining and I may have difficulties in passing the exams or something else. So this is one option. My other possible course of action is going to the student representative and say: I am dissatisfied with this professor and I feel I am not alone, is there a possibility that you in your capacity as student representative can discuss it with the head of the department and then report back to us as your constituency? Another option is that I write an anonymous letter and hope that something will happen or not. But let's come back to the citizenship. There is a profound difference between those two courses of action. In the first instance when I in my personal capacity go and complain I want something to be changed for myself, I want my message to receive response, I want my paper to receive feedback from this particular teacher so I am active out of self-interest. I want to improve quality of provision that I get. If, however, I go to the student representative or if I decide to become a spokesperson for my class I am trying to improve the situation not only for myself. I am trying to improve the situation for my cohort, for the classmates — I am acting out of communal interest. And in this course of action I am enacting more citizenship than when I am trying to improve my own personal well-being. I have tried to change the situation not only for myself, but for my fellow students, and hopefully for the future generations who would come after me and take this particular course with this particular teacher who is not doing the job properly.

And now I am coming to answer the question you asked me before — what can the universities do in order to help students to develop this sense of citizenship, to invoke citizenship in their students... meaning that students will actually behave as citizens of their universities and try to take part in the university life as citizens. It is difficult and complex questions but I think that there are probably two levels on which it can be tackled. One level is symbolic in terms of the messages the university is giving to students about how the university envisages the role the students play within this community. If the message to the students is that university expects discipline and that students diligently follow courses, pass their exams and graduate on time... that sort of message does not induce much citizenship. The university-student relationship is controlling, students are conceived as pupils who need to be disciplined and educated. Students' role is passive. The message does not call for student engagement; it does not strengthen their agency. If the message of the leadership is that they see students as equal members of the academic community, call for their engagement in various forms, ask for their feedback on the experience of this higher education, on what can be done and improved in order to serve the purpose of scholarship and the learning better — that's a

different kind of message and that is a very different university-student relationship. University leaders need to follow up with concrete spaces or mechanisms of how the students can actually participate as citizens in university life.. Possibilities: in some universities, such as at Harvard, University Town hall meetings are such an example. When university administration decided to introduce a new general education programme they held three Town hall meetings with students to discuss the proposals. That is one possibility. Student survey is another possibility of engaging students as citizens. If the institution is sending students a survey asking about their satisfaction and engagement and if students provide feedback, such feedback will hopefully translate into some policies that might lead to improvement. Within the classroom, when the professor is looking for volunteers for a research project that she or he is undertaking, such invitation also calls for enacting citizenship because students engage with something which is the core purpose of this university –research, and at the same time students are learning, developing the connection with the professor, with the research field, with the discipline, with the professional networks — that is another way of doing it.

I don't want to confine citizenship only to political engagement in the governance of universities. Citizenship is also part of the university core functions of teaching, learning and research. Citizenship happens when students are willing to act beyond their self-interests, even if personal and communal interests often overlap. Citizenship happens when students engage with peers and the teachers, in activities they don't get paid for or are not mandatory course requirements and when immediate personal benefits are not clear. Political engagement in university governance and student representation are more straightforward aspects of citizenship if driven by communal interests rather than personal interests which often student representation is. Students sometimes become student representatives to promote their own political career. As long as they act fully in interest of students, that's fine If you look at citizens of countries, it is not only that we vote that makes us citizens or we confer our voice to a particular person to represent us in the decision making, we also deal a lot with civic involvement, we take part in non-profit organizations etc. If you are active critical citizen you are trying to intervene in your environment to make a change, to make it better. And it does not have to happen on the large scale of politics, it can happen in the microcosm of your village, or even your school or your classroom.

I haven't developed the concept of university citizenship any further but in my mind it is very closely linked to the sense of belonging which is essential for the students' learning and wellbeing while being a student. It is closely connected to the students developing a sense of greater purpose, collective communal interest and goes against cultural system of individualism where individual interests and individual needs are put ahead of the interests of the wider community.

In his presentation John Douglass was talking about international student body and different ways of students' participation in the university environment giving examples of Chinese students. Would it be appropriate to talk about cultural differences within a university?

Chinese students bring with them value of collectivism because this is the part of their cultural system. The question, however, is whether they are able to diffuse these values into the academic community at university abroad and whether they consider only fellow Chinese students as the group to whom they hold allegiance or the entire student cohort John suggested in his presentation that Chinese students are very willing and interested in helping each other — that is other Chinese students, but they interact less with the entire student cohort. They tend to belong to the group of Chinese students which is a subgroup within the academic community. So it is a question what kind of belonging and loyalty they feel or are able to develop to the institution they have joined. It is also a question what approach does the university take to try to integrate all students and help them to develop sense of belonging. At universities we have communities within communities within a larger institution. And this situation poses the difficult question of how to nurture belonging to the mother university rather than only to specific communities and sub communities within it. The question is to whom does this sense of affinity go to and how far does it reach? Is it affinity to your cohort: “we are the MA students on a programme on higher education administration, this is my group and I belong to it”. Or can affinity be transcended to more distant parts of the institution: “I feel affinity to the faculty of social sciences or school of education”. What kind of sense of belonging that is? What kind of sense of affinity? What kind of loyalty do students feel to the entire institution like Higher School of Economics where we are sitting now? Those are the difficult questions. And we know that especially the private institutions are trying to nurture the sense of belonging because they are interested in students contributions back philanthropically once they leave the universities. They do sports events and they have t-shirt and pens and alumni clubs and events for alumni but that is not invoking citizenship in the sense I am proposing here. Those activities are too closely associated with education seen as a set of consumer choices. Those activities do not necessarily foster this sense that students and the university are building something together. The issues universities are dealing with are so complex that inevitably require teamwork of people to tackle them. They call for collective endeavors that include students.

Is it possible to see student citizenship as part of university culture?

Citizenship is not something you learn from books. Citizenship is something you learn by doing, by being engaged with people in your

community, by being invited into initiatives that have a larger purpose. We have not studied enough organizational culture of universities yet: how can we change it when it needs to be changed. We don't know yet how symbolic messages are diffused and transcended into what students are actually hear and understand that university is communicating to them. Why culture is important we know — because culture provides the toolkit, the repertoire of possible choices of action that students and other members of the institution will take. It helps students establish what is possible, acceptable and valued in a specific institution and such understanding inevitably shapes their preferences and behavior.

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Editorial Manager
Voprosy obrazovaniya/Educational Studies. Moscow

Interview with Professor Paul Ashwin

Paul Ashwin is Professor at Lancaster University, UK. His professional interests include: quality of university teaching and education; development of education programs; relationship between higher education research and education policies. Being a special guest of the Russian Association of Higher Education Researchers at the 6th International Conference Rethinking Students: Ideas and New Research Approaches, Paul Ashwin presented his plenary paper Why would going to university change anyone? The role of knowledge in transforming students.

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Professor Ashwin, what can you say about students' engagement and their academic achievements?

Paul Ashwin: I think they are related. In the UK the “What works?” research programme found the two crucial things for students not dropping out in higher education in the first year was to have a sense of belonging in their institution and to feel engaged with their studies (see <http://www.phf.org.uk/publications/works-student-retention-success-final-report/>). The two things go together. So in a way there is a clear link with those two things.

A sense of belonging on its own isn't enough, you need to think about what it is the students feel they belong to. So you can have a sense of belonging to your institution and that means that you love the bar. You could have a sense of belonging to your institution and that could mean that you are a key member of, let's say, the canoeing society. And the point I was making and what's coming through in our research is that obviously on its own that's not a problem but unless parts of what students feel they belong to is their educational experience, unless what they think going to university means is related to their degree programme and the knowledge they are engaging with in their studies, then they don't change and develop the sense of who they are and their relation to the world.

It's one of those things that sounds completely obvious when you say it: of course — if you don't engage with your degree programme, why would you change? But it's one of those things we don't tend to think about when we are talking about students' experiences of higher education, or my point in the talk — when we think about quality we don't often use measures that tell us about those things. For me there is an important research question about how we capture those things and understand them but we also have to think how all of this translates into policy. If we just publish research saying it's for the people to make sense out of it then we haven't done enough. We know

about learning processes: you learn by reinterpreting; what you do is you create your own understanding of the thing you are looking at. As a researcher I think we also have a crucial role to play in helping policy-makers to come to an understanding of how we can say some things that are important, but we can't say them with the level of accuracy that you can, for example, measure time. There is no point in pretending that we can measure things with lasers when what we actually have has the accuracy of sledge-hammers.

I can remember we had an ex government Minister for Education come to Lancaster to give us a presentation He said: "The key question education researchers should be answering for me is: what is the optimum number of students in the classroom?" To me as education researcher that is a stupid question because the answer depends on who the students are and what you are helping them to learn. It does not make any sense to ask it as a question that has a single answer. My initial reaction was: if this is the kind of question you are asking, then I am not going to talk to you. But now with more experience, I know that to say to a politician 'what a stupid question' is not enough. What you have to try to do is engage in a discussion with them that helps to change their sense of what would be a more sensible question that gets to the things they are worried about. I think it's finding a path between giving politicians what exactly they want or giving them nothing they want. That's not easy and is going to be met by much more failures than success but it's worth struggling to do it. We have the responsibility to deal with those matters thoughtfully and not simply do what's easiest and most convenient.

What is the student's role in this process?

The whole movement towards student engagement and their involvement in curriculum design and institutional management is something that I am very supportive of. In a paper I wrote recently with Debbie McVitty "[The meaning of student engagement](#)" we argue that literature on student engagement is a conceptual mess at the moment because student engagement means so many different things. So we are trying to set up a conceptualization that looks at a degree of student engagement. Does student engagement mean students being consulted: "We are going to do this — what do you think?" Does this mean students are being engaged as partners: "Ok, let's discuss it together". Or does this mean students being the leaders: "How we are going to do this?". We also have different objects of student engagement. One object of student engagement which is normally ignored is student engagement with knowledge. And my argument would be that is the core engagement they have and all their other engagements are predicated on the assumption of their engagement knowledge.

Another form of engagement is engagement with the curriculum development, but only on the assumption of their engagement with

the knowledge. Then the third object of engagement is the development of communities. In a way our argument excludes some things, because we are saying: unless you are engaged with knowledge you then can't build the university community. So for me that's where the role of students is — we have to recognize that they are in higher education to gain an education and to engage with knowledge. So when they are engaging in curriculum development and community building they are doing it as people who are together in education otherwise you just end up as students sounding like managers. That's sort of what happens with students if you remove them from the fact that they are engaged in a degree programme. You need to recognize that it is their engagement with knowledge that leads them to the other forms of engagement.

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How Perceptions of Academic Honesty at the University Correlates with Student Engagement:

Conceptualization and Empirical Research Opportunities

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Abstract. Academic dishonesty among university students is a major problem for higher education and has negative economic impacts in many countries including Russia. While exploring why students choose dishonest ways of obtaining good grades instead of getting engaged in the learning process and acquiring as much knowledge and experience at the university as possible, most researchers focus on academically dishonest practices, ignoring the reasons for and factors of honest learning behavior. We regard student engagement as the opposite of academic dishonesty and propose a conceptual model of how academic honesty at the university influences various aspects of student engagement in learning activities. We conduct an empirical study to

test the hypothesis on the correlation between the characteristics of honesty at the university and parameters of student engagement suggested as part of the conceptual model. We use data collected by the Monitoring of Student Characteristics and Trajectories carried out in universities included in the Russian Association of Leading Universities in Economics and Management. Having analyzed the data on students of management and economics in eight Russian universities, we conclude that the suggested hypothesis has been largely confirmed, and the proposed conceptual model may serve as a productive basis for empirical research on the correlation between academic environment parameters and student learning behavior.

Keywords: higher education, academic dishonesty, dishonest behavior, learning activities, student engagement, honesty of academic environment.

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1. Academic Dishonesty and Factors of Its Spreading

Academic misconduct is a major problem of higher education in many countries including Russia. Research conducted since the 1940s¹ has shown that dishonest practices are used by a large proportion of students: rates vary from over 50% [Liska, 1978; Singhal, 1982; Hetherington, Feldman, 1964; Stannard, Bowers, 1970; McCabe, Trevino, Butterfield, 2001] to over 70% [Bowers, 1964; Baird, 1980], as reported by foreign universities in various periods of time.

There has been no research in Russia to provide accurate and reliable statistics on academic dishonesty, but the large popularity of the phenomenon in Russian universities can nevertheless be proved indirectly. Thus, for instance, the Monitoring of Education Markets and Organizations revealed that nearly two thirds of students used at least one dishonest practice in their studies in the monitored academic year². Internet plagiarism is the most widespread type of academic misconduct, being used by over one third of students. Nearly one in five students used cheat sheets and one in eight used information downloaded to their cell phones in the monitored year.

The high incidence of academic dishonesty in Russia is fueled by, among other things, the tolerance of the majority of the population for such dishonesty. For instance, the *Kurier* all-Russia survey conducted by the Levada Center in 2013 (ninth wave) revealed that more than half of the respondents found using cheat sheets in school and university to be acceptable. It should be noted that young people appeared to be more tolerant to academic misconduct than those over 30 years old (Fig. 1).

Using someone else's graduation and thesis papers is generally criticized more than using someone else's work or cheat sheets during studies. Yet, one in five respondents finds it acceptable, too. As in the previous case, people under 30 years of age are more tolerant to this type of academic dishonesty (Fig. 2).

Such high rates of academic dishonesty have grave consequences. First, they result in a low efficiency of investment in higher education [Sivak, 2006], which reduces the level of knowledge and skills among graduates and, consequently, the country's economic potential and development rates [Adebayo, 2010]. Additionally, students

¹ Drake [1941] is considered to be the first to study academic dishonesty.

² The analysis was performed based on the database of the 2014 Monitoring of Education Markets and Organizations. The sample included 2,995 university students. The question was stated as follows: "In this academic year, have you ever..." The possible answers were: 1) downloaded reports, essays, papers, etc., from the Internet? 2) copied notes from other student? 3) used cheat sheets or exam answers posted online? 4) used reports, essays, homework assignments, etc., prepared by other students of this university during previous years? 5) used information downloaded to your cell phone during exams? 6) used cheat sheets from other students in exams? 7) paid for term papers, theses, reports, etc., (or bought pre-written works)? 8) none of the above.

Figure 1. **Attitude towards using cheat sheets in school and university (%)**

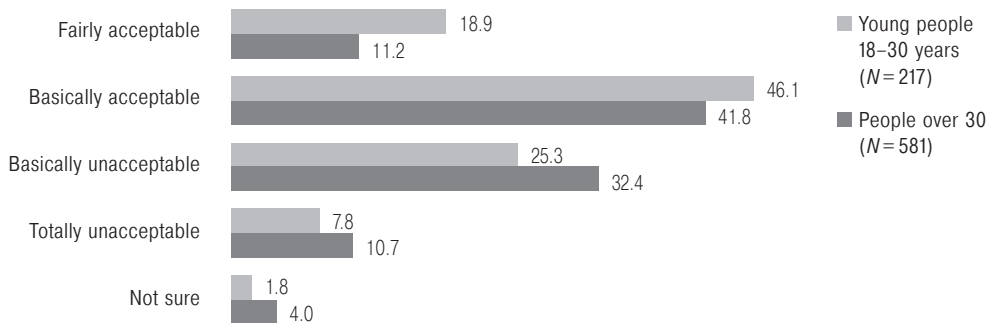
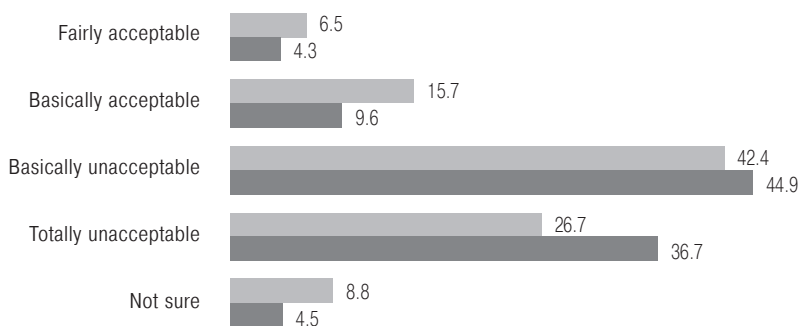


Figure 2. **Attitude towards using graduation and thesis papers written by someone else (%)**



Source: Kurier all-Russia study (Levada Center), 2013, ninth wave (The consolidated archive of economic and sociological data: <http://sophist.hse.ru/>). Question: “To what extent is it acceptable to use cheat sheets in school or university?”, “To what extent is it acceptable to use graduation or thesis papers written by someone else?”

committing academic dishonesty in university are likely to engage in unethical behavior at work [Sims 1993; Nonis, Swift, 2001; Latova, Latov, 2007]. Moreover, a number of empirical studies have shown that the widespread prevalence of academic dishonesty encourages highly motivated and otherwise honest students to also use dishonest practices [McCabe, Butterfield, Trevino, 2006].

Considering the level of academic dishonesty in universities, some foreign researchers suggest identifying those university characteristics that can promote or, on the contrary, inhibit the spread of academic misconduct. In particular, it has been empirically proven that dishonest practices are less common in universities with an honor code system [Bowers 1964; Brooks et al., 1981; Campbell, 1935; Canning, 1956; McCabe, Trevino, 1993]. A student’s choice of whether or not to cheat is determined by, among other things, their perception of the academic environment [Pulvers, Diekhoff, 1999]. The systemic caus-

es of the high incidence of academic dishonesty in Russian universities are addressed in Rumyantseva and Denisova-Schmidt [2015], Radaev and Chirikov [2006], and Golunov [2010].

A series of studies have been conducted by Russian researchers to explore academic dishonesty among school and university students. Ekaterina Borisova, Leonid Polishchuk, and Anton Suvorov [2013] demonstrated that the probability of a student cheating on an out-of-class exam depends on this student's opinion of the academic honesty of his or her peers. Based on a survey of 11th grade students, Viktor Gizhitskiy [2014] identified groups of learning stimuli that correlate positively and negatively with academic misconduct. He also found that dishonest practices show a significant negative correlation with school performance, but no correlation with Unified State Exam scores.

Most researchers in this field focused on the reasons for academic dishonesty and factors promoting dishonest practices, while ignoring the factors that may encourage *academic honesty*, which is understood as studying and investing one's time and effort in complying with the education program's requirements and acquiring knowledge and skills. Academic honesty is a behavior that implies *student engagement*.

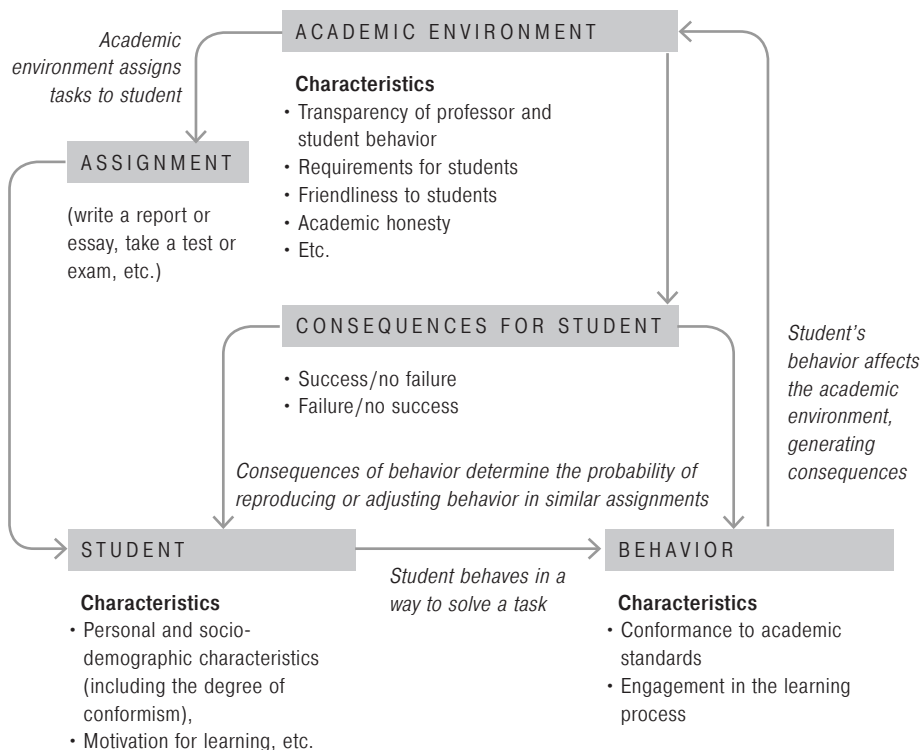
In terms of education policies and reducing the incidence of academic dishonesty, it would be productive to explore how honesty at the university affects *student engagement in honest academic practices*. This paper attempts to conceptualize the correlation between the perception of academic honesty at the university and student engagement, and also to test this correlation in an empirical study based on surveys among bachelor and specialist students of economics and management in eight Russian universities.

2. Conceptualizing the Correlation between Academic Honesty at the University and Student Engagement

We suggest conceptualizing the correlation between the frequency of cheating and student engagement within the behaviorist tradition, notably using B. F. Skinner's theory of operant behavior and conditioning [Skinner, 2003]. Operant behavior is behavior that influences the outside world through its consequences. It usually occurs when a person faces the need to deal with the challenges of the outside world. A successful response will very likely be reproduced in the future as this is what operant conditioning is about, i. e. consequences may influence the actor his or herself, too [Ibid].

Let us regard academic dishonesty as a variant of operant behavior. To do this, we need to apply Skinner's ideas to explaining academic behavior in general and then narrow our theoretical model down to dishonest practices as an isolated case.

The academic behavioral model is represented schematically in Figure 3. Under this model, the academic environment, which includes all objects and people in the university, assigns tasks to the

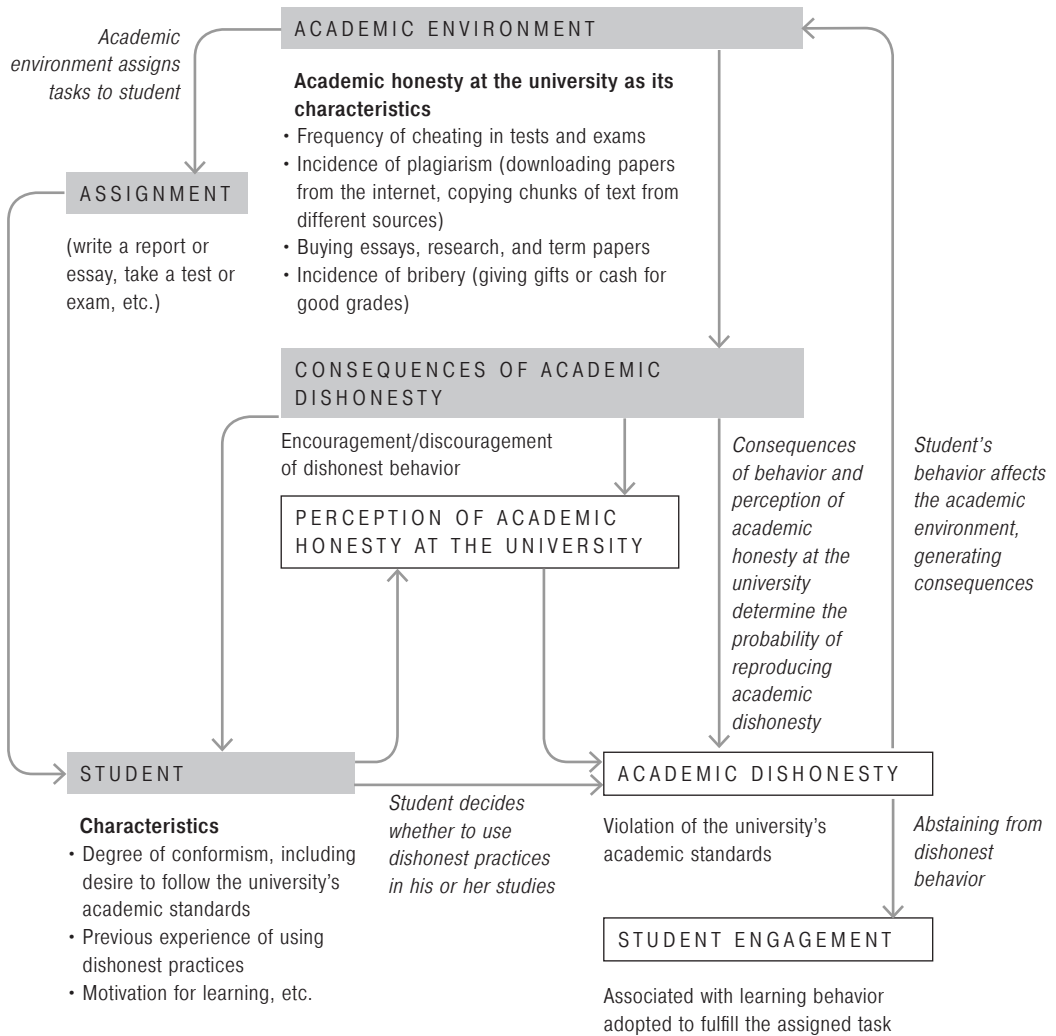
Figure 3. **University student learning behavioral model**

student. These tasks may include essays or papers given by teachers, tests, reports, etc., as well as examinations and final tests provided for by the curriculum. Academic environment has a set of characteristics that may directly or indirectly affect assigned tasks, students themselves, and their behavior. Such characteristics may include the transparency of professor and student behavior, requirements for students, friendliness, academic honesty, etc. For the purpose of this study, we will only dwell on academic honesty and try to describe it using several indicators.

In our conceptual model, student characteristics include motivation for learning, socio-demographic parameters, personal traits (including the degree of conformism), etc. All of this shapes student behavior in solving tasks assigned by the academic environment. We analyze this behavior for conformance to academic standards and the degree of engagement in the learning process. Student behavior affects academic environment by generating consequences that, in their turn, exert influence on the student and on the probability of reproducing certain responses in the future.

In order to conceptualize the correlation between academic honesty at the university, its perception by students, and student engage-

Figure 4. **Relationship between perception of academic honesty at the university and student engagement**



ment, let us turn to the diagram in Figure 4, which is based on the same conceptual model, but instead of academic behavioral patterns, dishonest practices are treated as operant behavior. We are only interested in one parameter of the academic environment, notably academic honesty at the university. It is characterized by the incidence of: 1) cheating in tests and examinations; 2) plagiarism; 3) buying pre-written papers; and, 4) bribery (giving goods or money for good grades). When a student receives an assignment from the academic environment, he or she decides whether to use dishonest practices or abstain from academic misconduct. If they resort to dishonest-

ty, the environment responds by generating consequences which may either encourage further academic dishonesty (if it brings the desired outcome) or discourage it (if it brings an undesired outcome). The consequences of dishonest practices have effects on the probability of reproducing them in cases of similar assignments as well as on a student's perception of academic honesty at the university. To avoid complications in the conceptual model, we deliberately excluded those factors that might also influence student perception of academic honesty at the university: consequences of academic dishonesty committed by other students, awareness of such behavior and its consequences, etc. Meanwhile, a student's perception of academic honesty at the university is one of the few available methods of measuring university honesty.

This conceptual model does not cover the reasons for academic misconduct in university. It only explains why the probability of *honest* behavior increases under some conditions of the academic environment and reduces under others. Additionally, this model helps shed light on the correlation between honesty as a characteristic of the academic environment and personal student engagement, assuming that student engagement and academic dishonesty are opposite extremes (students choose between honest learning that engages them and dishonest practices allowing them to obtain a grade with little or no learning effort). These two features of the conceptual model (ignoring the reasons for academic dishonesty and focusing on honest behavior) form its key distinction from previous conceptions: an approach that adapts the ideas of Becker's economic theory [Michaels, Mieth, 1989; Kerkvliet, 1994; Mixon, 1996], as well as using Ajzen's theory of planned behavior [Stone, Jawahar, Kisamore, 2009] and the concepts based around identifying the factors of academic dishonesty, which are scrutinized in Shmeleva [2015].

Research on the relationship between academic environment characteristics and student engagement, as well as student attitudes towards cheating and plagiarism was carried out as part of the Monitoring of Student Characteristics and Trajectories among bachelor and specialist students in management and economics. The project was implemented in eight universities³ included in the Russian Association of Leading Universities in Economics and Management in 2013–2014, and was designed to yield comparative data with a view to enhance education programs in economics and management. The survey was

3. Empirical Research on the Relationship between the Perception of Academic Honesty at the University and Student Engagement

3.1. Data and methods

³ The analysis included the results of student surveys from Voronezh State University; Kazan Federal University; the Moscow State University of Economics, Statistics, and Informatics; Novosibirsk State University; Tomsk State University; National Research University—Higher School of Economics; Northern (Arctic) Federal University; and Ural Federal University.

conducted online in all universities. In some of them, students received a link to the questionnaire in their emails, in others online questionnaires were completed in computer classrooms. The response rate was 20% on average, varying from 12% to 44%. The sample covered 3,717 students⁴.

3.2. Assessing the incidence of academic dishonesty

The incidence of the four types of academic dishonesty varies greatly across the eight universities. Still, some common patterns can be identified. Plagiarism practices are most widespread in both economics and management majors. Thus, over one third of respondents report that many students in their faculty download papers from the Internet, while about 25% claim their peers have ordered custom papers at least once. Cheating on tests and examinations is another popular practice: 16–17% of respondents pointed out that most exams in their faculty could be passed using this deceitful practice. The type of academic misconduct involving violation of academic standards by both student and professor—namely bribery—is less widespread. On average only 12% of economics students and 9% of management students believe their professors could possibly commit bribery. However, this indicator varies largely across the universities, from 3% to 33%.

The indicator of downloading pre-written works from the Internet is also highly varied (Fig. 5) from 7% to 52%. The incidence of cheating on exams and tests shows the lowest variability, averaging 12% in all universities. This is probably because this type of dishonest behavior is the least controllable by professors. While downloading papers from the Internet can be terminated by using plagiarism checkers, it is much more difficult to ensure academic honesty throughout tests or examinations.

As we can see, plagiarism and cheating are widespread dishonest practices used by economics and management students.

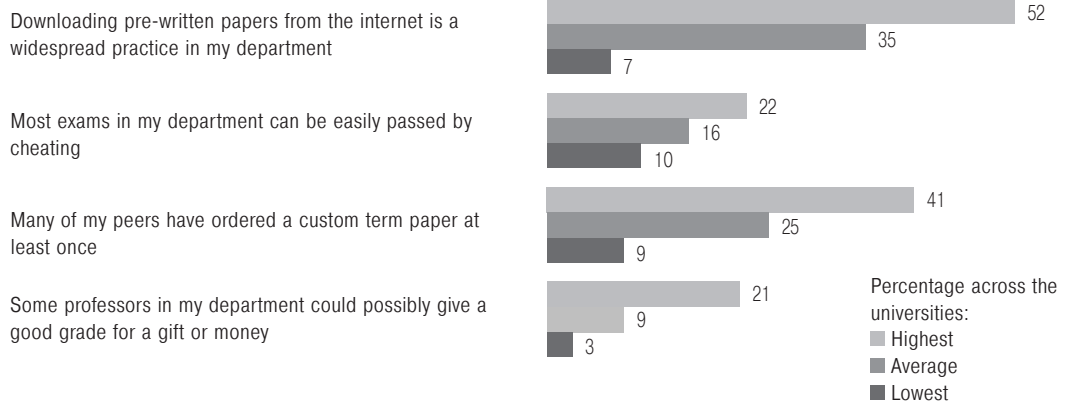
3.3. Patterns of student engagement

Let us now analyze how the incidence of academic dishonesty affects a student's personal behavioral patterns, particularly their engagement in the learning process. Since student engagement is a multidimensional latent variable, the Monitoring of Student Characteristics and Trajectories assessed it using 18 indicators reflecting various aspects of classroom and extracurricular activities. These indicators were measured on an ordinal scale. To move from ordinal to interval variables and shrink the attribute space, we performed a factor analysis of the data and identified five patterns of student engagement:

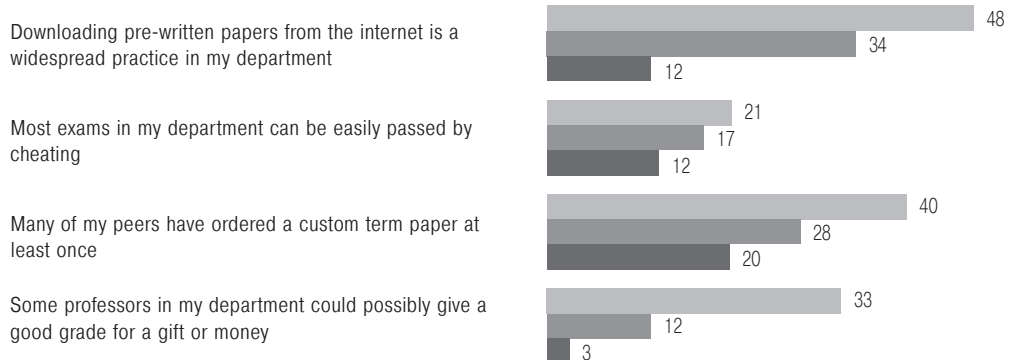
⁴ The survey, which was conducted as part of the Monitoring of Student Characteristics and Trajectories, involved students from 11 universities, with a total sample of 4,376 students. However, three universities provided low-quality data, so they were dropped from the analysis.

Figure 5. **Incidence of academic dishonesty across the universities under study** (percentage of students who agree to the statements, %)

Economics majors



Management majors



- active interaction with professors;
- engagement in learning;
- non-compliance with the learning process requirements;
- engagement in classroom discussions;
- attendance.

The factor model of student engagement was built by principal components analysis with varimax rotation. The resulting model explains 61.4% of initial value dispersion. The factor loadings obtained in the analysis are given in Table 1. Let us describe each engagement pattern briefly.

Active interaction with professors. In this pattern, students direct their efforts toward establishing and maintaining interactions with professors. The factor has high factor loadings for the frequency of communication with professors on learning- and non-learning-related issues (*“discussed your grades and course assignments with profes-*

Table 1. **Factor loadings**

	Active interaction with professors	Engagement in doing assignments	Non-compliance with learning process requirements	Engagement in classroom discussions	Attendance
Participated in classroom discussions	0.146	0.291	-0.118	0.800	0.011
Used knowledge from various courses in a classroom discussion	0.219	0.297	-0.095	0.760	0.002
Solved problems on the blackboard or answered the professor's questions	0.097	0.516	-0.155	0.469	0.127
Prepared reports or presentations in seminars	0.061	0.753	-0.103	0.224	0.110
Worked on additional course-related assignments not required to get an excellent grade	0.375	0.578	-0.214	0.072	0.053
Worked on team assignments with peers during seminars	0.082	0.691	0.022	0.173	0.052
Please specify the proportion of lectures you attended in the current academic year (at least approximately)	0.096	0.100	-0.225	-0.041	0.835
Please specify the proportion of seminars you attended in the current academic year (at least approximately)	0.003	0.120	-0.102	0.086	0.885
Late on course-related assignments	0.089	0.092	0.675	-0.202	-0.252
Came to classes unprepared	-0.045	-0.155	0.843	-0.072	-0.195
Attended classes but did not concentrate or listen to the professor	-0.109	-0.175	0.787	0.023	0.031
Discussed your grades and course assignments with professors face-to-face	0.602	-0.076	0.049	0.345	-0.011
Discussed your occupational and career plans with professors	0.737	0.174	-0.045	0.092	-0.017
Discussed course-related questions and ideas with professors out of class	0.757	0.068	-0.071	0.118	-0.005
Received written commentaries from professors on your prepared assignments	0.634	-0.11	-0.011	0.225	0.023

	Active interaction with professors	Engagement in doing assignments	Non-compliance with learning process requirements	Engagement in classroom discussions	Attendance
Received spoken commentaries from professors on your prepared assignments	0.561	0.107	0.030	0.330	0.103
Discussed drafts of written assignments (other than term or thesis papers) with professors	0.728	0.235	-0.018	-0.120	0.041
Worked with professors on a research or creative project (beyond the curriculum) out of class	0.677	0.277	-0.049	-0.145	0.053

sors face-to-face”, “discussed your occupational and career plans with professors”, “discussed course-related questions and ideas with professors out of class”, “received written commentaries of professors on your prepared assignments”, “received spoken commentaries of professors on your prepared assignments”, “discussed drafts of written assignments (other than term or thesis papers) with professors”, “worked with professors on a research or creative project (beyond the curriculum) out of class”).

Engagement in learning. The second engagement pattern features a high degree of commitment to learning both in and out of class. This factor has high factor loadings for the following: *the frequency of solving problems on the blackboard or answering the professor’s questions; the frequency of preparing reports or presentations; the frequency of doing extra assignments; the frequency of participating in teamwork in the classroom.*

Non-compliance with learning process requirements. The third pattern consists of non-engagement in the learning process. This factor has high factor loadings for *the frequency of late assignments, coming to classes unprepared, and failure to concentrate on the learning material during classes.*

Engagement in classroom discussions. The degree of participation in classroom discussions was singled out as a separate pattern of student engagement: *“participated in classroom discussions”, “used knowledge from various courses in a classroom discussion”.*

Attendance. This factor has high factor loadings for *attendance of lectures and seminars.*

Below, we will use the obtained factor values to explore the relationship between the perception of academic honesty at the university and student engagement.

Table 2. Regression coefficients for the model with a dependent variable of “active interaction with professors”

	Non-standardized coefficients		Standardized beta coefficient	Significance level
	B	Standard error		
Constant	0.000	0.039		0.994
Predictors				
Downloading pre-written papers from the Internet is a widespread practice in my department	-0.199	0.045	-0.096	0.000
Most exams in my department can be easily passed by cheating	-0.130	0.055	-0.052	0.019
Many of my peers have ordered a custom term paper at least once	-0.053	0.047	-0.024	0.260
Some professors in my department could possibly give a good grade for a gift or money	0.060	0.075	0.017	0.425

Note: R-squared = 0.052, adjusted R-squared = 0.049, standard error of the estimate = 0.98, Durbin-Watson statistic = 0.795. Control variables: form of education (publicly funded), major (economics), gender (male).

3.4. Correlation between the incidence of academic dishonesty and student engagement

In accordance with the proposed conceptual model, we suggest a hypothesis that academic honesty at the university is related to student engagement. Therefore, we assume that how students perceive the incidence of such dishonest practices as downloading papers from the internet, cheating in tests and exams, buying papers, and bribing is related to the engagement patterns described above.

We used linear regression to analyze the correlation between the characteristics of academic honesty at the university and student engagement. We built six regression models where dependent variables were represented by factor values of student engagement patterns: active interaction with professors (model 1); engagement in learning (model 2); non-compliance with learning process requirements (model 3); and engagement in classroom discussions (model 4). Separate regression models were built to assess the proportion of lectures attended (model 5) and the proportion of seminars attended (model 6). The four indicators of academic dishonesty incidence were used as predictors. Additionally, we added control variables reflecting a respondent’s gender, major, and form of education⁵.

⁵ The variables were coded as follows. Gender: 0—female, 1—male; form of education: 0—commercial, 1—publicly funded; major: 0—management; 1—economics.

Table 3. **Regression coefficients for the model with a dependent variable of “engagement in learning”**

	Non-standardized coefficients		Non-standardized coefficients	Standardized beta coefficient
	B	Standard error		
Constant	0.014	0.038		0.719
Predictors				
Downloading pre-written papers from the Internet is a widespread practice in my department	0.168	0.044	0.081	0.000
Most exams in my department can be easily passed by cheating	-0.184	0.054	-0.074	0.001
Many of my peers have ordered a custom term paper at least once	0.148	0.046	0.069	0.001
Some professors in my department could possibly give a good grade for a gift or money	-0.036	0.073	-0.010	0.624

Note: R-squared = 0.097, adjusted R-squared = 0.095, standard error of the estimate = 0.952, Durbin-Watson statistic = 0.849. Control variables: form of education (publicly funded), major (economics), gender (male).

The first regression model was built for the *active interaction with professors* pattern. The analysis shows that the manifestation of this pattern correlates significantly with two variables reflecting the perception of academic dishonesty at the university: the perception of the incidence of downloading papers from the internet in the department and the perception of the chances of passing an exam by cheating (Table 2). The assessment of the incidence of these dishonest practices correlates negatively with the degree of interaction between students and professors on learning- and non-learning-related issues. Meanwhile, the assessment of the incidence of ordering custom papers and bribing correlates little with the degree of interaction.

The second regression model was built for the *engagement in learning* pattern (Table 3). The perception of the incidence of cheating in exams correlates with the manifestation of this pattern. Also, engagement in learning correlates positively with the assessment of the incidence of buying or downloading papers. This result is surprising and inconsistent with the hypothesized negative effects of the incidence of academic dishonesty on student engagement. Perhaps highly engaged students are more critical about the behavior of their peers and are more likely to answer positively to the question about

Table 4. **Regression coefficients for the model with a dependent variable of “non-compliance with learning process requirements”**

	Non-standardized coefficients		Non-standardized coefficients	Standardized beta coefficient
	<i>B</i>	Standard error		
Constant	-0.119	0.038		0.002
Predictors				
Downloading pre-written papers from the Internet is a widespread practice in my department	0.202	0.045	0.097	0.000
Most exams in my department can be easily passed by cheating	0.147	0.055	0.059	0.008
Many of my peers have ordered a custom term paper at least once	0.147	0.047	0.068	0.002
Some professors in my department could possibly give a good grade for a gift or money	0.008	0.075	0.002	0.917

Note: R-squared = 0.060, adjusted R-squared = 0.057, standard error of the estimate = 0.971, Durbin-Watson statistic = 0.886. Control variables: form of education (publicly funded), major (economics), gender (male).

the incidence of such practices. Additional research is required to ensure more valid conclusions.

From the regression model for the *non-compliance with learning process requirements* pattern, we can see a positive correlation between the dependent variable and an assessment of three academic environment characteristics: the incidence of downloading pre-written papers, the chances of passing an exam by cheating, and the incidence of ordering custom papers (Table 4). Based on the analysis, we can suggest that academic misconduct is associated with a high incidence of student non-compliance with learning process requirements.

Judging by the parameters of the fourth regression model, *engagement in classroom discussions* correlates negatively with the incidence of downloading papers from the Internet and with the assessment of the incidence of bribery (Table 5). Meanwhile, there is a positive correlation between the incidence of cheating and engagement in classroom discussions, which contradicts our hypothesis and conceptual model. It may be that this correlation is also occasional and caused by a high degree of criticism among highly engaged students. As a more complex and detailed analysis (notably, multilevel regression) is impossible with the data at hand, we are unable to provide a more reliable explanation of this empirical evidence.

Table 5. **Regression coefficients for the model with a dependent variable of “engagement in classroom discussions”**

	Non-standardized coefficients		Non-standardized coefficients	Non-standardized coefficients
	B	Standard error		
Constant	0.029	0.039		0.455
Predictors				
Downloading pre-written papers from the Internet is a widespread practice in my department	-0.182	0.046	-0.088	0.000
Most exams in my department can be easily passed by cheating	0.174	0.057	0.069	0.002
Many of my peers have ordered a custom term paper at least once	0.028	0.048	0.013	0.557
Some professors in my department could possibly give a good grade for a gift or money	-0.245	0.076	-0.070	0.001

Note: R-squared = 0,015, adjusted R-squared = 0,012, standard error of the estimate = 0,994, Durbin-Watson statistic = 0,833. Control variables: form of education (publicly funded), major (economics), gender (male).

The fifth and sixth regression models were built separately for *attendance of lectures and seminars* (Tables 6 and 7). Attendance of lectures correlates negatively with the assessment of the incidence of downloading pre-written papers, cheating, and ordering custom papers. Only one significant factor was identified to assess the attendance of seminars: perception of the chances of passing most exams by cheating.

On the whole, the analysis performed allows us to say that the perception of academic honesty at the university may correlate negatively with student engagement in the learning process. Thus, our hypothesis on the correlation between academic honesty at the university and student engagement has received some support. The empirical analysis of the correlation between academic honesty at the university and student engagement described in this paper is preliminary and only aims to empirically prove some of the arguments in this conceptual model. A deeper investigation of the correlation between academic honesty at the university and student engagement requires surveying a higher number of universities and conducting a multilevel analysis to directly assess the effects of the academic environment.

Table 6. Regression coefficients for the model with a dependent variable of “assessment of the proportion of lectures attended”

	Non-standardized coefficients		Non-standardized coefficients	Non-standardized coefficients
	<i>B</i>	Standard error		
Constant	85.516	0.653		0.000
Predictors				
Downloading pre-written papers from the Internet is a widespread practice in my department	-2.108	0.828	-0.045	0.011
Most exams in my department can be easily passed by cheating	-5.210	1.057	-0.088	0.000
Many of my peers have ordered a custom term paper at least once	-3.765	0.901	-0.074	0.000
Some professors in my department could possibly give a good grade for a gift or money	2.036	1.368	0.026	0.137

Note: R-squared = 0.034, adjusted R-squared = 0.032, standard error of the estimate = 21.504, Durbin-Watson statistic = 1.239. Control variables: form of education (publicly funded), major (economics), gender (male).

Table 7. Regression coefficients for the model with a dependent variable of “assessment of the proportion of seminars attended”

	Non-standardized coefficients		Non-standardized coefficients	Non-standardized coefficients
	<i>B</i>	Standard error		
Constant	92.545	0.484		0.000
Predictors				
Downloading pre-written papers from the Internet is a widespread practice in my department	-0.659	0.614	-0.019	0.284
Most exams in my department can be easily passed by cheating	-1.638	0.785	-0.038	0.037
Many of my peers have ordered a custom term paper at least once	-0.745	0.668	-0.020	0.265
Some professors in my department could possibly give a good grade for a gift or money	-0.338	1.015	-0.006	0.739

Note: R-squared = 0.016, adjusted R-squared = 0.014, standard error of the estimate = 15.956, Durbin-Watson statistic = 1.227. Control variables: form of education (publicly funded), major (economics), gender (male).

Table 8. **Correlation between aspects of student engagement in the learning process and assessment of the four types of academic dishonesty**

Active interaction with professors	Engagement in learning	Non-compliance with learning process requirements	Engagement in classroom discussions	Assessment of the proportion of lectures attended	Assessment of the proportion of seminars attended	
-	+	+	-	-		Downloading pre-written papers from the Internet is a widespread practice in my department
-	-	+	+	-	-	Most exams in my department can be easily passed by cheating
	+	+		-		Many of my peers have ordered a custom term paper at least once
			-			Some professors in my department could possibly give a good grade for a gift or money

This paper offers a conceptual model of correlation between academic honesty at the university and student engagement as an indicator of honest learning practices, based on Skinner's ideas of operant behavior and conditioning. The model has two distinctive features: first, it does not consider the reasons for academic dishonesty, but rather focuses on environment characteristics that can increase or decrease the incidence of dishonest behavior; second, it studies not only academic dishonesty, but also academic honesty associated with student engagement in learning activities.

This paper presents the results of empirically testing the hypothesis regarding the correlation between characteristics of academic honesty at the university and various aspects of student engagement. The survey involved students of economics and management in eight Russian universities. It has some restrictions related to differences in the surveying procedure across universities and to the fact that the number of participating universities was insufficient to perform a multilevel analysis and assess the effects of environment characteristics separately from those of the personal characteristics of the respondents.

The analysis provided data proving that a high level of academic honesty at the university may increase the probability of student engagement. Table 7 shows the significant correlations revealed as a result of building six regression models. However, some results were surprising and inconsistent with the proposed conceptual model. These include the positive correlation between a manifestation of the "engagement in learning" factor and positive answers to the

4. Conclusion

statements “Downloading pre-written papers from the internet is a widespread practice in my department” and “Many of my peers have ordered a custom term paper at least once”, as well as between engagement in classroom discussions and assessment of the incidence of cheating in tests and exams. Such results are most likely possible because highly engaged students assess the incidence of academic dishonesty among peers differently than lowly engaged students. There is also an alternative hypothesis: academic dishonesty at universities that is manifested as a high incidence of plagiarism or cheating may have positive effects on some aspects of student engagement (all other aspects begin negatively correlated), making students adapt to specific university conditions to get good grades.

The results of this study demonstrate that the proposed conceptual model may serve as a productive basis for empirical research on the correlation between academic environment parameters and student learning behavior, including dishonest practices. Additionally, they allow us to contend that educational policies should not only consider measures to prevent academic dishonesty, but also opportunities for encouraging honest behavior and engagement in learning.

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Do Anti-Corruption Educational Campaigns Reach Students?

Evidence from two cities in Russia and Ukraine

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Abstract. The authors investigate the effect of anti-corruption educational materials—an informational folder with materials designed by Transparency In-

ternational—on the willingness of students to participate in an anti-corruption campaign and their general judgment about corruption in two cities in Russia and Ukraine by conducting experiments. During a survey of 350 students in Khabarovsk, Russia, and 600 students in Lviv, Ukraine, young people were randomly exposed to either a folder with information about the negative effects of corruption in general and in the higher education system in particular (treatment group), or a folder with information irrelevant to corruption (control group). The effects were statistically significant in the total sample in Khabarovsk and only in some social groups in Lviv. The results might be interesting not only for scholars, but also for policy makers and practitioners.

Keywords: Anti-Corruption Campaigns, Corruption, Academic Integrity, Experiments, University, Students, Russia, Ukraine.

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This paper compares the effectiveness of anti-corruption interventions at universities in Khabarovsk, Russia, with the results at universities in Lviv, Ukraine, which were published in an earlier study by Denisova-Schmidt, Huber, and Prytula [2015]. Experiments on corruption are new trends in the study of this phenomenon. One of the reasons behind this development is that these experiments offer more convinc-

1. Introduction

ing causal explanations of the results compared to other techniques (see, for example, discussions in [Serra, Wantchekon, 2012; Findley, Nielson, Sharman, 2013; Holmes, 2015]).

Russia and Ukraine represent very interesting cases for studying this question. They both possess very good and longstanding higher education systems and they both are among the most corrupt countries in the world.¹ Both countries have undergone several significant changes in the recent past, including the transition period following the breakup of the USSR, the Bologna process, and the standardization of the university admissions procedure (cf. [Denisova-Schmidt, Leontyeva, Prytula 2014a, 2014b]). Moreover, both countries have implemented some important anti-corruption initiatives and laws in the area of higher education. For example, the replacement of entrance examinations with new unified exams—the *Edinyi Gosudarstvennyi Ekzamen* (EGE) (Engl.: Unified State Exam) and *Vneshnee nezavisimoe otsenivanie* (VNT) (Engl.: External Independent Assessment)—which has reduced bribery at the admissions level [Denisova-Schmidt, Leontyeva 2014; Klein 2014].

Using materials developed by Transparency International, we tested the effects of anti-corruption campaigns among students at selected universities in two regional centers—Khabarovsk and Lviv—in the first half of 2015. In particular, we examined the willingness of students to participate in an anti-corruption campaign by distributing flyers to other students on campus. As a social group, students are one of the major forces in fighting against corruption [Altbach, Klemencic 2014; Klemencic 2014]. Taking into account the role of students in society, the aim of our study is to measure the effectiveness of an anti-corruption intervention among students in Russia and Ukraine and their attitude towards this phenomenon by conducting an experiment.

When working on corruption in higher education, Russian scholars usually distinguish between “corruption” (often only monetary corruption) and “cheating” [Golunov, 2014]. In our paper we define corruption in broader terms as “the abuse of entrusted power for private gain” (Transparency International) as well as the lack of academic integrity, including the use of cheat sheets, copying from others during exams, plagiarism, “academic collusion” [Titaev, 2012], and other forms (see, for example, [Denisova-Schmidt, 2013, 2015; Galitskii, Levin, 2008; Leontyeva, 2010a; Leontyeva, 2010b; Rimskii, 2010, 2011a, 2011b; Titaev, 2005; Osipian, 2012a, 2012b]; for more information, see the discussion on defining corruption in [Denisova-Schmidt, Huber, Leontyeva, 2015]).

The remainder of this paper is organized as follows: Chapter 2 outlines the research design, Chapter 3 describes the methods applied and the results received, and Chapter 4 finishes with a conclusion.

¹ Transparency International ranked Russia 136th and Ukraine 142nd in its 2014 Corruption Perception Index of 175 countries.

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Table 1. **Student Profile**

	Khabarovsk	Lviv
Female students	54.3 (<i>n</i> = 190)	42.2 (<i>n</i> = 253)
Male students	45.7 (<i>n</i> = 160)	57.8 (<i>n</i> = 347)
Social sciences	35.4 (<i>n</i> = 124)	34.7 (<i>n</i> = 208)
Technical sciences	48.0 (<i>n</i> = 168)	42.2 (<i>n</i> = 253)
Natural sciences	2.6 (<i>n</i> = 9)	10.3 (<i>n</i> = 62)
Humanities	14 (<i>n</i> = 49)	12.7 (<i>n</i> = 76)

Students were drawn from universities in Khabarovsk, Russia, and Lviv, Ukraine. Khabarovsk is a major city located in the Russian Far East with a population of more than 600,000. Lviv is a major city in the western part of Ukraine with a population of more than 700,000. Khabarovsk hosts 23 universities, while Lviv is home to 26. Our sample includes only respondents studying at state universities in four main subject areas representing a majority of all students: social, natural, and technical sciences, and the humanities (Table 1). We considered students studying at public universities on-site with at least three to five prior semesters (*2-oi kurs* or *3-ii kurs*). The representative study was conducted in early 2015 and had 950 student-participants in the survey: 350 respondents from Russia and 600 from Ukraine. Both genders were represented as follows: 54.3% (*n*=190) female students and 45.7% (*n*=160) male students from Khabarovsk, and 42.2% (*n*=253) female students and 57.8% (*n*=347) male students from Lviv (Table 1). The participating students were all approximately the same age (19–20 years). Students were approached by the interviewer. The face-to-face interviews were conducted on the university campuses. The study was conducted completely in the native language of all the persons involved—Russian or Ukrainian, respectively. No language-based misunderstandings are expected. At a particular point in the interview, students were randomly provided with either a folder with information about the negative effects of corruption in general and in the higher education system in particular (treatment group)², or a folder with information irrelevant to corruption (control group). Randomization was made on a timing rule: The interviewer looked at his or her watch and if it showed an even-numbered minute, the student was put into the treatment group and provided with anti-corruption materials, otherwise the respondent was assigned to

2. Research design

² The anti-corruption folder was based on materials designed by Transparency International (see Appendix for further details).

the control group and received corruption-irrelevant information (see more in [Denisova-Schmidt, Huber, Prytula, 2015]).

Table 2 and Table 3 report the means of selected personal characteristics of the respondents across treatment states for both Khabarovsk and Lviv: 314 individuals (90% of the sample) in Khabarovsk were without missing information in any of the covariates and 556 individuals (93% of the sample) in Lviv were without missing information in any of the covariates. The data provided a profile of the students who participated in the survey—their backgrounds (gender, family, income, place of birth, and residence), their motives for obtaining a higher education (to get a good education, to get a good job in the future, to obtain a diploma), their field of study, including the year and program involved (state stipend or self-payer), and the mean differences and p-values of two sample t-tests. The statistical insignificance of most of these differences confirms that the randomization of the treatment was correct and that the minor item nonresponse issue did not influence the randomization. Alone, the mean differences in being inscribed in one of the universities and in the field of social science in Khabarovsk, as well as in the “study program without tuition fees” group in Lviv are significant at the 5% level, while none of the remaining variables are significantly different across treatment states at the 10% level.

3. Methods and results

As in [Denisova-Schmidt, Huber, Prytula 2015], we evaluated the impact of the intervention based on three econometric methods. First, we considered the mean differences in the outcome variables across treatment states. If the treated and control groups are comparable in any characteristics that potentially affect the outcomes as intended by the randomization of the treatment, then taking mean differences is an unbiased estimate of the intervention’s causal effect. Even in experiments, some (hopefully minor) differences in characteristics across treatment groups may occur, in particular when the sample size is small. We therefore also considered two methods that account for differences in any of the observed characteristics displayed in Table 2 and Table 3.

The first estimator is an OLS regression of the outcome of the treatment and the observed characteristics,³ which linearly controls for differences in the latter variables. However, the potential drawbacks of OLS are its linearity assumption, which may be violated in

³ Depending on the outcome variable considered, different observed characteristics were significant in different regressions. Among those variables that are more frequently significant than other ones is the choice of university and/or field of study, gender, family background (e. g. parent education and wealth), study year, reasons for studying, and paying a fee. However, there is no characteristic that was significant in all of the regressions.

Table 2. Mean covariate values by treatment status (Khabarovsk)

Variable	$T = 0$	$T = 1$	Diff	p -value
Gender: male (binary)	0.444 (0.042)	0.453 (0.038)	0.008 (0.057)	0.881
Birth year	1994.757 (0.069)	1994.700 (0.070)	-0.057 (0.098)	0.562
Family consists of both parents (binary)	0.819 (0.032)	0.800 (0.031)	-0.019 (0.045)	0.663
At least one parent working (binary)	0.986 (0.010)	0.982 (0.010)	-0.004 (0.014)	0.790
Both parents have at most intermediate education (binary)	0.299 (0.038)	0.318 (0.036)	0.019 (0.052)	0.717
Number of siblings	0.931 (0.063)	0.959 (0.070)	0.028 (0.094)	0.765
Self-assessed family wealth: satisfactory (binary)	0.222 (0.035)	0.182 (0.030)	-0.040 (0.046)	0.384
Self-assessed family wealth: good (binary)	0.556 (0.042)	0.612 (0.037)	0.056 (0.056)	0.316
Self-assessed family wealth: very good (binary)	0.174 (0.032)	0.135 (0.026)	-0.038 (0.041)	0.353
Main reason for studying: good education (binary)	0.368 (0.040)	0.394 (0.038)	0.026 (0.055)	0.637
Main reason for studying: to find a good job (binary)	0.465 (0.042)	0.506 (0.038)	0.041 (0.057)	0.475
Main reason for studying: to obtain a diploma (binary)	0.104 (0.026)	0.059 (0.018)	-0.045 (0.031)	0.148
University id: 1 (binary)	0.431 (0.041)	0.388 (0.037)	-0.042 (0.056)	0.449
University id: 2 (binary)	0.417 (0.041)	0.406 (0.038)	-0.011 (0.056)	0.847
University id: 3 (binary)	0.035 (0.015)	0.094 (0.022)	0.059 (0.027)	0.030
Study field: humanities (binary)	0.132 (0.028)	0.147 (0.027)	0.015 (0.039)	0.701
Study field: social sciences (binary)	0.417 (0.041)	0.294 (0.035)	-0.123 (0.054)	0.024
Study field: engineering (binary)	0.431 (0.041)	0.524 (0.038)	0.093 (0.056)	0.101
Urbanity of residential area before entering university (1: city, ..., 7: village)	3.569 (0.136)	3.765 (0.129)	0.195 (0.188)	0.300
Study program without tuition fees (binary)	0.618 (0.041)	0.635 (0.037)	0.017 (0.055)	0.754
Study year (1or 2)	2.375 (0.043)	2.429 (0.040)	0.054 (0.058)	0.353

Note: The reference category for “self-assessed family wealth” is “basic”; the reference category for “university id” is “4”; the reference category for “study field” is “natural sciences”. P -values are based on t -tests which allow for unequal variances across treatment groups.

Table 3. Mean covariate values by treatment status (Lviv)

Variable	$T = 0$	$T = 1$	Diff	p -value
Gender: male (binary)	0.554 (0.030)	0.578 (0.029)	0.024 (0.042)	0.577
Birth year	1995.079 (0.051)	1995.097 (0.052)	0.018 (0.073)	0.802
Family consists of both parents (binary)	0.880 (0.020)	0.855 (0.021)	-0.025 (0.029)	0.376
At least one parent working (binary)	0.959 (0.012)	0.962 (0.011)	0.003 (0.017)	0.850
Both parents have at most intermediate education (binary)	0.371 (0.030)	0.298 (0.027)	-0.073 (0.040)	0.068
Number of siblings	1.004 (0.056)	1.083 (0.051)	0.079 (0.076)	0.295
Self-assessed family wealth: satisfactory (binary)	0.341 (0.029)	0.332 (0.028)	-0.009 (0.040)	0.830
Self-assessed family wealth: good (binary)	0.517 (0.031)	0.522 (0.029)	0.006 (0.042)	0.894
Self-assessed family wealth: very good (binary)	0.064 (0.015)	0.069 (0.015)	0.006 (0.021)	0.794
Main reason for studying: good education (binary)	0.371 (0.030)	0.315 (0.027)	-0.056 (0.040)	0.166
Main reason for studying: to find a good job (binary)	0.461 (0.031)	0.522 (0.029)	0.062 (0.042)	0.146
Main reason for studying: to obtain a diploma (binary)	0.105 (0.019)	0.097 (0.017)	-0.008 (0.026)	0.756
University id: 1 (binary)	0.367 (0.030)	0.329 (0.028)	-0.038 (0.040)	0.344
University id: 2 (binary)	0.075 (0.016)	0.097 (0.017)	0.022 (0.024)	0.355
University id: 3 (binary)	0.056 (0.014)	0.087 (0.017)	0.030 (0.022)	0.164
Study field: humanities (binary)	0.135 (0.021)	0.125 (0.019)	-0.010 (0.029)	0.720
Study field: social sciences (binary)	0.367 (0.030)	0.349 (0.028)	-0.018 (0.041)	0.667
Study field: engineering (binary)	0.412 (0.030)	0.419 (0.029)	0.007 (0.042)	0.873
Urbanity of residential area before entering university (1: city,...,7: village)	4.528 (0.119)	4.426 (0.117)	-0.102 (0.167)	0.539
Study program without tuition fees (binary)	0.757 (0.026)	0.668 (0.028)	-0.089 (0.038)	0.021
Study year (1or 2)	1.547 (0.031)	1.509 (0.029)	-0.038 (0.042)	0.369

Note: The reference category for "self-assessed family wealth" is "basic"; the reference category for "university id" is "4"; the reference category for "study field" is "natural sciences". P -values are based on t -tests which allow for unequal variances across treatment groups.

Table 4. **What is corruption to you?**

Approach	Definition
Negative approach	Evil A crime
Pragmatic approach	A necessity A way of solving problems
Positive approach	A way of getting income Compensation for low wages
Neutral approach	Temporary situation Part of life
"Russian/Ukrainian" approach	Tradition National peculiarity

reality, and the omission of interactions between the treatment and the characteristics.⁴ For this reason, we also considered the so-called inverse probability tilting (IPT) method as proposed by Graham et al (2012).⁵ This semi-parametric method reweights observations by the inverse of the treatment propensity score (the conditional probability to receive the treatment given the observed characteristics) before taking mean differences, and does not restrict the outcome model to be linear. An attractive feature of IPT (compared to alternative propensity score weighting approaches) is that it exactly balances the means (or even further moments) of the covariates of interest in such a way that the covariate means are identical in the treated and control groups.

Tables 5a and 5b demonstrate the results for the total sample. The second column shows the various mean outcomes among controls, while the third shows the mean differences between treated and control groups. The fourth and fifth columns contain the heteroscedasticity robust standard errors and p-values. The OLS and IPT estimates can be found in columns 6–8 and 9–11, respectively.

The outcomes of interest we evaluated were the effect of the anti-corruption folders against the corruption-irrelevant folders on the willingness of students to participate in an anti-corruption campaign by distributing flyers to other students on campus (binary indicator). For a positive response to the proposition (willingness=1), students left their mobile numbers and/or e-mail addresses so that they might be contacted again. Moreover, we looked at the impact of folders on

⁴ For instance, if the true probability model is actually nonlinear, incorrectly imposing the linearity assumption in OLS regression may entail predictions that lie outside the theoretically possible probabilities between 0 (or 0%) and 1 (or 100%).

⁵ To this end, we use the stata command "ipTATE" provided by the authors.

student assessments of corruption in general. Students were asked to define “corruption” by choosing “in the first place” and “in the second place” (Table 4).

Each option may be represented by a dummy variable, with all of the dummy variables adding up to 1 if any of the possible definitions were picked (only answers highlighted as “in the first place” were considered). By the way the question was asked, the treatment’s short run impact on the *relative* importance of the various options might be assessed, rather than the *absolute* (i. e. cardinal) change in importance. 48 observations in Khabarovsk (13.7%) and 9 observations in Lviv (1.5%) did not pick any option, resulting in their dummy variables remaining at zero.

All of these methods—mean difference, OLS and IPT—suggest that the willingness to participate in anti-corruption activities (“would participate in a campaign”) is significantly affected by the intervention in the total sample in Khabarovsk (the increase is by around 9 points), while none of the methods suggests a willingness to participate in Lviv.⁶

The intervention did not have any significant effects on definitions of corruption in either city, however, nor did it have an effect on the “negative” (corruption is “evil” and “a crime”), “positive” (corruption is “a way of getting income” and “compensation for low wages”), and “pragmatic” (corruption is “a necessity” and “an everyday occurrence”) approaches. The intervention increased the view that corruption is a “part of the system” in both societies: “corruption is a tradition” increased by 2 points in Khabarovsk and by 4 points in Lviv. Moreover, students in Lviv see corruption as “a part of life” (increase by 2 points) and do not consider corruption as a “temporary phenomenon” (decrease by 2–3 points).

Our data show significant differences between both cities in terms of the willingness to participate in the campaign (“would participate in campaign”)—where Russian students show more enthusiasm—and in terms of the definition of corruption (“corruption is a crime”, “corruption is a means to solve problems”), both of which are more present among students in Khabarovsk. This might be explained by a range of factors, including differences in the socio-economic composition of the students as well as the timing: the study was conducted during a difficult time for Ukraine, as the country faced political and economic challenges, and the respondents seemed to be worn out from political and social activism. While unsuccessful European integration and the war in Donbass were on the agenda in Ukrainian mass media, one of the main topics in Russian media was the fight against corruption: several high-ranking officials were accused of extortion and bribes, including several cases in the Russian Far East, including

⁶ We should acknowledge that the treatment is rather small in scale, and that we cover only short-term effects in our study. More research is needed on this topic.

Table 5. **Effects in the total sample**

	Control mean	Mean difference			OLS			IPT		
		Effect	se	p-value	Effect	se	p-value	Effect	se	p-value
a. KHABAROVSK										
Would participate in campaign	0.14	0.09	0.04	0.03	0.09	0.04	0.03	0.09	0.04	0.02
Corruption is										
...evil	0.12	-0.05	0.03	0.12	-0.05	0.03	0.15	-0.05	0.03	0.11
...a crime	0.48	0.04	0.05	0.47	0.04	0.06	0.48	0.02	0.05	0.65
...a necessity	0.02	-0.02	0.02	0.56	-0.02	0.02	0.23	-0.01	0.01	0.29
...a means to solve problems	0.07	0.03	0.03	0.87	0.03	0.03	0.38	0.03	0.03	0.32
...a means of income	0.06	0.03	0.03	0.42	0.03	0.03	0.37	0.03	0.03	0.30
...a compensation for low salaries	0.02	0.00	0.01	0.84	0.00	0.02	0.91	0.00	0.02	0.76
...a part of life	0.03	0.02	0.02	0.97	0.02	0.02	0.40	0.01	0.02	0.41
...a temporary phenomenon	0.01	0.00	0.00	0.91	0.00	0.00	0.98	0.00	0.00	1.00
...a tradition	0.00	0.02	0.00	0.08	0.02	0.00	0.09	0.02	0.00	0.06
...a national particularity	0.04	-0.01	0.02	0.57	-0.01	0.20	0.60	-0.01	0.02	0.60
Observations	192	350			314			314		
b. LVIV										
Would participate in campaign	0.09	0.00	0.02	0.93	0.01	0.02	0.63	0.01	0.02	0.61
Corruption is										
...evil	0.10	-0.01	0.02	0.69	0.01	0.03	0.84	0.00	0.03	0.95
...a crime	0.42	0.04	0.04	0.38	0.03	0.04	0.48	0.04	0.04	0.39
...a necessity	0.02	0.00	0.01	0.87	0.00	0.01	0.81	0.00	0.01	0.71
...a means to solve problems	0.18	-0.01	0.03	0.65	-0.02	0.03	0.51	-0.02	0.03	0.51
...a means of income	0.10	-0.02	0.02	0.51	-0.03	0.02	0.31	-0.03	0.02	0.29
...a compensation for low salaries	0.05	-0.01	0.02	0.65	-0.01	0.02	0.58	-0.01	0.02	0.51
...a part of life	0.01	0.02	0.01	0.07	0.02	0.01	0.02	0.02	0.01	0.02
...a temporary phenomenon	0.04	-0.02	0.01	0.08	-0.03	0.01	0.01	-0.03	0.01	0.01
...a tradition	0.01	0.04	0.01	0.01	0.04	0.01	0.00	0.04	0.01	0.00
...a national particularity	0.05	-0.01	0.02	0.64	-0.01	0.02	0.55	-0.01	0.02	0.61
Observations	285	600			556			556		

Note: Standard errors (se) and p-values (p-value) are based on asymptotic approximations

Table 6. **Effects among female students**

	Control mean	Mean difference			OLS			IPT		
		Effect	se	p-value	Effect	se	p-value	Effect	se	p-value
a. LVIV										
Would participate in campaign	0.12	-0.02	0.04	0.69	0.02	0.04	0.58	0.02	0.04	0.54
Corruption is										
...evil	0.13	-0.03	0.04	0.43	-0.03	0.04	0.53	-0.03	0.04	0.46
...a crime	0.46	0.01	0.06	0.92	-0.02	0.07	0.81	0.00	0.06	0.94
...a necessity	0.02	0.00	0.02	0.93	-0.01	0.02	0.74	-0.01	0.02	0.54
...a means to solve problems	0.12	0.02	0.04	0.61	0.03	0.05	0.57	0.02	0.05	0.63
...a means of income	0.10	0.02	0.04	0.68	0.00	0.04	0.94	0.00	0.04	0.96
...a compensation for low salaries	0.04	-0.03	0.02	0.22	-0.01	0.02	0.51	-0.02	0.02	0.38
...a part of life	0.01	0.01	0.01	0.60	0.01	0.02	0.40	0.02	0.01	0.29
...a temporary phenomenon	0.02	-0.01	0.01	0.53	-0.02	0.02	0.30	-0.02	0.01	0.30
...a tradition	0.02	0.06	0.03	0.02	0.08	0.03	0.01	0.07	0.03	0.01
...a national particularity	0.07	-0.03	0.03	0.33	-0.04	0.03	0.20	-0.03	0.03	0.19
Observations	122	253			241			241		
b. KHABAROVSK										
Would participate in campaign	0.13	0.12	0.05	0.13	0.12	0.05	0.04	0.11	0.05	0.03
Corruption is										
corruption is ...evil	0.15	-0.53	0.05	0.21	-0.53	0.05	0.30	-0.07	0.05	0.11
...a crime	0.42	0.01	0.07	0.58	0.01	0.07	0.91	0.01	0.07	0.91
...a necessity	0.05	-0.04	0.02	0.15	-0.04	0.02	0.05	-0.04	0.02	0.03
...a means to solve problems	0.08	0.04	0.04	0.66	0.04	0.04	0.30	0.04	0.04	0.27
...a means of income	0.07	0.08	0.04	0.24	0.08	0.04	0.07	0.08	0.04	0.03
...a compensation for low salaries	0.03	-0.01	0.02	0.54	-0.01	0.02	0.70	-0.01	0.03	0.76
...a part of life	0.05	-0.01	0.03	0.33	-0.01	0.03	0.73	-0.02	0.03	0.54
...a temporary phenomenon	0.00	0.01	0.01	0.32	0.01	0.01	0.34	0.01	0.01	0.31
...a tradition	0.00	0.01	0.01	0.32	0.01	0.01	0.40	0.01	0.01	0.30
...a national particularity	0.05	-0.02	0.03	0.57	-0.02	0.03	0.44	-0.01	0.03	0.75
Observations	98	190			173			173		

Note: Standard errors (*se*) and *p*-values (*p*-value) are based on asymptotic approximations

Table 7. **Effects among male students**

	Control mean	Mean difference			OLS			IPT		
		Effect	se	p-value	Effect	se	p-value	Effect	se	p-value
a. LVIV										
Would participate in campaign	0.07	0.01	0.03	0.73	0.02	0.03	0.42	0.02	0.03	0.44
Corruption is										
...evil	0.09	0.01	0.03	0.81	0.02	0.03	0.57	0.02	0.03	0.57
...a crime	0.46	0.06	0.05	0.28	0.06	0.05	0.27	0.07	0.05	0.21
...a necessity	0.01	0.00	0.01	0.90	0.00	0.01	0.96	0.00	0.01	0.95
...a means to solve problems	0.18	-0.04	0.04	0.33	-0.05	0.04	0.26	-0.05	0.04	0.22
...a means of income	0.06	-0.04	0.03	0.19	-0.03	0.03	0.34	-0.03	0.03	0.29
...a compensation for low salaries	0.06	0.00	0.03	0.86	0.00	0.03	0.90	0.00	0.03	0.94
...a part of life	0.03	0.03	0.01	0.07	0.03	0.01	0.03	0.03	0.01	0.02
...a temporary phenomenon	0.02	-0.03	0.02	0.09	-0.05	0.02	0.02	-0.05	0.02	0.02
...a tradition	0.03	0.02	0.01	0.12	0.02	0.01	0.19	0.02	0.01	0.20
...a national particularity	0.05	0.01	0.02	0.79	0.00	0.02	0.99	0.00	0.02	0.96
Observations	184	347			315			315		
b. KHABAROVSK										
Would participate in campaign	0.15	0.06	0.06	0.11	0.06	0.06	0.36	0.03	0.50	0.54
Corruption is										
...evil	0.08	-0.04	0.04	0.36	-0.04	0.04	0.30	-0.02	0.03	0.40
...a crime	0.56	0.11	0.08	0.65	0.11	0.08	0.24	0.05	0.07	0.47
...a necessity	0.00	0.02	0.02	0.16	0.02	0.02	0.19	0.02	0.02	0.15
...a means to solve problems	0.07	-0.01	0.04	0.78	-0.01	0.04	0.83	-0.01	0.03	0.75
...a means of income	0.05	-0.02	0.04	0.80	-0.02	0.04	0.47	-0.02	0.03	0.46
...a compensation for low salaries	0.00	0.03	0.01	0.32	0.03	0.01	0.30	0.05	0.03	0.03
...a part of life	0.01	0.05	0.03	0.22	0.05	0.03	0.14	0.04	0.03	0.11
...a temporary phenomenon	0.01	-0.01	0.01	0.32	-0.01	0.01	0.36	-0.01	0.01	0.32
...a tradition	0.00	0.03	0.02	0.16	0.03	0.02	0.20	0.03	0.02	0.12
...a national particularity	0.03	0.01	0.03	0.86	0.01	0.03	0.81	0.01	0.02	0.67
Observations	94	160			141			141		

Note: Standard errors (*se*) and *p*-values (*p*-value) are based on asymptotic approximations

Alexander Choroshavin⁷, the governor of Sakhalin, and Viktor Chudov⁸, the head of the regional parliament in Khabarovsk. This might have made an impact on the respondents in Khabarovsk: the results of combating corruption were visible. Students in Lviv, on the contrary, might be disappointed from the recent and ongoing reforms aiming to combat corruption in the country (see, for example, discussions in [Grødeland, 2010; The Economist, 2015]) and could be rather skeptical about a small anti-corruption campaign organized at the university by distributing flyers. Moreover, we simply asked our respondents about their willingness to participate in the campaign; we did not actually organize and run it. Students in Khabarovsk might demonstrate more willingness to participate just by saying it and not by following through (social desirability).

Inspired by the findings of gender-specific aspects of corruption (see, for example, [Chaudhuri, 2012])—specifically “good girl, bad boy” [Jetter, Walker, 2015]—we decided to look at this parameter as well (Table 6a and 6b and Table 7a and 7b). Indeed, some control means differ importantly across genders: “corruption is evil”, “corruption is a crime” and corruption is “a necessity” in Khabarovsk as well as “would participate in a campaign” and “corruption is a means for solving problems” in Lviv. Moreover, in Khabarovsk the intervention has a considerably larger effect on willingness to participate in a campaign among females than among males, while no important gender differences in the effect on potential participation are found in Lviv. Furthermore, females in Khabarovsk receiving the intervention less often state that corruption is a “necessity” and more often consider it as a “source of income”, while no such effects are found for males. In Lviv, the treatment induces males to more often consider corruption as a “part of life” and less often as a “temporary phenomenon”, while females more frequently see it as a “tradition”.

In addition to the quantitative part, our survey included one open question: we asked students about their personal experiences with bribery in their university studies. Our data represent not only the presence and the frequency of this issue, but also the reasons behind it. While the respondents in Khabarovsk were sparing in their explanations, just saying “for an exam” (*za eksamen*), “for a better mark” (*za luchshuiu ocenku*) or “due to pressure from a faculty member (*na sessii prepodavatel' vymogal vsiatku*), students in Lviv helped to create a detailed picture. The reasons for bribing might be clustered as follows: 1) missing classes—which are obligatory at Ukrainian and Russian universities (“there were many missed classes”—*bulo bagato enok*); 2) “unnecessary” subjects like sports (“for sport”—*za fizkul'turu*); 3) merely pursuing a formal degree without regard for how

⁷ <http://www.sakhalin.info/horoshavin/100693>

⁸ <http://www.newsru.com/russia/10jun2015/chudoff.html>

Table 8. How often do you use the following practices?

Areas	Actions	Not never responses*	
		Khabarovsk (n=350)	Lviv (n=600)
Taking exams	Using a cheat sheet during exams	92.2	94.5
	Copying somebody's work during examinations or tests	90.8	95.1
Writing papers	Downloading a course paper (or other written work) from the Internet	57.9	64.2
	Buying a course paper (or other written work) from special companies or classmates	32.2	40.4
	Writing a paper on one's own, but copying and pasting some chapters from the Internet	92.8	92.8
Communicating with the professor	Deceiving a professor while explaining problems associated with studies	42.5	68.2
	Asking a professor for an individual approach	26.1	37.5

* "Not "never responses" is the sum of "seldom", "sometimes", "often" and "systematically."

it is obtained ("do not want to study, but need a degree"—*ne kho-chu vchitis, a diplom treba*’); 4) willingness to get a state scholarship ("needed a few points to get a scholarship"—*treba bulo do stipendii paru baliv*); or 5) no time for studying ("was not ready for an exam"—*ne buv gotovii do eksamenu*). According to our data, students appear to be the main initiators of bribes. Lecturers might initiate a bribe, but this is rare. In both cities, bribes were initiated either by hinting ("direct and indirect hint made by a lecturer"— UKR: *priamii ta nepriamii natiak vikladacha*) or by force ("paid for subject by compulsion of a lecturer"— RU: *proplachival predmet po prinuzhdeniiu prepodavatelja*, "a lecturer demanded a bribe"— UKR: *vimagav chabaria vikladach*).

While monetary corruption is more evident and easy to determine, non-monetary corruption is more widespread. Table 8 illustrates the frequency of academic dishonesty among students in both cities. NB: this is not seen as a comparative analysis.

Our experiments show that the effectiveness of anti-corruption educational campaigns is unclear. Moreover, such campaigns might even "promote" corruption. The latter was more evident in Lviv: stu-

4. Conclusion

dents who were not previously engaged in monetary corruption in their dealings with the faculty learned about the pervasiveness of corrupt behavior through the anti-corruption folder and their acceptance of corruption increased significantly⁹. However, students who were previously engaged in monetary corruption in their dealings with the faculty were more ready to participate in anti-corruption campaigns. The intervention influenced students who stated that they purchase term papers (or other papers) from special agencies or written by other students: the number of students who believed that “corruption is a crime” and “corruption is evil” increased, while the number who believed that “corruption is a means to solve problems” decreased. Students without such experiences were more likely to believe that “corruption is a means to solve problems” than “corruption is evil” after the intervention (see more in Denisova-Schmidt, Huber, and Prytula, 2015). Anti-corruption campaigns were more effective in Khabarovsk. Interestingly, students in Russia show an ambivalent attitude towards corruption: in comparison to students in Lviv, they more often define corruption as “a crime”, but at the same time as “a means to solve problems”. The study outcomes show slight gender differences: women in Lviv are more willing than men to fight corruption, while women in Khabarovsk have a more negative attitude towards corruption.

The results of our study might be interesting not only for scholars, but also for policy makers in Russia and Ukraine and for such organizations as Transparency International. In our experiments, we used only printed materials. The younger generation we investigated is growing up in different circumstances, however, in which digital media play an important role. Would the results be different if we used only computer-based materials, such as short videos, PowerPoint presentations, or postings in social media accounts? This needs to be investigated further.

All of the involved actors should not only invest in anti-corruption education, but also tackle the systematic problems that have caused endemic corruption at universities, such as the number of obligatory classes students need to take (“unnecessary” classes), and respond to the current challenge that many other academic systems are faced with—the massification of higher education. In both countries, this has reached a crucial number: 80% of the 18–21 age cohorts now enroll in tertiary education. Not all of them are ready to study at such a high level and universities are increasingly dealing with “un-teachable” students (Denisova-Schmidt and Leontyeva, 2015) who are looking for formal degrees rather than education. It is difficult to blame young people for this; they do not have other alternatives because the system of vocational training is insufficient and almost destroyed.

⁹ Similar results were found in Costa Rica [Gingerich, Oliveros, Corbacho, Ruiz-Vega, 2015].

Interestingly, the new Ukrainian law on higher education addresses the question of “unnecessary” classes and frees universities from obligating students to participate in such disciplines as sports or politics. Universities have not rushed to implement this point, however. In this case, these subjects would be offered on an elective basis, with the students deciding whether or not to study them. Both the lecturers and the students do not seem to be ready for this change.

This problem is not limited to Russia and Ukraine anymore; corruption can be “exported”. In 2009, a large number of students from the University of St. Gallen in Switzerland took an exchange semester at a few Russian and Ukrainian universities. When they came back with their results, the department responsible for accepting their work was very surprised to learn that all of the students received a high number of credits (in some cases up to 60 or 80 credits for one semester), and all of them received only excellent marks. The class descriptions of the seminars they attended in Russia and Ukraine were almost identical to the class descriptions of the courses at the University of St. Gallen. This department became very suspicious and decided not to accept the results of this exchange, placing those Russian and Ukrainian universities on a black list. Students at the University of St. Gallen may still go to those universities, but their credits will be not accepted.

This might not be helpful for Russia, with its current ambitious plans for establishing world-class universities, or for Ukraine, currently recovering after its second Revolution, which was instigated by corruption, among other factors.

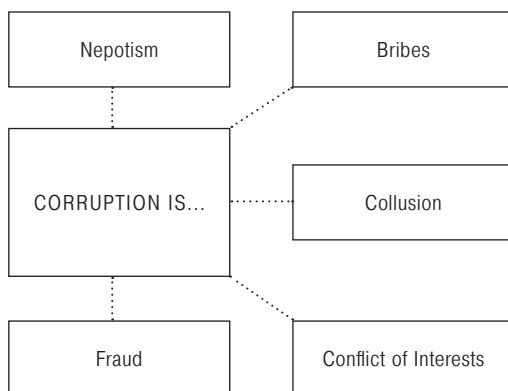
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Picture 1. **Some forms of corruption: bribery, collusion, conflict of interest, fraud and nepotism.**



Source: Graphic by the authors based on *Transparency International: "Corruption: A Beginner's Guide,"* December 2012: <http://www.transparency.org.uk/our-work/publications/10-publications/454-corruption-a-beginners-guide-what-is-corruption>. (accessed on August 15, 2015)

Appendix: Folder 1 was a color-printed booklet. It was made using materials developed by Transparency International¹⁰ and included the following information:
 Folder 1 (treatment group)

- the position of Russia and Ukraine in the Corruption Perception Index. In its 2014 index of 175 countries, Transparency International ranked Russia in 136th place and Ukraine in 142nd place;¹¹
- the definition of corruption as the abuse of entrusted power for collective and private gain in monetary and non-monetary forms;¹²
- some forms of corruption, such as bribery, collusion, conflict of interest, fraud and nepotism (see picture 1), plus some areas of corruption, like politics, the courts, business, the healthcare system, police, and education (Corruption in the UK: Overview and Policy Recommendations, 2011; Corruption: A Beginner's Guide, 2012);
- examples of corruption in higher education both without student involvement (manipulation of finances, university properties, accreditation) and with student involvement (copying, plagiarism, cheating the faculty, bribes for grades and other preferential treatment) and their negative consequences (Global Corruption Report: Education, 2013).

The folder ends with the call for participation in anti-corruption campaigns organized in Khabarovsk or Lviv, respectively.

¹⁰ See the campaign "Unmask the corrupt": http://www.transparency.org/unmask_the_corrupt/en/ (accessed on August 15, 2015)

¹¹ <http://www.transparency.org/cpi2014/results> (accessed on August 15, 2015)

¹² <http://www.transparency.org.ru/dokumenty/missiia> (accessed on August 15, 2015)

Plagiarism and Cheating in Russian Universities:

The Role of the Learning Environment and Personal Characteristics of Students

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Abstract. This study aims to find out how plagiarism and cheating as dishonest practices correlate with the personal characteristics of students (e. g. their involvement in learning and research activities) and the specific features of the learning environment. A survey of university students and professors that was conducted as part of the 2014 Monitoring of Education Markets and Organizations provided the empirical basis for research. The impact of factors was assessed using two binary logistic regressions, with response variables describing experiences of cheating and plagiarism. We show that these types of

academic misconduct are not affected by whether the university applies formal or informal plagiarism-checking techniques. Professor intolerance to cheating and willingness to apply strict penalties appears to play a more important role in preventing academic dishonesty. The probability of using dishonest practices is also decreased by such factors as intensive preparation for classes, confidence in working in one's field of study in the future, and prioritizing the quality of education instead of its accessibility when choosing a university and major.

Keywords: higher education, academic dishonesty, plagiarism, cheating, learning environment, education quality, motivation for learning.

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Academic dishonesty, particularly plagiarism and cheating, pose a major problem for the national higher education system. According to the Monitoring of Student Characteristics and Trajectories survey, which was conducted in eight Russian universities in 2013, on average 35% of written papers are downloaded from the Internet, with the rate peaking at 52% in one university. Students seem to be largely tolerant to cheating and plagiarism: only 12% of respondents agree that cheating should be punished with low grades, while nearly half believe a severe reprimand is enough. As little as 2% of students consider reporting plagiarism to the Dean a just punishment [Monitoring of Student

Characteristics and Trajectories, 2014]. The high incidence of academic misconduct and tolerance towards it among students have a number of negative effects for the higher education system as a whole, as well as the personal learning experience of students [Shmeleva, 2015].

Despite the growing interest of Russian researchers in dishonest learning behaviors among university students [Radayev, Chirikov, 2006; Latova, Latov, 2007; Golunov, 2010; Shmeleva, 2015], we did not find any Russian studies that shed light on the reasons for its high incidence. An exception is a work by Yelizaveta Sivak based on a survey of 349 students of one university [Sivak, 2006]. Knowing what motivates students to be academically dishonest and what they need to do to honestly comply with curriculum requirements is extremely important in adjusting education policies so as to eradicate academic misconduct. However, education policies can only be efficient when plagiarism and cheating are in a strong correlation with the existing learning environment.

This study aims to identify the main determinants of plagiarism and cheating in order to understand the roles played by the learning environment and individual student characteristics in solving the ethical dilemma of whether to resort to dishonest practices. The empirical basis of research includes data on 99 universities collected during the 2014 Monitoring of Education Markets and Organizations survey.

1. Research Hypotheses

Determinants of academic dishonesty have traditionally been divided into individual determinants, which are related to the personal characteristics of students, and contextual determinants, which reflect the specific features of the learning environment.

Originally, researchers of academic misconduct mostly focused on the first type of factors. Today, however, the most popular approaches integrate both types of determinants in theoretic models. For example, this strategy is supported by researchers who stick to Ajzen's theory of planned behavior and those who interpret academic dishonesty as the result of rationally calculating costs and benefits, adjusting Becker's conception to academic dishonesty research [Shmeleva, 2015].

The latter approach makes it possible to regard the various personal characteristics of students and specific features of the learning environment as parameters that can increase or decrease the costs of dishonest behavior. This echoes more the unique data of the Monitoring of Education Markets and Organizations survey, which contain no information about student attitudes towards academic dishonesty, whereas the planned behavior theory relies heavily upon that.

Studies that borrow logic from the economic approach reveal that the use of dishonest practices is reduced greatly if expected benefits decrease, the probability of reporting increases, or the penalties for revealed cases of dishonesty become more severe (e. g. [McCabe, Trevino 1997; McCabe, Butterfield, Trevino 2006]).

Using the results of mostly foreign studies and the overview from Shmeleva [2015], we identified a number of individual characteristics of students that may increase the expected benefits from academic misconduct and thus increase the probability of its occurring. **1.1. Individual factors**

Low level of engagement in learning. Assessing the effects of academic performance on the probability of using dishonest practices in learning is one of the traditional methods in this field, however the results obtained by different researchers are quite controversial. The reason for this may be a disregard for the motives behind academic misconduct: while low-performing students may resort to cheating to compensate for gaps in their knowledge, their high-performing peers might do it in order to maintain the level achieved [Kuntz, Butler, 2014]. **H1**

We assume that the factor of engagement in learning (with performance as one of its possible indicators) is a better predictor of academic misconduct. We also suggest that the intensiveness of preparing for most classes, which shows attitude towards learning better than performance as such, largely affects the process of deciding whether to use dishonest practices. So, the hypothesis is formulated as follows: the greater the intensity with which students prepare for classes and the better the performance and attendance they show, the less likely they will resort to plagiarism or cheating.

Low level of engagement in research. We hypothesize that engagement in research may predict academic dishonesty in a university. Indeed, once students become part of the academic community, they start sharing its values and ethical norms, which can possibly keep them from using dishonest practices in the learning process. **H2**

No further education plans. Students planning to continue their education—to make long-term investments in their human capital—are more interested in accumulating that human capital to get a fair payoff afterwards. Academic dishonesty, however, inhibits the accumulation of human capital, being a means of avoiding the activities required to improve knowledge, skills, and competencies. **H3**

We assume that students who are going to obtain a research degree in Russia or abroad someday will be less likely use dishonest practices that decrease the effectiveness of investments in human capital.

No confidence in working in one's field of study in the future. Here we assume that students who have no confidence that they will ever work in their field of study are most likely unsatisfied with the field of study they have chosen or with the quality of teaching. In this case, students will likely want to minimize their learning efforts by engaging in dishonest practices. **H4**

1.2. Contextual factors The data obtained by the Monitoring of Education Markets and Organizations survey allows us to not only measure the influence of individual student characteristics on the probability of using dishonest learning practices, but also to test some hypotheses on the importance of contextual factors, such as professor behavior or peer academic misconduct.

Faculty plays a crucial part in shaping a learning environment, whether favorable for academic dishonesty or not, by setting the “rules of the game” and the required degree of compliance.

For instance, the attitude of professors toward academic dishonesty—i. e. whether they prefer mild or more severe forms of punishment—develops student ideas of appropriate and inappropriate learning practices. A student who perceives the threat of potential penalties to be moderate will find it easier to cheat due to the low associated costs, which has been proven empirically [McCabe, Trevino, 1997; McCabe, Butterfield, Trevino, 2006].

Professors engaged in research activities will probably react more negatively to academic misconduct as a violation of academic ethics, which means that they will be less tolerant of cheating.

H5 *The higher the proportion of professors demonstrating intolerance to plagiarism and cheating, the lower the incidence of these practices among students.*

It is not only the perceived threat of penalties that matters in assessing the costs of academic dishonesty; the estimated odds of getting caught are also taken into account. For example, if a professor warns students that their written papers will be checked for plagiarism but they never really are (which students may reveal through discussing their coursework assignment techniques), students may decide that complying to the rules is useless and excessively painstaking [McCabe, Trevino, Butterfield, 2001]. Additionally, students witnessing the unpunished academic misconduct of their peers may lose some of their motivation for learning and start regarding dishonest behavior as an efficient means of overcoming challenges in education.

Therefore, we assume that the resolution of the ethical dilemma of whether to use dishonest practices is affected by the perceived odds of being caught, which are higher in universities addressing academic dishonesty, for example by checking student papers for plagiarism.

H6 *Students in universities addressing academic dishonesty cheat less often than students in universities with no such practice.*

It is not only faculty and administrators who shape a learning environment. Students also contribute by maintaining a system of informal norms that regulate their learning behavior. Such norms, in particular, may legitimize academic dishonesty as a means of achieving educa-

tion goals. Donald L. McCabe, one of the most well known experts in academic dishonesty, has often found peer behavior to be the most powerful factor of academic integrity or dishonesty [McCabe, Butterfield, Trevino, 2006]. Accordingly, a student who thinks that plagiarism and cheating are widespread among their peers is more likely to engage in academic misconduct than a student perceiving the level of integrity in the learning environment as high. Foreign researchers often refer to this mechanism of getting involved in dishonest behavior by developing a tolerant attitude to it as the coordination effect.

However, students often overestimate the frequency of using dishonest practices by their peers, while professor estimates are usually lower and more accurate [Hard, Conway, Moran 2006]. Therefore, we will use the faculty's opinion on the incidence of plagiarism and cheating among students in assessing the coordination effect.

The higher the incidence of academic dishonesty as assessed by professors (in other words, the higher the proportion of cheaters), the higher the probability of using dishonest practices by students. H7

The research was based on the 2014/2015 Monitoring of Education Markets and Organizations data collected from 99 higher education institutions of various types in all federal districts. The sample included 2,978 full-time Specialist and Bachelor students and 1,507 professors surveyed by the Monitoring.

The data obtained by the Monitoring was used to build and assess two binary-response logistic regression models for each of the dishonest practices of plagiarism and cheating. In this study, plagiarism is understood as the wrongful appropriation of another author's language or ideas in one's own original work, and cheating is understood as obtaining any kind of assistance in tests and examinations without due acknowledgement.

Predictors included three groups of variables. The first one covered variables associated with individual student characteristics obtained in student surveys. Contextual factors based on faculty surveys and added to the student database formed the second group. The third group consisted of control variables that included both the personal characteristics of students (sex, major, form of financing, family capital, employment status), and contextual factors describing the institutional features of universities (type of university, type of ownership, location, and main or satellite campus).

We used two dependent variables: "Experience of plagiarism" and "Experience of cheating".

Experience of plagiarism. This variable was obtained by uniting three indicators that show whether a student has ever: 1) used frag-

2. Empirical basis of research

3. Measuring the main variables

3.1. Dependent variables

ments of someone else's articles or books without any reference; 2) submitted works rewording another author's ideas without any reference; or, 3) bought pre-written papers. Twenty-nine percent of students in the sample have used at least one of these plagiarism methods.

Experience of cheating. This variable was obtained by uniting three indicators that show whether a student has ever: 1) copied from other students in tests or examinations; 2) used cheat sheets in examinations; 3) used notes or materials stored on their mobile phone in examinations. The same proportion of respondents (29%) reported to have had some cheating background.

3.2. Measuring individual student characteristics

Engagement in learning. The regression model used three indicators of engagement in learning: last year's performance, the intensiveness of preparing for classes (based on the answers to the question of which materials students usually use to prepare for classes), and attendance.

Engagement in research. Two indicators of engagement in research activities were used for analysis: research activity (in current and previous academic years) and research productivity (conference background, participation in research paper competitions, publications).

Education and career plans. In accordance with the suggested hypotheses, the predictors include the intention of students to: (a) get another Bachelor's or Specialist degree; (b) complete a Master's degree in Russia; (c) complete a PhD in Russia; or, (d) study abroad.

We also constructed a variable of "confidence in working in one's field of study in the future", based on the question: "Do you think that you will work in your current field of study?" A value of "1" was assigned to respondents choosing the answer "Yes, I am pretty sure that I will."

A variable describing student commitment to education quality was developed in a two-step cluster analysis of answers on the reasons behind choosing a specific university and major. Two clusters of students were identified, depending on whether they made their choice being guided mostly by education quality (cluster 1) or accessibility (cluster 2) (Table 1).

3.3. Constructing learning environment indicators

Learning-environment indicators were constructed based on a faculty survey. The following variables were developed for each of them.

Engagement in research. The indicators used in this study include the overall number of research activities and research productivity (number of publications of various types and number of conference or seminar reports).

Assessment of the incidence of academic dishonesty. The Monitoring of Education Markets and Organizations survey asked professors a series of questions about the incidence of various dishonest practices among students of the university they teach in. Two index-

Table 1. Proportion of students selecting a specific university and criterion for major choice in clusters (%), corresponding to cluster centers

Reason for choosing university (department, major)	Cluster 1	Cluster 2	Total sample percentage
It is the only option available where I live	6.2	93.8	1.1
It is close to my home	26.3	73.7	11.1
Easy to get admitted	3.6	96.4	10.1
My relatives, acquaintances, or their children studied (study) there	13.7	86.3	14.5
Highly qualified faculty	78.8	21.2	27.9
Free education / Affordable tuition fees / Good student loan terms	31.7	68.3	13.7
High reputation, prestige	81.1	18.9	29.2
Great resources and technical facilities	84.1	15.9	9.7
Nice student population	83.0	17.0	10.2
Easy to study	13.0	87.0	7.8
A relative or acquaintance of mine works there	28.2	71.8	2.4
I failed to enter another university	0.8	99.2	8.4
To get a high-paying job	91.1	8.9	18.5
Easy to find a job as a graduate	76.5	23.5	10.0
I had an edge in the entrance examination	20.0	80.0	6.2
They provide a great education in my major of preference	72.5	27.5	36.3
I was advised by parents	24.5	75.5	13.8
Observations	1601	1177	2978
Proportion in the sample	53.8	46.2	100

es, one for plagiarism and one for cheating, were created based on those questions.

Professor attitude towards plagiarism and cheating among students. Indicators of plagiarism intolerance included the following answers to the question: “What will you do if you come across blatant plagiarism in a student paper?”

- “I will recommend that this student be expelled.”
- “I will lower the final grade by a certain number of points.”
- “I will give an unsatisfactory mark without having them rewrite the paper.”

A new variable—“intolerance to plagiarism”—was introduced based on this question, with a value of “1” assigned to respondents who chose one of the three options mentioned above.

The same algorithm was used to construct the variable showing professor intolerance to cheating.

Perception of academic dishonesty prevention practices enforced by the university. The Monitoring of Education Markets and Organizations survey asked professors to evaluate the obligatory check of student work (theses, term papers, reports, etc.) for plagiarism in their university. This question served as the basis for three dichotomous variables reflecting the incidence of anti-cheating and anti-plagiarism practices at a university.

Principal component analysis (VARIMAX rotation) was used to create integral variables describing the learning environment in terms of tolerance to academic misconduct on the basis of the variables generated above. As those variables that correlated little with the resulting factors (“intolerance to plagiarism” and “no plagiarism prevention policies”) were removed from the initial model, we received a factor model consisting of four factors that explain over 70% of total dispersion. Factor loadings are specified in Table 2.

Factor 1 reflects professor perception of academic dishonesty prevention practices enforced by the university, which appears from the positive factor loading of variable “Plagiarism-checking policies enforced” and a negative factor loading of variable “No plagiarism-checking policies enforced, but professors perform checks at their own discretion.” Factor loading analysis reveals that Factor 2 correlates with the variables describing the engagement of professors in research. Factor 3 is associated with variables showing subjective assessment of plagiarism and cheating incidence by professors. Factor 4, which may be referred to as “Intolerance to cheating”, correlates positively with the variable of the same name and negatively with the variable “Tolerance to cheating”.

Having aggregated the significant factors, we generated same-name variables (as mean factor values) for each university, which were later added to the student survey database and used as predictors in the two regression models.

4. Plagiarism experience determinants

In the model for the plagiarism experience dependent variable, predictors included the personal characteristics of students, contextual variables (learning environment indicators calculated with factor analysis), and control variables.

The model did not embrace all the dummy variables indicating the major and type of university, but only those whose correlation with the resulting variable had been confirmed by a chi-squared test. Thus, the model included variables describing majors in social sciences, en-

Table 2. **Factor loading matrix after rotation**

Variable	Factor 1	Factor 2	Factor 3	Factor 4
Total number of publications	-0.03	0.786	-0.014	-0.033
Total number of conference and seminar reports	0.041	0.785	-0.081	-0.001
Total number of research activities	0.059	0.682	0.132	0.055
Plagiarism incidence index	0.02	0.009	0.865	0.021
Cheating incidence index	-0.027	0.028	0.869	0.007
Tolerance to cheating	0.005	-0.085	0.086	-0.859
Intolerance to cheating	-0.01	-0.063	0.116	0.851
Plagiarism-checking policies enforced	0.929	0.108	-0.023	-0.016
No plagiarism-checking policies enforced, but professors perform checks at their own discretion	-0.934	0.037	-0.015	0.000
KMO measure of sampling adequacy	0,52			
Bartlett's sphericity test	$\chi^2 = 2597,176$; $df = 36$; $sig < 0,001$			

engineering, culture and arts, as well as economic, humanities, arts, teacher training, agricultural and classical universities.

Binary logistic regression assessment results are provided in Table A1 of the Appendix.

Regression analysis shows that second- and fourth-year students are more likely to commit plagiarism than freshmen. The probability of engaging in this dishonest practice is also higher among students who work part-time.

The existing relationship between plagiarism and majors in social sciences, engineering, culture, and arts had not been discovered when other individual and contextual characteristics were controlled for.

Government-sponsored students are less likely to engage in plagiarism than those who pay from their own pockets. This is probably because state-funded students normally demonstrate better skills and/or performance, since they had higher USE scores in admissions.

Individual control variables included family capital characteristics: single-parent family, mother's higher education, and a student's assessment of his or her family's wellbeing. Only the latter turned out to be significant: children from more advantaged families commit plagiarism less often.

4.1. Individual control characteristics

- 4.2. Control contextual characteristics** Students of economic, humanities, teacher training, and classical universities are much more likely to resort to plagiarism in their works than students of other types of universities (e. g. transportation, engineering, or medical). Meanwhile, studying in an agricultural institution seems to reduce the odds of using dishonest practices.
- A university's size and location, its status (main/satellite campus), and form of ownership do not have any strong effect on the incidence of plagiarism.
- 4.3. Individual characteristics** Engagement in learning. The hypothesis that engagement in learning affects the probability of committing plagiarism has been partially confirmed. Medium and high levels of intensity of preparing for classes greatly reduces the odds of wrongful appropriation, as compared to no preparation at all for most of the classes.
- Students who were guided by education quality when selecting a university are 23% less likely to engage in plagiarism than those interested first and foremost in education accessibility. Attendance and academic performance have no effects on using plagiarism in written papers.
- Engagement in research.* Contrary to what we expected, the regression analysis shows that this aspect of learning experience exerts no significant influence on the plagiarism record.
- Education and career plans.* We assumed that intention to complete a PhD in Russia or to get another degree abroad should reduce the odds of engaging in plagiarism, but the hypothesis was not supported by this study. Meanwhile, intent to earn another Bachelor's or Specialist degree turned out to be a significant predictor of plagiarism: students with such intent tend to commit plagiarism 1.2 times more often than their peers without any further education plans. It may be that those students planning to get another degree are not satisfied with the level of their current education. In this case, they may have developed particular disrespect for academic rules. Additionally, we found out that students who are convinced their future job will be related to their field of study are 20% less likely to use plagiarism in their works, which is consistent with our hypothesis.
- 4.4. Contextual characteristics** Learning-environment indicators. Out of the four learning environment indicators we constructed above as a result of factor analysis, three appear to be significant predictors of plagiarism. The proportion of professors that are intolerant to plagiarism proves to be the most powerful one: its increase by one point reduces the odds of plagiarism by 44%. A slightly lower but strong influence is exerted by the incidence of academic dishonesty as assessed by professors (increases the odds of using dishonest practices by 35%), which confirms the coordination effect hypothesis. The engagement of professors in research also seems to greatly affect student decisions on whether to use plagiarism. Wrongful appropriation is less widespread among stu-

dents of universities where professors show more engagement in research. However, we found the availability of anti-plagiarism policy in a university to be an insignificant predictor of student plagiarism. Apparently, it is not so much official policy—such as obligatory checks for plagiarism—that affects how students perceive the threat of possible penalties, but rather the personal negative attitude of professors to plagiarism.

A similar model was constructed for cheating, with the only distinction in the control variables describing the major and the type of university. This model only used the dummy variables whose correlation with the resulting variable had been confirmed by a chi-squared test. These included the variables associated with majors in life sciences, engineering, healthcare, culture and arts, as well as with humanities, engineering, arts, agricultural, and transportation universities. Regression model results are provided in Table A2 of the Appendix.

5. Cheating experience determinants

Students in the second to fifth years of study are twice as likely to cheat as freshmen. Students in engineering and life sciences also tend to cheat more often. Other individual control characteristics we analyzed seem to have no significant effect on the predisposition to cheating.

5.1. Individual control characteristics

All other parameters held constant, cheating is more widespread in state universities (as compared to private) and on main campuses (as opposed to satellites). Presumably, state universities and main campuses impose higher requirements and quality standards, which make students feel under pressure and prompt them to bypass the rules.

5.2. Contextual control characteristics

Besides this, cheating is three times more popular in humanities universities than in economic, medical, teacher training, or classical institutions. Studying in agricultural and transport universities produces a contrary effect. As with plagiarism, university size and location have no significant influence on the incidence of cheating.

Engagement in learning. All indicators of engagement in learning except academic performance are significant and affect the honesty of student behavior in this model, which is consistent with the hypotheses proposed above. For instance, students who devote more time and effort to preparing for classes are less likely to cheat than those who do not prepare for classes. Attendance rate is also a good predictor of cheating: students attending more than 75% of all classes will be less likely to think of cheating than those attending only half of the classes or less.

5.3. Individual characteristics

Student priorities in choosing a university affect the probability of cheating, too. Students who were interested in education quali-

ty cheat less often than students who paid attention to the accessibility of education first and foremost. However, this effect is not that strong.

Engagement in research. As with plagiarism, the engagement of students in research activities has no correlation with cheating.

Education and career plans. Just as we suggested, students planning to complete a PhD cheat less often. The pattern is intuitively obvious: students preparing for academic and research careers—i. e. those who are committed to accumulating knowledge and skills and to developing a relevant reputation—find little or no interest in cheating as a destructive practice.

Like plagiarism, cheating is less popular among students who are convinced they will work in their field of study.

5.4. Contextual characteristics

Learning environment indicators. Again, three of the four learning environment indicators constructed as a result of factor analysis turned out to be significant. The outlying indicator is again a professor's perception of the academic dishonesty prevention practices being enforced by the university. Among the significant predictors, the proportion of professors engaged in research produces the strongest effect: increasing this indicator by one point reduces the odds of cheating by 38%. A somewhat lower influence is exerted by the proportion of professors intolerant to cheating, which correlates negatively with the odds of cheating. The coordination effect hypothesis was confirmed: the higher the proportion of cheaters in a university, the higher the probability of using dishonest practices.

6. Conclusion

This study was aimed at identifying the determinants of using plagiarism and cheating by students, allowing for the possible effects of their personal characteristics and learning-environment parameters.

What is the role of individual student characteristics?

The research revealed that *engagement in learning* greatly affects the likeliness of cheating. The intensity of preparing for classes is the best predictor of plagiarism, displaying the learning effort of students. *Performance*, as we suggested, is not a significant predictor of academic dishonesty: the difference between "formally" low and high performers only mattered for plagiarism.

A relatively low though significant negative correlation was found between the probability of using dishonest practices and *the education quality priority* in choosing a university and major, which is an indirect indicator of intrinsic motivation for learning.

Cheating is determined less by *engagement in learning* than plagiarism, which is probably due to its higher incidence and acceptability by students. In other words, plagiarism is mostly committed by weaker students, while cheating is also practiced, although less, by high performers.

The rest of the personal characteristics investigated in this study are relatively less powerful. For example, *intent to get another Bachelor's or Specialist degree* increases the odds of using plagiarism. In all likelihood, such students are not satisfied with their current major and thus become indifferent to the learning process and negligent to academic integrity. Cheating, however, is not affected by this intention; instead, it correlates with *further education plans*, which imply expecting a relevant return on investments in one's human capital.

Unlike education plans, *career plans* affect the probability of both cheating and plagiarism, which are practiced less often by students who are convinced they will work in their field of study. Having no such confidence may be explained by the perceived imbalance between the quality and content of current education, on the one hand, and the requirements of prospective employers, on the other hand. Therefore, academic dishonesty appears to be a sober response to the gap between what the university provides and what the market needs. We can also say that plagiarism and cheating correlate with other factors, which are extrinsic to the university and characterize overall social conditions. The prospective employment situation is a good example. Being uncertain about getting a job in one's field of study under existing and anticipated labor market conditions, students may grow ever more prepared for and tolerant to academic dishonesty. We find it important to clarify the correlation between labor market characteristics, such as demand for a specific major, student perception of employment prospects, and student attitudes to their profession, on the one hand, and the probability of engaging in academic misconduct, on the other hand. The framework for analysis of both university and student characteristics could also be extended.

We expected the *engagement of students in research* to be able to affect the odds of using dishonest practices, as this suggests compliance with academic integrity norms. However, the effects turned out to be insignificant. This could perhaps be explained by the relatively low requirements for student research papers and the also relatively low academic integrity standards applied by universities.

What is the role of a university and its faculty in particular?

Reasoning from the results of foreign empirical studies, we assume that certain university characteristics may serve as constraining factors for academic dishonesty. First, it is about detection policies adopted by universities and supported by their faculties. This characteristic was assessed based on the question to professors on the incidence of plagiarism checks in their universities.

Second, it is about university characteristics affecting student perceptions of the threat of penalties for plagiarism. Students tend to look first thing to the prevailing attitude of professors to academic misconduct, which manifests itself in more or less severe penalties for plagiarism and cheating. Another indicator of learning-environment "severity" was the engagement of professors in research, which presumably

accounts for a higher commitment of students to academic integrity norms, as compared to having professors who are not engaged in any research activities.

Third, professor assessments of the incidence of academic dishonesty was also a significant predictor. The higher the estimates—which reflect learning environment integrity—the higher the probability of students using dishonest practices as a result of the coordination effect.

The research revealed that the learning-environment indicators we had constructed had a great impact on both plagiarism and cheating.

An exception to this is *anti-plagiarism practices enforced by a university* (plagiarism checks), which describes the probability of “getting caught”. Assessment of this probability affects the decision to engage in academic dishonesty, which has been proved empirically [McCabe, Trevino, Butterfield 2001]. On the one hand, zero correlation between academic misconduct and this indicator contradicts our hypothesis that students assessing the risk of getting caught as high will be less likely to resort to plagiarism or cheating due to increased potential costs. On the other hand, despite plagiarism detection practices enforced by universities, cheaters usually receive mild or no punishment at all: only 39% and 23% of professors support applying severe penalties for cheating and plagiarism, respectively. Therefore, the odds of being severely punished are minimal even in universities that address plagiarism actively. This means that the estimated costs of engaging in plagiarism or cheating will only increase along with the probability of detection. When severe penalties (such as reprimand, reporting to the Dean, or expulsion) are hardly ever applicable, the consequences of academic dishonesty turn out to be pretty safe for students who feel ashamed and guilty in the worst scenario. Even then, however, this feeling will be rather weak, given the overall acceptance of academic misconduct by Russians, especially students [Roshchina, 2013].

Research outcomes prove the hypothesis that the probability of using plagiarism and cheating is higher in a learning environment characterized by a high incidence of academic dishonesty. This characteristic more significantly affects cheating than plagiarism, perhaps because of the “collective” nature of cheating (when students copy from one another) and the purely individual nature of plagiarism. The coordination effect is also proved by the fact that more senior students are more likely to show dishonest learning behavior than freshmen. In other words, students see their peers avoid punishment and decide to “join the movement” afterwards [Josien, Broderick, 2013. P. 101].

In our view, the research results speak for the possibility of keeping academic dishonesty at bay. First, professors should be encouraged to apply severe penalties. Second, such penalties may be legitimized in the eyes of students if the punishment and enforcement procedure is described in an official document (honor codes, for instance, are widely popular in American universities). Third, it is vital to

bring to the attention of students that all works will be checked for plagiarism, that cheating is totally unacceptable, and that penalties will follow almost certainly.

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Table A1. Assessment of the binary logistic regression model with a dependent variable of “Experience of any form of plagiarism”

Appendix

Variable	<i>B</i>	Value	Exp (<i>B</i>)
Male gender	0.030	0.745	1.031
Employed part-time	0.193**	0.038	1.213
Government-sponsored	-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
1 st year (base)		0.001	
2 nd 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
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
Major: Social Sciences ^a	0.058	0.604	1.059
Major: Engineering ^a	-0.152	0.281	0.859
Major: Culture and Arts ^a	-0.440*	0.079	0.644
Single-parent family	-0.167	0.110	0.846
Mother has a higher education	0.139	0.118	1.149
High-income family	-0.176**	0.049	0.839

Variable	<i>B</i>	Value	Exp (<i>B</i>)
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
Education quality is a priority in choosing university and major	-0.268***	0.003	0.765
State university	0.269	0.117	1.309
Main campus	-0.042	0.779	0.959
999 students or less in the student body (base)		0.190	
1,000–4,999 students in the student body	-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
Engagement of professors in research	-0.254**	0.018	0.775
Incidence of academic dishonesty as assessed by professors	0.300***	0.001	1.350
Intolerance to cheating	-0.577***	0.000	0.561
Constant	-0.543	0.162	0.581
Number of observations		2931	
Nagelkerke's <i>R squared</i>		0.104	
-2Log-likelihood		3315.8	
Hosmer-Lemeshow goodness-of-fit test		$\chi^2 = 6.576; df = 8;$ $sig = 0.583$	
Percentage of answers identified correctly prior to introducing predictors		70.9	
Percentage of answers identified correctly upon introducing predictors		72.5	

Notes:

*** statistical significance $p=0.001$;

** statistical significance $p=0.01$;

* statistical significance $p=0.05$;

^a base: majors in life sciences, medicine, and humanities;

^b base: transportation, engineering, and medical universities.

Table A2. Assessment of the binary logistic regression model with a dependent variable of “Experience with cheating in tests and exams”

Variable	<i>B</i>	Value	Exp (<i>B</i>)
Male gender	-0.083	0.386	0.921
Employed part-time	0.091	0.333	1.096
Government-sponsored	-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
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
1st year (base)		0.000	
2nd year	0.753***	0.000	2.124
3rd year	0.631***	0.000	1.879
4th year	0.955***	0.000	2.6
5th 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: Life Sciences ^a	0.287**	0.044	1.332
Major: Engineering ^a	0.325**	0.028	1.385
Major: Medicine ^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 has a higher education	0.103	0.256	1.108

Variable	<i>B</i>	Value	Exp (<i>B</i>)
High-income family	0.047	0.604	1.048
Education quality priority in choosing university and major	-0.264***	0.004	0.768
State university	0.616***	0.000	1.852
Main campus	0.444***	0.004	1.559
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
999 students or less in the student body (base)		0.6	
1,000–4,999 students in the student body	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 professors in research	-0.486***	0.000	0.615
Incidence of academic dishonesty as assessed by professors	0.232***	0.009	1.261
Intolerance to cheating	-0.271**	0.024	0.763
Constant	-1.463***	0.000	0.232
Number of observations		2931	
Nagelkerke's <i>R squared</i>		0.145	
-2Log-likelihood		3230.69	
Hosmer-Lemeshow goodness-of-fit test		$\chi^2 = 3.829$; <i>df</i> = 8; <i>sig</i> = 0.872	
Percentage of answers identified correctly prior to introducing predictors		70.7	
Percentage of answers identified correctly upon introducing predictors		72.5	

Notes:

*** statistical significance $p=0.001$;

** statistical significance $p=0.01$;

* statistical significance $p=0.05$;

^a base: majors in social sciences and humanities;

^b base: economic, medical, teacher training and classical universities.

Student Experience: A New Approach to Evaluating the Quality of Erasmus Mundus Joint Master Degrees through Survey Research

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Abstract. Student perspectives and quality assurance have been prominent policy topics in the European policy landscape. Student surveys conducted by tertiary education institutions, national agencies, and independent student organizations have systematically provided feedback to stakeholders about numerous aspects that are in need of improvement. Adding to the existing literature, the Course Quality Advisory Board (CQAB)

of the Erasmus Mundus Student and Alumni Association (EMA) launched the Course Quality Student Services (CQSS) survey in the fall of 2013. Unlike existing data collection mechanisms, the CQSS survey focuses on capturing the comparative experience that students undergoing an Erasmus Mundus Joint Master Degree (EMJMD) are well positioned to provide. This paper reports on the methodology and the research instrument behind the second wave of the CQSS survey, with data collected between the 1st of June and the 20th of July 2015. CQSS amassed 2131 responses from students in 167 programs and 128 countries. Seventy-eight programs managed to obtain 10 or more responses. Information produced with the CQSS survey can be used to improve student experiences and enhance the quality of programmes under the Erasmus Mundus umbrella. Lessons learned can also be used to enhance the provision of educational services in other internationally focused programs.

Keywords: student experience, survey research, course quality evaluation, EMJMD.

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Initiated in 2003 by the European Commission, Erasmus Mundus Master Courses (EMMC) offered students the unique learning opportunity of studying in multiple countries as part of their degrees, culminat-

Introduction

ing in a joint or dual master's certificate upon completion. Since its inception in 2004, Erasmus Mundus has provided more than 15,000 scholarships for students from every corner of the world to study at more than 200 different joint programs. The concept of EMMC continued as EMJMDs under the Erasmus+ educational programs of the European Commission. Students of EMJMDs continue to experience at least two different tertiary education institutions in two different national tertiary education systems. This *multi-institutional* experience, intrinsic to the EMJMDs, is precisely what positions its students in a pivotal position to provide meaningful comparative feedback concerning their participation in distinct higher education systems, and also to identify areas for improvement in higher education across Europe and beyond, particularly in the emerging educational ventures offered in association with multiple tertiary education institutions—an intensifying and growing phenomenon supported by increasing investment in the internationalization of education [Altbach, Knight, 2007].

In the increasingly borderless and global tertiary education landscape, students no longer solely rely on their national institutions for enrolment. At the same time, several universities in Europe have been reshaping their strategies to increase the number of international students [European Migration Network, 2012]. There is a growing number of degrees offered in association that in turn lead to longer and more frequent mobility periods experienced by students. As a result the number of institutions attended during a single degree is also increasing. Additionally, educational environments entail student populations that are becoming more diverse in terms of ethnicity, culture, religion, previous educational experiences, etc. Therefore, as tertiary education institutions evolve to become more collaborative and international, there is an urgent need to develop sound quality assurance mechanisms that support the development of the internationalization trend without disregarding the quality of education being provided.

Even though studies about student feedback are abundant, past research lacks empirical studies that explore in depth the challenges faced by students attending several institutions as part of the same degree and as part of different tertiary education systems. This study therefore aims to examine the merits of the CQSS survey as a tool that was designed to offer individual EMJMD courses comprehensive student feedback, but also to offer additional stakeholders, including students, aggregated information about the experience of a mobile, academically focused student. This closes the feedback loop for students [Powney, Hall, 1998], and helps to establish “organisational structures and cultures to make their desired intentions a living reality” [Fielding, 2004. P. 202].

The following section of this paper provides a description of the context in which the CQSS survey emerged, which is followed by a literature background identifying other studies that assessed student feedback. The paper then describes the CQSS survey methodology,

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explaining how the survey was designed and administered, and introducing selected preliminary results. The paper concludes with an in-depth discussion about the ways in which the CQSS survey data will and can be used.

CQAB is an independent advisory body that operates on a voluntary basis: its members have not and do not receive financial benefits for their CQAB-related activity. Membership in CQAB is assured through a competitive recruitment process among EMA members. Internally, CQAB has two main separate structures: 1) Management of [em.feedback@em-a.eu](mailto:feedback@em-a.eu), which assists students with pressing quality issues; 2) the Survey Team, which is tasked with conducting the CQSS survey. CQAB maintains its autonomy in research and data analysis tasks, but cooperates with external actors in the survey distribution process.

Context

CQAB was created as a result of the pressing and constant concerns of EMA members about the quality of student experiences during Erasmus Mundus (EM) courses. Internally, CQAB has a variety of tools to capture student concerns and to interact with student representatives from various programmes, but the CQSS survey represents its most comprehensive and systematic initiative focused on quality assurance. The inception and design of CQSS is rooted in the complexity of the EMJMD student experience and driven by two distinct factors: the perceived systemic issues around quality across courses, and the general underrepresentation of students in evaluating the EMJMD programme.

Throughout the work of CQAB on quality assurance, it became apparent that students across different courses, fields, and countries faced similar concerns. At the same time, these concerns were different from those experienced by traditional students that work towards a master's degree within one institution and contingent on the multi-level, multi-institutional, and multi-geographic dimensions of EMJMDs. Both the first wave of the CQSS survey, which was launched in the fall of 2013, and the second wave convey these key differences.

The first key difference is that students made a clear separation between their overall EM course and the tertiary education institution they were studying at. Students would signal that they enjoyed their course experience, but felt disappointed or underserved by one of the universities they attended, or they would praise one particular institution, while suggesting an overall level of dissatisfaction with their entire course. Different from traditional courses, the consortia within the EMJMD framework become a standing distinguishable pillar separate from all partner institutions. The complex *multi-level* student experience at established tertiary education institutions and under the umbrella of a consortium determined the choice of CQAB to design questions that separately evaluate the entire EMJMD course experi-

ence associated with a consortium on the one hand, and the institutional experience on the other hand. Second, evaluations by students traditionally speak directly and exclusively about different aspects of one identifiable tertiary education institution. Again, the experience of EMJMD students is *multi-institutional*. As part of the CQSS survey, respondents evaluate each tertiary education institution they attended separately. Third, EMJMD students highlight issues of mobility, derived from their *multi-geographic* experience. These issues connect to the legal, logistical and cultural aspects of mobility and are unique to internationally mobile students.

According to recommendations and best practices of the European Commission, most EMJMD programmes should involve students in quality assurance mechanisms at the course level, and students from a specific course should be consulted during external evaluation visits [EACEA, 2015]. However, through the constant monitoring of student concerns, CQAB perceives a lack of involvement by EMJMD students in the process of evaluating the entire EMJMD experience. At the same time, there is rich potential in the involvement of EMJMD students to understand the challenges of higher education institutions across Europe and beyond. Their awareness illuminates the challenges of an increasingly globalized higher education experience, with growing numbers of internationally mobile students—a reality that will become evermore present in the higher education landscape.

Literature review As students started to be perceived as customers, the academic literature on student satisfaction boomed. Student perceptions are seen more and more as both valuable and valid [Hu, Kuh, 2003]. National governments, tertiary education institutions, and other stakeholders frequently use interviews, focus groups, and surveys to improve the quality of the student experience. The National Student Survey in the UK, the Australian Course Experience Questionnaire, the Canadian National Survey of Student Engagement, and the widespread media circulations of their results are examples of the prominence of information on student satisfaction. In addition, in 2015, the Government of Finland implemented a new funding scheme for universities that allocates 3% of funding in contingency with student feedback—an initiative that cogently illustrates the importance of student feedback as an indicator of educational quality (Ministry of Education and Culture, 2014). Student satisfaction data collection became specialized for institutions [Petruzzellis, D’Uggento, Romanazzi, 2006; Douglas, Douglas, Barnes, 2006], disciplines [Al Kuwaiti, Subbarayalu, 2015; Gibson, 2010; Narang, 2012], and capture the experience of various student subpopulations including by degree of dissatisfaction [Bennett, Kane, 2014] and subcomponents of the institutional experience such as laboratory conditions [Nikolic et al., 2015] and online learning [Venter, 2006]. Most data collection endeavours on student feedback and sat-

isfaction focus on the various key factors identified by Gatfield [2000]: 1) academic instruction; 2) campus life; 3) recognition by government, institutional partners, and potential employers; 4) institution guidance.

Often student organizations collect survey information from their constituencies measuring several aspects of the student experience. Recently, the European Student Union conducted the QUEST survey—a pan-European study focused on identifying the views of students on the quality of higher education [European Student Union, 2013]. The Erasmus Student Network has launched a survey to its members almost every year since 2005. Each year, the survey focus has changed. The most recent study targeted the international experiences of students and language learning [Erasmus Student Network, 2014]. Students seeking mobile degrees in EU funded programmes (including EMJMDs) are surveyed through the Erasmus Mundus Graduate Impact Survey [Erasmus Mundus, 2014]. The survey focuses on the post-graduation employability impacts for students. The Graduate Impact Survey, however, does not focus on the experiences students have during their course. To our knowledge, with the exception of the CQSS survey, to this date, no initiative captures the unique comparative experiences of mobile students in providing student feedback.

The CQSS survey also matches the recommendations given by the inter-governmental document Standards and Guidelines for Quality Assurance in the European Higher Education Area [Ministerial Conference in Yerevan, 2015] as it measures and advocates for the following: 1) student-centred learning, teaching, and assessment; 2) learning resources and student support; 3) information management; 4) public information; 5) on-going monitoring and periodic review of programmes.

The CQSS survey was created and designed by CQAB. SurveyMonkey was used as a tool to disseminate the CQSS survey and to collect responses. Participation in the survey was anonymous and voluntary. Participants did not receive any rewards to increase the number of responses. Branch structures in the survey allowed for a customized experience for respondents. This included the ability to properly identify their EMJMD course, the name of the tertiary education institutions attended, and the order of attendance between various institutions. Pertinent and distinct questions were displayed for first year students, second year students, and alumni of EMJMD programs. Subpopulations, such as internship takers, students that relocated with their family, students with self-identified disabilities, and students that reported cases of sexual harassment were asked additional questions.

In contrast to surveys for students enrolled in only one institution, the CQSS survey has a dynamic structure, which includes multiple sections that are presented repeatedly in order to compare the same dimensions across all institutions attended (e.g. library services for

Methodology

first university attended, for second university attended, and third university attended). On the other hand, other sections of the survey target the experience of students within the EMJMD course as a whole (e. g. impact on employability). Traditional student surveys would only capture the second aspect.

Survey design In order to achieve the goals of CQAB (i. e., improve quality of EMJMDs and the quality of the student experience), the CQSS survey was designed to assess all major topics that influence the quality of education provided by those programs. A special focus is placed on areas that are particularly relevant for multi-level, multi-institutional, and multi-geographic educational programmes, including aspects regarding mobility, diploma and certification, etc. CQSS included both academic (e. g. curricula, assessment) and non-academic elements (e. g. accommodation, visa issues).

In line with other surveys that evaluate student experience (National Student Survey, UK; National Survey of Student Engagement, US and Canada), this survey included the traditional areas of analysis deemed as indispensable to examine student experience: *Support services* (e. g., international office, support on financial and administrative issues); *Pedagogical issues* (e. g., curricula, thesis supervision, grading criteria, student feedback mechanisms, internships) and *Satisfaction*. In addition, the survey was structured such that each university from the consortium could be evaluated separately (facilitating inter-institutional comparisons). On the other hand, some sections of the survey were especially created to evaluate the EMJMD as a whole (i. e. considering the collective experience at all partner universities in the consortium).

All the items that were included in the final version of survey resulted from a thorough three-step validation strategy:

1. Analysis by CQAB members that scrutinized all questions (language, purpose) in order to reach consensus on the validity and relevance of each question.
2. After refinement of the previous draft version of the CQSS survey, a pilot version of the questionnaire was introduced on SurveyMonkey. The pilot was sent to EMJMD programme representatives (student or alumni of course that represent the course at the level of EMA) and all CQAB members. Fifty-one respondents completed the pilot version of the CQSS survey. This step proved useful in finding mistakes, incoherencies, and areas that required improvement and clarification. Furthermore, it allowed for a fair prediction of the time needed to complete the survey. The CQSS survey pilot included an additional field where respondents were asked to report any problems or suggestions.
3. The feedback gathered from the pilot exercise was used to improve and reach the final version of the CQSS survey.

This process allowed CQAB to create a survey that was comprehensive across multiple variations and levels of English-language ability, thus increasing the reliability of incoming data. Further analysis of the reliability of constructs will be presented in the Results section of this paper.

Questionnaire items were formulated through Likert-scale queries (“Very satisfied”, “Somewhat satisfied”, “Somewhat unsatisfied”, “Very unsatisfied”) and open-ended questions. On questions where students were asked about their agreement on certain issues, a similar scale was used: “Agree”, “Somewhat agree”, “Somewhat disagree”, “Disagree”. There is no definitive strategy to create a Likert-scale and researchers suggest that Likert-scale use is contingent on the goals of the study [Matell, Jacoby, 1971]. In this particular study, CQAB decided to use a 4-point Likert-scale with no neutral option, but instead included the possibility for respondents to select the option N/A (“Not Applicable”). This step contributed to a more reliable data collection procedure, since it reduced the probability of occurring missing data, at the same time as making the deferral of answers possible. The CQSS survey aims to provide a comparability assessment tool for EMJMDs. To this end, it is imperative to gain indicative assessments from as many students, pertaining to as many courses as possible.

In compensation, open questions were used to examine issues that were perceived as more complex or nuanced. Throughout the survey, the possibility to provide open answers was instrumentally inserted in order to complement the responses obtained through quantitative items (more focused on trends and measurement) with more in-depth information (to explore a respondent’s reasons and rationales). This approach gave respondents the space to more comprehensively voice their concerns and recommendations.

The survey included six thematic areas, as illustrated in Table 1. Respondents were instructed to first answer survey items considering their EMJMD experience as a whole, and then in relation to the experience respondents had at each university. Some questions only targeted certain respondent subgroups (e. g. alumni, second year students). Appendix 1 covers all the items included in each thematic area.

Structure of the survey

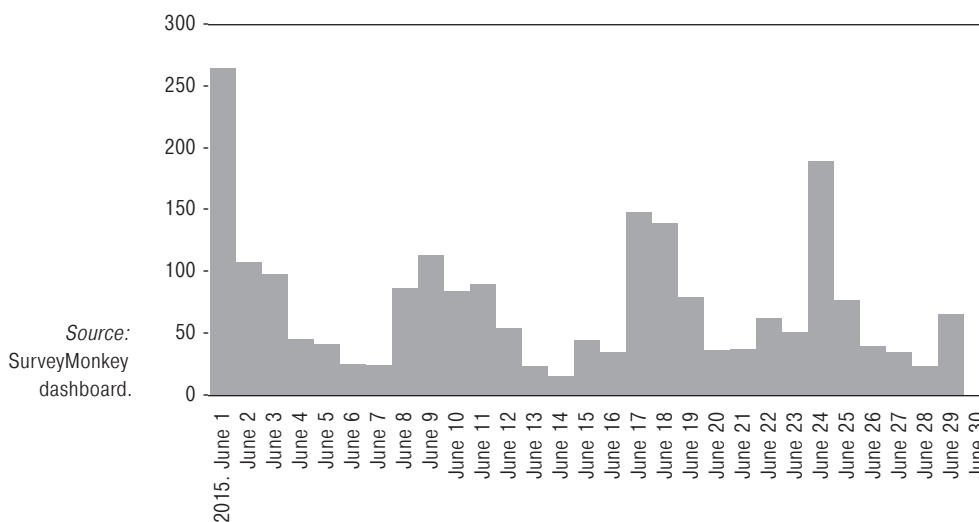
The CQSS survey was distributed through multiple channels to facilitate a higher response rate, but EMJMD course coordinators and staff represent the main partners of CQAB in the dissemination process. Additionally, members of EMA received reminders via the internal communication channels of the association. The European Commission representatives aided the distribution process by encouraging courses to forward the CQSS survey to students. Additional distribution channels, such as directly targeting programme Facebook pages, were used for courses with a low response rate.

Survey dissemination

Table 1. **Thematic areas of the CQSS survey**

Thematic areas	Scope and level of evaluation	Target
Background information		All respondents
Supporting Services	EMJMDs as a whole; each tertiary education institution attended	All respondents
Teaching, Learning and Supervision	Each tertiary education institution attended	All respondents
Assessment and feedback	EMJMDs as a whole; each tertiary education institution attended	All respondents
Internship/Fieldwork, Personal development, Career	EMJMDs as a whole	2nd year students and alumni
Satisfaction	EMJMDs as a whole; each tertiary education institution attended	All respondents
EMA	Survey relevance, role of EMA	All respondents

Figure 1. **Distribution of collected responses**



In order to motivate EMJMD programmes to distribute the survey, CQAB published the response rates per course each week during the data collection process. Each update was used as an opportunity to remind course administrators about the CQSS survey and to forward it to their students. The results of the success of each survey distribution strategies are evident from Figure 1.

Table 2. **Distribution of responses for the 2015 CQSS survey by subcontinent**

Sub-continent	Number of respondents	% of total number
Australasia	13	0.61
Caribbean	12	0.56
Central America	113	5.30
Central Asia	18	0.84
East Asia	317	14.88
Europe	852	39.98
North Africa	41	1.93
North America	103	4.84
South America	157	7.37
South Asia	272	12.76
South Africa	96	4.50
West Africa	48	2.25
West Asia	67	3.15
Other	22	1.03

The second wave of the CQSS survey was open for 7 weeks from the 1st of June 2015 until the 20th of July 2015. During this period, 2139 complete survey responses were collected. Eight survey responses were excluded from further analysis as the same respondent submitted them twice. For these cases, only the second completed response was kept for future analysis.

Students from 167 courses from 128 countries completed the survey (Table 2). There were 977 females (46%) and 1135 males (54%) among the survey respondents. Scholarships for their EM studies were awarded to 1674 (79%) respondents, and 457 (21%) respondents were not recipients of scholarships. Seventy-eight courses had 10 or more respondents. R software was used for the data analysis presented in this paper (R Core Team, 2015).

Students that started their Erasmus Mundus program between 2012–2014 accounted for 1600, or 75%, of responses. The survey response rate for these academic years for scholarship holders is on average 24% (Table 3). The response rate is calculated only for scholarship recipients, as no official accurate data on the total EMJMD population is available. Similar response rates are reported for other online surveys with a comparable structure that offer no material incen-

Results

Table 3. **Response rate of CQSS survey**

Start year	Other	2010	2011	2012	2013	2014
Total number of students enrolled and awarded with EU scholarship ^a	—	2141	1917	1923	1966	1379
CQSS responses in 2015 (% of total number of students) ^b	284	94 (4.39)	111 (5.79)	226 (11.75)	535 (27.21)	466 (33.79)

^a European Commission, 2013.

^b Numbers indicate only students with scholarships.

tives for participants [Nulty, 2008]. This means that the CQSS survey managed to achieve good coverage and is likely free of distribution and completion biases. The response rates for the most recent years have been similar with the final year's CQSS survey, but there is a noticeable drop for students who enrolled in earlier years. For example, the 2013 CQSS survey wave managed to gather 471 responses from students enrolled in 2010, yet this edition of the survey managed to obtain only 112 responses from the 2010 cohort. Such a drop in responses is not surprising since current students are expected to be more willing to allocate time to complete a lengthy survey about their programme.

Issues of validity are especially important in online surveys since researchers have very little control over the quality and accuracy of responses they receive [Wright, 2005]. There are several indirect measures that help ensure that responses collected through the CQSS survey are completed by actual former and current EMJMD students in an accurate manner. In order to allow the completion of the survey during multiple sessions, SurveyMonkey requests respondents to create and input a unique identifier upon the beginning of the survey. This step helps ensure that a single individual filled each response. Altogether, 2124 respondents entered unique identifying codes, with only 7 respondents copying the identifier that is given as an example in SurveyMonkey. A further analysis of demographic characteristics, such as age, sex, and nationality, showed that, indeed, these completed responses might be attributed to unique respondents. Similar analysis of IP-addresses recorded by SurveyMonkey confirmed the above conclusions. There were 1981 unique IP-addresses. An investigation of demographic information and response inputs for the 150 duplicate IP's showed that all originated from different individuals.

An additional way to gauge whether respondents devoted sufficient attention to questions asked in a survey is to analyse the length of time spent on completing the survey. The pilot testing of the CQSS survey showed that 20–25 minutes are required to mindfully complete the survey. The median time to complete the CQSS survey is 26.7

minutes, illustrating that respondents spent considerable and sufficient time for its completion.

Cronbach's alpha is a commonly used measure to evaluate the reliability of underlying constructs and scales [Cronbach, 1951]. In the case of multiple constructs studies, it is recommended to calculate the Cronbach alpha coefficient for each of those constructs [Tavakol, Dennick, 2011]. Similarly, in this case the CQSS survey questions were divided into sets of indicators measuring satisfaction for each type and dimension of service. There is no definitive scale indicating acceptable levels of alpha. However, Tavakol & Dennick suggest that an acceptable range starts with a minimum of 0.70 and a maximum of 0.90. Considering the CQSS survey, there were 32 distinct sets of questions and indicators, with only two scoring below 0.80. This result is promising, but should be treated with caution. As Sijtsma showed, Cronbach's alpha may be a poor indicator of the reliability of underlying constructs or even the internal consistency of concepts [Sijtsma, 2009]. Moreover, 20 sets of questions received alphas higher than 0.90. This result might be an indicator for the redundancy of some questions in their respective sets. For the purposes of this study, alpha is used in conjunction with other measures to ensure the validity of data. A more rigorous analysis of validity and reliability on underlying or latent constructs is not a focus of this paper and will be performed in forthcoming studies.

Finally, 1909 respondents (91%) indicated that they are either "somewhat satisfied" or "satisfied" with the content of the CQSS survey, with only 181 (9%) of respondents indicating otherwise. Such an overwhelming positive reaction, combined with all other measures, is at least indicative of the fact that students were satisfied with the content of the CQSS survey.

CQSS follows a rich tradition of measuring student satisfaction and elements of the student experience, as illustrated in the literature review. At the same time, the CQSS survey brings novel and unique contributions. First, the CQSS survey is the only tool available to transversely measure student satisfaction of and across EMJMDs. Second, the survey covers the distinct multi-level, multi-institutional and multi-geographic experience of EMJMD students.

While to this date there is no evidence on the actual impact of the CQSS survey, results of the survey can be used in multiple and complementary ways. First, individual survey reports are being generated for and distributed to EMJMD courses with 10 or more responses. Feedback provided by university consortia after receiving the reports corresponding to the first CQSS survey edition allowed CQAB to improve the clarity and relevance of course reports. At the request of courses, current reports include the distribution of means for all EMJMD courses with 10 or more responses. For each indicator,

Discussion

Table 4. **Example of a comparative table**

Course X	n	Mean Cours X	Mean for all EMJMD courses	Quartile distribution of means for all EMJMD courses				
				0%	25%	50%	75%	100%
Course content	23	3.13	3.19	2.54	3.03	3.23	3.38	3.70
Enrolling in classes	23	3.85	3.42	2.57	3.25	3.44	3.62	3.92
Evaluation methods	23	2.74	3.03	2.23	2.88	3.06	3.22	3.76
Information about fieldwork	23	3.00	2.95	2.00	2.80	3.00	3.18	3.57
Standards of behaviour	23	3.55	3.44	2.77	3.28	3.42	3.63	3.90
Timetable	23	3.22	3.13	1.75	2.99	3.20	3.33	3.80

the course mean is provided, as is the aggregated mean and the distribution of means for all EMJMD course. By providing the mean distribution, stakeholders are better able to evaluate their position when compared to other programmes under the Erasmus Mundus umbrella. Table 4 provides an example and contains information about the number of respondents from the course (n), the average score that the specific dimension received (Mean), the mean on the same dimension for all respondents (i. e., 2131 respondents), and a quartile distribution of results for all EMJMD courses with more than 10 responses. A calculation of means is based on the aforementioned Likert-scale. Each option corresponds to a numeric value in the following way:

- “Very unsatisfied” or “Disagree” = 1.
- “Unsatisfied” or “Somewhat disagree” = 2.
- “Satisfied” or “Somewhat agree” = 3.
- “Very unsatisfied” or “Agree” = 4.

Therefore, the average score for any given dimension in Table 4 ranges from a minimum of 1 to a maximum of 4, with 4 being a perfect score for each dimension. Using the Likert-scale in such a way is another debatable topic in psychometrics and is usually not recommended [Boone, Boone, 2012]. At the same time, using means to construct tables such as the one below provides stakeholders with an interesting outlook and increases the impact of the data. Other reputable instruments, such as the U-Multirank use a similar approach.

In the table below, for the dimension “Course content” we see that the mean of Course X is 3.13. This places Course X in between the 25%_50% quartile among the mean scores for the dimension “Course content” of all other courses with 10 or more responses. That means that at least half of other courses scored higher on the di-

mension “Course Content” than Course X and that at least 25% of courses scored lower. It should be noted that the average score is “noisy”, meaning that the real value of the mean of the course might be slightly different from the ones reported in the table. Therefore, it makes sense to look at this table as an exercise of placing courses in one of the corresponding four categories: (1) 0%–25%; (2) 25%–50%; (3) 50%–75%; and, (4) 75%–100%. These indicate the relative position of a given course among other EMJMD courses. CQAB decided to use a table representation over graphic representation (e. g., boxplot) in order to provide a facile way to compare a course with its counterparts and to balance the data representation in a report that does not overwhelm stakeholders with excessive visual information.

Policy actors can also use data from the CQSS survey in order to detect areas that might need improvement on a broader policy level.

The CQSS survey results may also serve as an accountability tool for EMJMDs. Since most programmes receive funding for a relatively short period of time (5 years), it is in the best interest of courses to provide the highest quality education as early in the programme as possible. By being able to highlight the success of courses using the CQSS survey results, their sustainability beyond EMJMD funding can potentially increase.

Prospective students can also use results of the CQSS survey in order to evaluate their programmes of interest. This is not a ranking *per se* since CQAB does not provide stakeholders with tables of courses that are “best” or “worst” on any given dimension. But information from CQSS can at least provide students with a deeper understanding of what kind of domains are strongest and weakest in their chosen programme. Making this information available to students has the main purpose of allowing them to prepare in advance for challenges they might face throughout their EMJMD experience. In order to facilitate access to CQSS survey results, CQAB has decided to make the results freely available online.

Finally, reports can be used internally by each EMJMD as they provide information on each individual university in the consortia. This information may be used to steer evidenced-based change and improvement across aspects of any given university. This means that efforts of administrators and course coordinators may be targeted towards key challenges, thus facilitating an effective and efficient decision-making process. To illustrate, Figure 2 and Figure 3 provide information on two universities in the same consortia on the same set of indicators. Figures were created using a “likert” package in R [Bryer, Speerschneider, 2014].

The discrepancy in dimensions between the two figures is due to the fact that not all students replied to every question in the survey. In the case of Figure 3, there were less than 10 respondents on the dimensions “Buddy or tutor system”, “Student organizations”, and “Health services”.

Figure 2. **Results on selected indicators for one university in a consortium (%)**

(Rate the helpfulness of the following units of people at the second university)

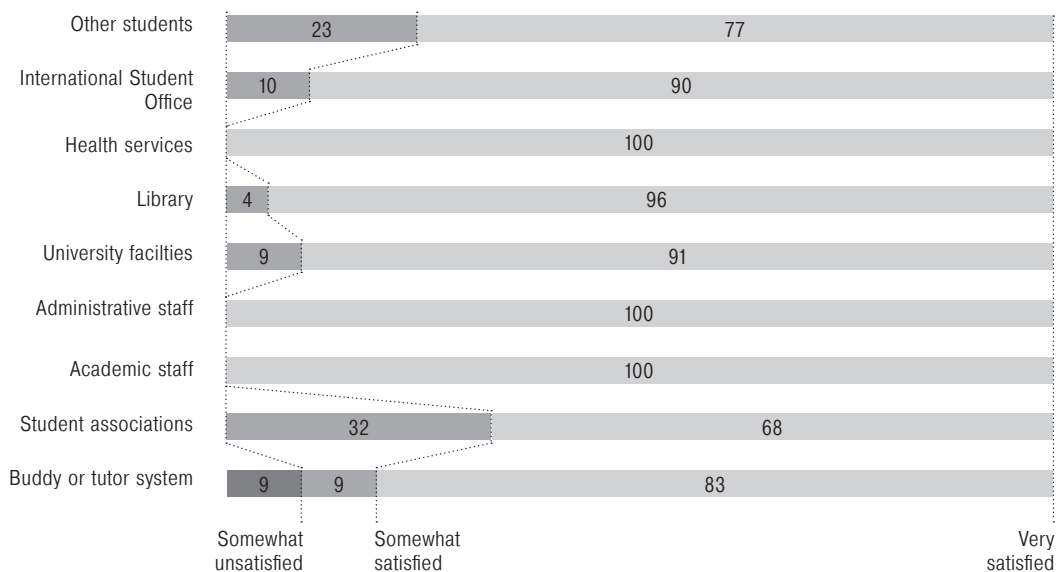
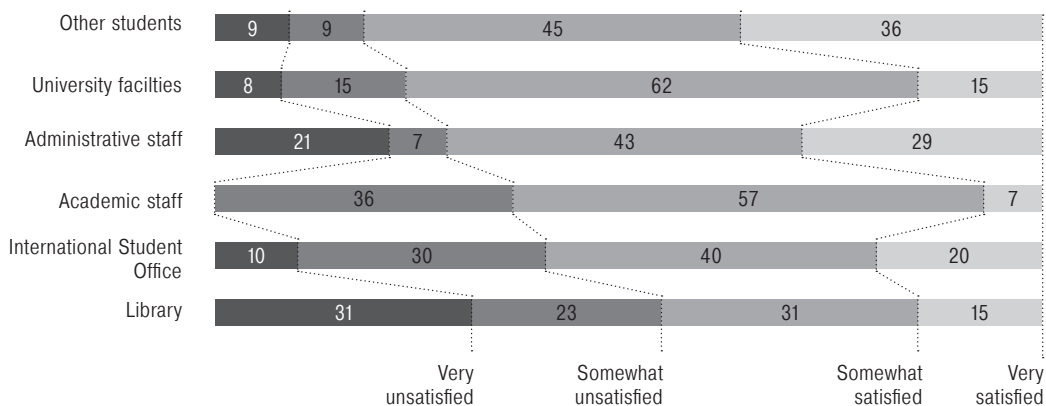


Figure 3. **Results on selected indicators for a second university in a consortium (%)**

(Rate the helpfulness of the following units of people at the third university)



Nevertheless, it should be noted, that each EMJMD is unique in multiple significant ways (e. g. student and consortia characteristics). Therefore, it is rather difficult to capture this uniqueness through standardized surveys. For that reason, CQSS results should be used with caution and with cross-validation from other channels (e. g., financial reports, interviews, and focus-groups). Besides the quantitative approach, open questions included in the survey (e. g. “How could the orientation and integration experience have been improved?”) allowed for the collection of numerous systematic recommendations and suggestions from students. This information can provide instrumental support for EMJMD coordinators to change and enhance their courses.

In lieu of these considerations, the CQSS survey is deliberately not used to produce ranking tables for courses. This choice is a relatively uncommon one, since ratings became a go-to tool for comparing universities. Yet, the philosophy of CQAB is to respect the complexity and peculiarities of any given programme and to defer decision-making to the stakeholders of courses. CQAB desires to concentrate on gathering and providing descriptive data that summarizes and highlights the major observed trends among EMJMD courses, both positive and negative.

Exploring the perceptions of student experiences is an important step in understanding the overall quality of a course. This is especially important for EMJMD students, as they have less time than traditional masters students to accommodate to any given country and any given institution. The CQSS survey provides stakeholders with a tool to address this issue, while at the same time capturing the comparative experience of EMJMD students. Through the CQSS survey, policy makers may become aware of the transversal issues across all EMJMD courses. Programme representatives will in turn receive feedback about all institutions in their consortia and have access to comparative information about all other EMJMD courses. Ultimately, the CQSS survey was designed and implemented by CQAB to aid in closing the feedback loop between students and other stakeholders of EMJMD courses. The lack of a clear feedback loop is often associated with an “apathy cycle” [Maxwell Stuart, 2015] or alienation [Mann, 2001], detrimental to everyone involved in a course. As such, the CQSS survey is an important tool to increase the involvement of students in the life of EMJMD courses.

Conclusion

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Appendix 1
List of indicators
measured through
the CQSS survey

Background information: demographic data, professional status, EMJMD, and universities attended (including dates and if respondents had received scholarship).

Supporting Services: for family relocation; to accommodate disabilities; with financial, health, or inappropriate conduct/sexual harassment issues; information received before the beginning of EMJMD (e.g., enrolling in classes, standards of behavior, timetable, course content); orientation activities at the beginning of EMJMD; support from academic and administrative staff, student unions, tutors, specific unities (international office, library, etc.). Additionally, some items only addressed each university: accommodation, visa, banking, language courses, health insurance, living expenses, local transportation, and extracurricular activities.

Teaching, Learning, and Supervision: workload modules, skills development, use of innovative technology in lectures, use of student-centered learning strategies, academic support, and advice from lecturers (particularly support from thesis supervisors).

Assessment and feedback: module assessment, evaluation and grading criteria, feedback on evaluation, student feedback mechanisms, course coordinator availability and helpfulness, and information about certificates and transcripts.

Internship/Fieldwork, Personal development, Career: respondents were asked to evaluate their experience during their Internship/Fieldwork (e.g. duration, supervision, logistic support, and value for career). Furthermore, they rated the contribution of their EMJMD for their personal development (preparation for career/job market, soft skills, and counselling).

Satisfaction: academic satisfaction, overall EMJMD satisfaction.

EMA: knowledge about EMA (including the role of EMA course representatives), suitability/quality of the CQSS.

Socio-Economic and Gender Inequalities in Educational Trajectories upon Completion of Lower Secondary Education in Russia

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Abstract. Using longitudinal data based on the panel study *Trajectories in Education and Career* (TREC), we analyse the probabilities of entering 10th grade for boys and girls as well as for students with different socio-economic backgrounds. In 2012, 59% of pupils chose the academic track and continued their education in 10th grade upon completion of 9th grade, while others moved to vocational education. Girls are more likely to enter the academic

track than boys. The probability of entering the academic track is considerably higher for students from more educated and wealthier families. We analyse total inequality in the educational transition as a sum of primary and secondary effects where primary effects refer to inequalities in performance and secondary effects refer to inequalities in making the transition while controlling for performance. We find strong secondary effects of parental education and wealth on making a transition to the academic track. There is no evidence of secondary effects of gender. The paper discusses mechanisms of gender and socio-economic inequalities in the transition to 10th grade and makes policy recommendations aimed at reducing social inequality in education.

Keywords: gender inequality, social inequality in education, educational transition, primary and secondary effects, longitudinal study.

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The transition Russian school students make after 9th grade is the first “fork” that largely determines subsequent educational trajectory. After middle school, students are free to choose between high school (grades 10 and 11) and vocational education (trade schools, lyceums, technical colleges). Opting for high school is the most popular way of getting higher education (“academic track”), which provides for a tan-

Research sponsored by the HSE Basic Research Programme uses data from the panel study *Trajectories in Education and Career* (TREC): <http://trec.hse.ru/>

gible competitive edge in the labor market. Students who move to 10th grade will likely, although not always, enter a university and obtain a higher education. Conversely, the transition to initial and secondary vocational schools (“nonacademic track”)¹ implies learning trades that do not require a higher education. Traditionally, initial vocational education institutions have supplied industrial workers since the Soviet era, and this pattern is still partly preserved. The most widespread trades in secondary vocational education include accountant, cashier, nurse, preschool teacher, elementary school teacher, machinist, driver, fitter, and mechanic [Education in the Russian Federation, 2014].

Some trade school, lyceum, or technical college graduates also may receive a higher education: according to official statistics, 35% of secondary vocational school graduates continued their education in universities in 2008 [Shugal, 2010]. Meanwhile, high school concentrates the most capable students (as we will see below), performing much better than those who choose the nonacademic track. Students who opt for 10th grade enter the most selective, prestigious, and high-quality universities in the future.

Therefore, the academic track provides students with considerable advantages in terms of further education and employment.

This paper seeks to analyze social and gender inequality in the educational transition to 10th grade. The process is far from universal: a selection takes place, which always creates conditions for inequality. As we will show below, this is exactly the case, and there is both gender inequality and inequality based on family social background.

First, we examine the national statistics on changes to the number and proportion of students going to the tenth grade over the last 20 years. Next, we give a short description of educational inequality research methods used in the sociology of education and analyze studies on educational inequality in Russia. Then, we raise research questions, provide an empirical basis (the panel study *Trajectories in Education and Career*), and describe the statistical methods we apply for data analysis. Afterwards, we present the results of this analysis. The paper ends with discussing the results in light of educational inequality theories and Russian education policies.

1. Educational Transition after 9th Grade According to National Statistics

We first examine the dynamics of 10th grade enrollment over the last 20 years according to official statistics. Figure 1 shows the dynamics of the number of students who moved from 9th grade to 10th grade. The sharp decline in the number of students between 2003 and 2009 is due to the baby bust of the late 1980s—early 1990s. In 2013 about 1,200,000 students finished 9th grade, of which 670,000 moved to 10th

¹ The new Law On Education that was adopted in 2012 abolishes initial vocational education, making it part of secondary vocational education as “worker and employee training programs”.

grade, as compared to 2,100,000 and 1,400,000 in 2000, respectively. The age cohort shrank nearly twice in thirteen years. The birth rate in Russia was at its lowest in 1999, and teenagers of the resulting cohort finished 9th grade in 2013. It has been increasing since 2000, so the number of 9th-graders will only be growing in the years to come. However, growth will be slow, and the cohort will not reach the level of 2000 within the next 14 years.

Figure 2 demonstrates the proportion of 9th grade graduates who progressed to 10th grade, both for Russia as a whole and broken down by urban and rural schools. About 67% of students moved from 9th to 10th grade in the 2000–2001 academic year. From then on, the proportion decreased to 57% in 2013, with the absolute number of students who continued their education in 10th grade hitting its low for the whole post-Soviet history. The decline is particularly noticeable in 2007–2009. The factors of these dynamics are yet to be investigated, but they must have included the introduction of the Unified State Exam (USE), which probably encouraged some students and their parents to use the opportunity to enter a university with no examinations after obtaining secondary vocational education.

As it follows from Figure 2, the proportion of students progressing to 10th grade reduced more dramatically in rural schools than in the city. The values were pretty much the same in 1999; the gap appeared in 2000 and grew continuously to reach over 10% in 2013. Apparently, this dramatic decline is related to the rural school restructuring process that was launched in 2001. The reform was designed, inter alia, to reconfigure complete secondary education institutions into those of basic (elementary + middle) general education, i. e. to transform eleven-year schools into nine-year schools². As a result, rural students opted for secondary vocational education or entered 10th grade in nearby towns.

Social differences in educational outcomes are a hot-button issue in the sociology of education. They exist between genders, social classes and ethnic groups and may manifest themselves in the level of performance, examination scores and the probability of transition at different stages of the educational path. We will address gender and class differences below, leaving the ethnic aspect beyond the scope of this article.

2. Social Inequality in Education: A Short Overview of Theories and Studies

² See the Resolution of the Government of the Russian Federation No. 871 “On Restructuring Rural General Education Institutions” from 17 December 2001: <http://bazazonov.ru/doc/?ID=1393596>; for an overview of the reform concept, see the website of Uchitelskaya gazeta: <http://www.ug.ru/old/02.51/t21.htm>.

- Middle school graduates
- Enrolled in 10th grade

* The data on 9th grade graduates only covers state and municipal schools.

Source: Education in the Russian Federation 2006; 2010; 2012; 2014: Statistical compendia (Moscow: NRU HSE).

Figure 1. 9th grade graduation and 10th grade enrollment, 1995–2013*

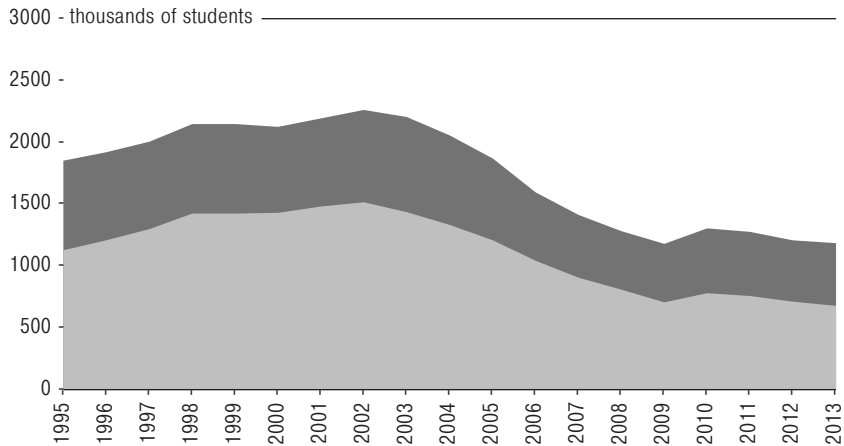
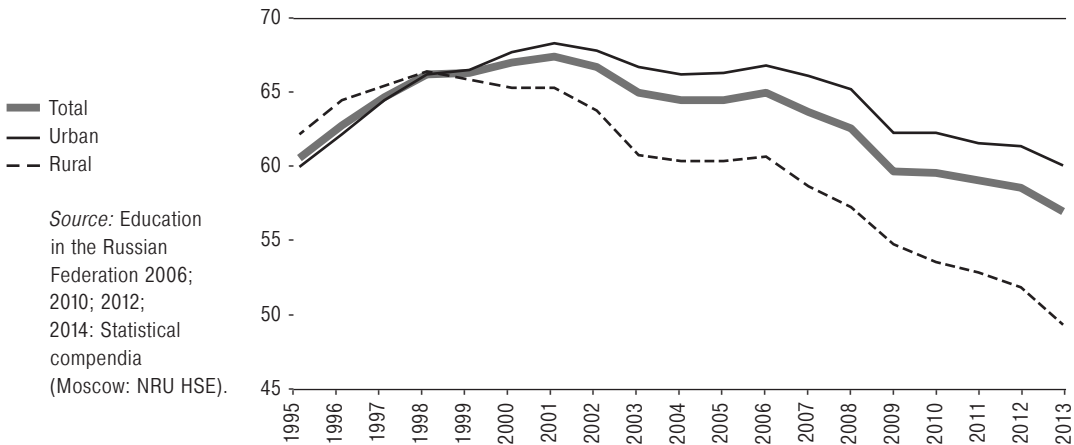


Figure 2. The proportion of 9th grade graduates enrolled in 10th grade



Source: Education in the Russian Federation 2006; 2010; 2012; 2014: Statistical compendia (Moscow: NRU HSE).

2.1. Gender differences in educational outcomes

In the past, the number of male students used to exceed that of female students at virtually all stages of education. Education, particularly higher education, was practically inaccessible for women in most developed countries up to the 19th century. The situation began to change in the 20th century, most noticeably from the 1960s, and today girls perform better on average in education than boys nearly in all countries [Buchmann, DiPrete, MacDaniel, 2008]. Girls in the US, UK, and most other countries enter universities more often than boys [DiPrete, Buchmann, 2013]; they have higher academic achievements in school and less disciplinary problems. The results of national and international tests demonstrate that girls on average perform much better in reading tests and succeed in mathematics equally

to boys in most cases (although the proportion of boys among the top performers in mathematics is higher) [Halpern et al., 2007; Lindberg et al., 2010; Bessudnov, Makarov, 2015]. As a result, the male dominance in education was replaced by a slight though obvious dominance of women almost everywhere. The growing superiority of women in their twenties and thirties in terms of higher education and access to relevant occupations will certainly entail further changes to gender roles and gender inequality in the labor market.

For the purposes of this article, we will primarily focus on gender differences in educational outcomes in school. Why do girls perform on average better than boys? Several possible reasons are identified in an expert overview of studies on gender inequality in education [Buchmann, DiPrete, MacDaniel, 2008]. First, there may be biologically induced differences in both cognitive and non-cognitive abilities between men and women. The majority of studies show that the cognitive skills of men and women differ very little, if at all. However, academic achievement also requires non-cognitive skills, such as motivation, self-control, persistence, etc. [Gutman, Schoon, 2013]. These qualities are not necessarily pre-determined biologically, but the differences in hormonal development of boys and girls may play a part. Non-cognitive factors should be taken into account when analyzing gender differences in academic performance, which is proved by the fact that the female dominance over boys in grades is usually more significant than the differences in standardized test scores.

Second, gender stereotypes and attitudes affecting the perception of school and learning play a great role. On average, girls are less likely to display negativity towards school and teachers, while boys, in particular those from poorer and less educated families, may consider diligence in learning inappropriate and conflicting with the values and attitudes accepted in their community. Boys who take studies too seriously risk being stigmatized (for example as “nerds”) and lose the respect of an influential group of peers [Legewie, DiPrete, 2012; DiPrete, Buchmann, 2013]. The desire to avoid damage to one’s status or reputation reduces the motivation for learning.

Third, gender differences in educational outcomes in school may be generated by parents who treat the education of boys and girls differently and thus guide them towards different educational and career trajectories. Finally, one cannot ignore the interaction of students with schoolteachers, most of whom are women. A series of studies have been conducted to examine the influence of teacher gender on differences in performance between boys and girls, though their results are ambiguous. One of them revealed no correlation between teacher gender and gender differences among students, while others produced evidence of higher performance among girls educated by female teachers (see the overview in [Buchmann, DiPrete, MacDaniel, 2008]).

2.2. Socioeconomic aspects of inequality in educational outcomes

Children from well-educated and affluent families perform better in school and obtain higher education more often. The criteria for discriminating between social backgrounds are not our fundamental concern in this study. It may be parental occupation (in terms of which social class is most often operationalized in sociology), parental education, or family income—results will be more or less the same anyway. Russian researchers of social inequality in education rely first of all upon works by Pierre Bourdieu [Bourdieu, Passeron, 1970], but there is also an extensive Anglo-American tradition of empirical studies in this field going back to the Coleman Report [Coleman et al., 1966]. A large-scale survey of over 600,000 people, carried out under the guidance of the famous American sociologist James Coleman, described the correlation between socioeconomic status and student achievement.

There is an extensive body of literature on socioeconomic inequality in education (for an overview of quantitative research from 1990 to 2005, see [Breen, Jonsson, 2005]), so we will only touch upon the key issues and theories here. As with gender, socioeconomic inequality in education may be analyzed from the perspective of student performance and from that of the probability of transition at different stages in education.

Fundamental changes to the education system occurred in the 20th century, with the massification of secondary education. A question was raised: how is the correlation between family background and the education tier changing as the latter becomes more accessible? An analysis of data on four age cohorts in Ireland produced a theory of maximally maintained inequality (MMI), which describes a transfer of inequality in education from lower to higher tiers [Raftery, Hout, 1993]. According to this theory, when a particular stage of education becomes accessible to all, the effects of social background diminish at this stage. With the expansion of secondary education, for instance, social background does not really affect the completion of secondary education anymore, but becomes an important factor in obtaining a higher education. In other words, when school education becomes accessible to all, social inequality is forced out to the next stage in education.

Of course, inequality may apply not only to a stage in education but also to education quality. It is not only the completion of school education in and of itself that matters, but also the type of school, the quality of teaching, the social composition of the student body, etc. The theory of effectively maintained inequality takes into account not only transitions between stages of education, but also qualitative differences in curriculum at universally accessible levels [Lucas, 2001]. Privileged families use various ways of making their children more advantaged. If the education tier is not generally accessible, privileged classes will use their resources to get their kids to that level. If, however, the level is easily available to all, the re-

sources will be invested to provide a higher quality of education at that level.

Richard Breen and John H. Goldthorpe approach educational decisions made by students and their families from a rational choice perspective [Breen, Goldthorpe, 1997]. According to their model, parents and children consider the following factors before making educational decisions: first, the cost of educational transition, including the cost of education and lost earnings; second, the chances for success in the next tier, represented by the likelihood of passing final examinations, for example; third, the value and importance of a particular tier of education for the family and the student. The model represents students and their parents as rational actors choosing between available educational options based on their assessment of costs and benefits.

Why do children from more socially advantaged families show better academic performance on average? Education researchers allow for several possible reasons. To avoid dwelling on their tenability, we will just specify them as they are classified in the relevant literature [Jackson, 2013; Erikson, Jonsson, 1996]. First, the difference between children may be explained by cognitive and non-cognitive characteristics inherited from parents. Ample human behavioral genetics research from recent decades makes clear that many of cognitive and non-cognitive skills are largely inherited genetically [Plomin et al., 2013]. More educated parents with higher cognitive abilities will likely have more capable children. However, many sociologists do not recognize the role of genetic factors in explaining social inequality in educational outcomes. Meanwhile, genetics contend that even if inherited qualities contribute to inequality, they do not provide an ultimate explanation and leave space for other reasons.

Second, a significant role is played by the financial, cultural, and social family resources available to children (parental influence, social environment, access to books and other education resources, understanding the importance of education). Third, children in more educated and affluent families have better food, which makes them on average healthier. Fourth, teachers and schools may favor children from advantaged families directly or indirectly due to the linguistic and cultural practices they manifest, even if such practices are not directly associated with the learning process. Finally, psychological patterns matter. Children from less educated families may have less confidence in their abilities even if there are no obvious reasons for this. (For a more detailed analysis of these mechanisms and references to relevant literature, see [Jackson, 2013])

Obviously, social inequality in academic performance is closely related to the probability of making educational transitions. Better performing students are more likely to move to the next stage in education, whether from 9th to 10th grade or from high school to higher education. If children from families that are more socially privileged perform better, then they will more likely enter a university and obtain

a higher education. Yet is it performance only that explains the difference between social classes in the probability of achieving a higher level of education?

The correlation between academic performance and educational transition is better conceptualized if we discriminate between the primary and secondary effects of social background on educational trajectories. In the 1970s Raymond Boudon was the first to analyze the reproduction of social inequality in education as two interrelated but conceptually different processes [Boudon, 1974]. First, social background determines educational outcomes, for example in the form of academic performance. We gave a brief overview of this mechanism above. Boudon describes this correlation as the primary effects of social stratification on educational attainment. Second, with performance held equal, social background may affect educational decision-making. Students from more affluent and/or educated families may be more likely to continue schooling than their peers from less advantaged families, even if their capabilities and educational achievements are more or less the same. Boudon refers to this phenomenon as the secondary effects of social stratification on educational attainment. Secondary effects apply when students and their parents choose an educational trajectory. This choice is determined by preferences as to the desired level of education, costs associated with transition to a higher level, and policies enforced by education institutions and other players in the education market.

Boudon's theory was "remarkably disregarded" [Jackson et al., 2007. P. 212] for a long time, but more and more empirical studies on inequality in education have been discriminating between primary and secondary effects lately. A statistical method was developed, allowing for the identification of primary and secondary effects of social inequality in educational transitions [Erikson et al., 2005]. A recent comparative study using this method analyzes primary and secondary effects in educational transition to different levels for the US and several European countries [Jackson, 2013]. Secondary effects appear to have a tangible impact on educational decisions in all countries, just as primary effects do. The primary and secondary effects approach can also be used to explore gender and ethnic inequality in education (see, for instance, [Jackson, Jonsson, Rudolphi, 2012]).

Based on a retrospective survey conducted in 1991, Theodore P. Gerber and Michael Hout proved there had been considerable social class inequality in access to education in the USSR, despite the proclaimed ideology of total equality [Gerber, Hout, 1995]. As in other countries, men originally dominated women in educational transitions (notably those to higher education), but their dominance had faded away by the 1960s—1970s. In the 1990s, social inequality increased for transitions from 9th to 10th grade, but remained the same for transitions from high school to university [Gerber, 2000].

Soviet researchers began investigating educational and career trajectories of young people in the 1960s [Shubkin, 1970]. A longitudinal study was performed in Novosibirsk Oblast in 1998–2008, its samples including graduates from high school, secondary, and initial vocational education institutions [Konstantinovskiy et al., 2011; Cherednichenko, 2014]. Three waves of research collected information on the social background of respondents, their educational and career plans, and actual educational trajectories. It was established that the type of education already received (high school, secondary, or initial vocational education) largely affects subsequent educational and career trajectories. Graduates from initial vocational training schools get blue-collar jobs and have little career advancement opportunities. Graduates from secondary vocational training schools fall into two groups of approximately equal size: some opt for higher education, while others get employed as workers, engineers, or technologists, but often have to change their occupation later. Completion of high school provides more successful educational and career trajectories, as it is traditionally associated with university education [Cherednichenko, 2014]. Although the study did not cover transitions from 9th to 10th grade, the results obtained are a gauge of socioeconomic inequality in student distribution. Students of secondary and particularly initial vocational training schools mostly come from families with low educational resources. The lower the social and occupational status, the more likely a student will opt for a trade school [Konstantinovskiy et al., 2011].

A comprehensive analysis of the first educational transition (i. e. the choice of trajectory after 9th grade) requires data to be collected before and after such transition. Regional longitudinal studies initiated as part of the panel study *Trajectories in Education and Career (TREC)* and conducted by the Higher School of Economics in Yaroslavl Oblast and Tatarstan revealed that family educational resources (and parental occupational status to a lesser extent) predetermine the educational plans of 9th grade graduates. The higher the educational, social, and occupational status of parents, the more likely their children will choose the academic track by progressing to 10th grade. Also, children from less educated families feel more uncertain about their future educational trajectories [Popov, Tyumeneva, Kuzmina, 2012].

The second wave of the study of school students in Yaroslavl Oblast and Tatarstan allowed researchers to analyze how the family background and personal characteristics of students (educational attainment, intentions to pursue education, and ambition) correlate with their actual educational trajectories after 9th grade [Ibid.]. Expectedly, young people from low-educated families are more likely to go to initial or secondary vocational education institutions after 9th grade. Personal educational achievements and intentions concerning further education mediate family effects and may weaken or strengthen them (for example, well-performing students from less educated fam-

ilies tend to progress to 10th grade). No gender differences in family effects on educational decisions were revealed.

Transition from 9th grade to a secondary vocational education institution and then to a university as a special educational strategy became the subject of research based on a survey among 9th graders in St. Petersburg, Leningrad Oblast, and Moscow Oblast and secondary vocational education students in St. Petersburg [Alexandrov, Tenisheva, Savelyeva, 2015]. The strategy is quite popular among 9th grade graduates, as they can learn a trade and enter the labor market much earlier. Besides, it also makes higher education more accessible, serving as a safety cushion in case of failure. Introduction of the USE produced another motivation for choosing this educational trajectory: the risk of failing the exam and not receiving a high school diploma. Researchers are convinced that this strategy is typical of average performers, usually from general-purpose schools. Their families have limited resources and a lower social status than those who opt for the academic track, yet a higher status than those who plan on entering the labor market after obtaining a secondary vocational education. Parents of such students often have an initial or secondary vocational education, and they are less familiar with how the higher education system works. The authors come to a conclusion that families choosing this educational strategy try to improve their social status.

3. Research Questions

This paper seeks to explore the inequality in transition from 9th to 10th grade between boys and girls and between students from families with different socioeconomic resources. The logic of the research is as follows. First, we determine the difference in probabilities of making an educational transition between the relevant groups based on the panel study results. Following the international tradition described above, this difference may be illustrated as the sum of primary and secondary effects.

We define primary effects as the differences in academic performance between the groups. For instance, girls on average perform better than boys, and children from more educated families often have higher academic achievements than those from lightly educated families. Secondary effects are understood as the differences in probability of making an educational transition between students from different groups showing similar academic performance. For example, if we take a group of boys and a group of girls who finished 9th grade with similar achievements, will there be a difference in the probability of their progress to 10th grade? If there is any disparity, it cannot be explained by inequality in academic achievement. In this case, we are talking about an educational choice that is made regardless of previous attainment. The same logic applies to socioeconomic inequality research but in terms of families with different levels of education or income. Therefore, the second objective of this study is to explore the

secondary effects of gender and socioeconomic family status as factors influencing the probability of making a transition to high school.

We do not intend to divide the overall gender of social inequality in the probability of making an educational transition into primary and secondary effects to compare the proportions. Some new statistical methods have been developed over the last decade to tackle this issue, which is certainly of great interest. However, it is technically sophisticated, and going into it might distract us from the main problem. Instead, we describe the cumulative inequality between the groups (the sum of primary and secondary effects) and then determine if there are any secondary effects.

In other words, the article answers the following questions. Are there any differences in the probability of progressing to 10th grade between boys and girls and between children from more and less educated or advantaged families? If there are any, will they persist after we allow for the differences in academic performance and test scores between the groups?

The empirical basis is represented by the national TREC study, which has been conducted since 2011 by the HSE Institute of Education [Bessudnov et al., 2014; Kurakin, 2014]. The sample of this longitudinal study was selected in 2011 for the Trends in International Mathematics and Science Study (TIMSS) and included boys and girls who were 8th graders during the 2010–2011 academic year. Regions were selected at the first stage and schools at the second stage to provide a representative sample³. All in all, the questionnaires and tests covered 4,893 students from 210 schools in 42 regions of the Russian Federation. The study assessed the mathematical and science competencies of 8th graders and surveyed students, their teachers, and school administrators.

The school students engaged in that study formed the original sample of the HSE longitudinal study. The first wave took place in 2012 and surveyed participants of TIMSS2011 (3,377 9th graders) and their parents. Part of the respondents were not surveyed because some schools or parents did not agree to participate or due to certain organizational issues. The same students were covered by the Programme for International Student Assessment (PISA) as a duplicate sample in spring 2012. Thus, a unique panel was formed to use the data of two different international testing systems.

4. Data and Methods

³ The sample was prepared by the Education Quality Assessment Center of the Institute for Strategy of Education Development, Russian Academy of Education, and approved by the TIMSS International Study Center, Boston College, USA. A detailed description of the sample is available in TIMSS2011 Characteristics of National Samples: http://timssandpirls.bc.edu/methods/pdf/T11_Characteristics.pdf

The second wave of longitudinal research was conducted in Fall 2013. By then, the respondents had already finished 9th grade and gone on to the next level of education. Some of them continued in the same school or another school, others became students of initial or secondary education institutions. In order to cover as many 9th grade graduates as possible and find out about their current place of studies, we collected information on their further educational trajectories from each school. Afterwards, we followed up by surveying students.

Our analytical sample includes respondents with data from all waves of research (the first and second waves of the longitudinal study, TIMSS and PISA), which is 3,268 students, or 67% of the original TIMSS sample. To adjust for possible dropout-related offsets in statistical assessments, we use weight coefficients created as described in [Bessudnov et al., 2014].

The place of study after 9th grade is the dependent variable in our statistical analysis (based on the results of the second wave survey). We treat this variable as dichotomous: it takes on a value "1" if a student progressed to 10th grade (either in the same school or another day school) and "0" if a student chose any other educational trajectory (initial or secondary vocational education, evening high school, no further education at all). The independent variables include gender, parental education and family income (from the first wave parent survey), region, 8th grade final scores in mathematics, Russian, and other subjects (from the first wave student survey), State Final Examination (SFE) points in mathematics and Russian (based on the second wave data), and PISA and TIMSS scores in mathematics, reading, and science. The descriptive statistics for the key data is given in Table 1. It presents sampled mean values or proportions and the 95% confidence interval to show the dispersion of the most probable values for the general population, i. e. all Russian 9th graders.

Below we describe the logic of statistical analysis for assessment of gender inequality in the probability of educational transition. The same logic applies to the analysis of socioeconomic inequality.

At the first stage, we compare the proportions of girls and boys who progressed to 10th grade. This simple analysis allows us to answer the first question raised in this research. To answer the second one, we compare the probabilities of transition to 10th grade between boys and girls, while statistically controlling the effects of academic performance and test scores. We use linear regression, which is the basic statistical analysis method applied in social sciences. The dependent variable is dichotomous, and most statistical analysis textbooks recommend using logistic or probit regression in cases like this. However, using ordinary linear regression for dichotomous dependent variables is not a mistake under certain circumstances. This method is known in econometrics as linear probability model [Wooldridge, 2010. P. 454–457], and it is also used by some sociologists [Mood, 2010]. Despite a number of restrictions, the method has a distinct advantage of sim-

Table 1. **Empirical basis of research**

	Complete sample, 3,268 students	Academic track (10th grade), 1,960 students	Nonacademic track (vocational/trade schools), 1,308 students
Proportion or mean value [95% confidence interval]			
Gender			
Boys	50% [48; 52]	47% [43; 50]	55% [52; 59]
Girls	50% [48; 52]	53% [50; 57]	46% [41; 48]
8th grade final scores in Russian			
2	< 1% [0; 0.1]	0%	< 1% [0; 0.1]
3	44% [41; 47]	27% [25; 30]	66% [63; 70]
4	43% [40; 45]	56% [53; 58]	26% [23; 29]
5	9% [8; 11]	14% [12; 17]	3% [2; 5]
N/A	4% [3; 5]	3% [2; 4]	5% [3; 6]
8th grade final scores in algebra			
2	< 1% [0; 0.1]	0%	< 1% [0; 0.1]
3	47% [44; 50]	29% [27; 33]	71% [67; 74]
4	39% [36; 41]	51% [48; 55]	22% [19; 25]
5	11% [9; 12]	17% [14; 19]	3% [2; 5]
N/A	4% [3; 5]	3% [2; 4]	5% [3; 6]
Average PISA score			
in mathematics	488 [480; 497]	520 [511; 529]	446 [438; 455]
in science	487 [479; 495]	514 [506; 523]	451 [443; 458]
in reading	469 [460; 477]	501 [492; 510]	426 [418; 434]
Average TIMSS score			
in mathematics	538 [530; 546]	566 [559; 574]	500 [490; 509]
in science	541 [534; 548]	565 [559; 572]	509 [500; 518]
Parental education			
Both parents have higher education	14% [12; 18]	21% [18; 25]	4% [3; 6]
Parent 1: higher education Parent 2: no higher education/N/A	26% [24; 28]	31% [29; 34]	18% [16; 21]
Both parents have no higher education	38% [35; 41]	31% [27; 35]	47% [43; 51]
Parent 1: higher education Parent 2: N/A	19% [17; 21]	13% [11; 15]	27% [23; 31]
N/A	3% [2; 5]	3% [2; 6]	3% [2; 5]

	Complete sample, 3,268 students	Academic track (10th grade), 1,960 students	Nonacademic track (vocational/trade schools), 1,308 students
	Proportion or mean value [95% confidence interval]		
Family income			
below 20,000 rubles/month	40% [36; 44]	33% [28; 37]	50% [45; 55]
20,000–29,000 rubles/month	24% [22; 26]	23% [20; 26]	25% [22; 29]
30,000–49,000 rubles/month	18% [16; 20]	21% [19; 24]	13% [11; 16]
50,000–79,000 rubles/month	7% [5; 9]	9% [7; 12]	4% [3; 6]
> 80,000 rubles/month	4% [3; 5]	5% [3; 8]	2% [1; 3]
N/A	8% [6; 10]	9% [7; 12]	6% [4; 8]

Note. All proportions and mean values were calculated with allowances made for weight coefficients.

plicity of regression coefficient interpretation. We chose it to simplify the presentation of the results and avoid the unnecessary technical complications inevitably entailed by nonlinear models.

For each of the three variables (gender, parental education, family income), we provide four regression models (five for the “family income” variable). The dependent variable is dichotomous in all models, taking on a value of “1” if a student chose high school and “0” if they did not. The independent variable in model 1 is either gender, or parental education, or family income. We also statistically control the regions of schools. Thus, model 1 reflects the difference in probability of transition to 10th grade between students of different genders and from families with different socioeconomic status. Model 2 additionally controls 8th grade SFE scores in algebra, geometry, Russian language, literature, history, physics, chemistry, and biology. These scores provide a cumulative assessment of student attainment. Therefore, model 2 answers the question if there is a difference in the probability of transition to high school between *similarly performing* students of different genders and from families with different socioeconomic status. Model 3 controls TIMSS scores in mathematics and science and PISA scores in mathematics, science, and reading, instead of academic achievements. Students do not know their test scores, so the latter cannot affect their educational decisions. Model 3 answers the question if the difference in probability of educational transition is preserved between groups with similar TIMSS and PISA scores, which assess the general education level of students. Finally, model 4 controls for both academic performance and test scores.

In our sample, 57% of students progressed to 10th grade (95% confidence interval (CI): 55–59%): 50% remained in the same school, and 7% changed their school. 43% opted for another educational path (95% CI: 41–45%), mostly secondary (33%) and initial (6%) vocational education. 3% of respondents reported to have no current enrollment, and 1% were going to evening high schools. According to official statistics, 59% of 9th grade graduates were enrolled in 10th grade in 2012. This falls within the confidence interval of the survey value and confirms the quality of our sample.

Quite predictably, students choosing the academic track have higher achievements and knowledge than those who opt for trade schools and colleges (see Table 1). Among vocational school students, 66% had Cs in Russian and 71% had Cs in algebra in 8th grade. Among 10th graders, the proportions of Cs in Russian and algebra are 27% and 29%, respectively.

We can also compare PISA and TIMSS scores in the two groups. Due to some specific features of the tests—TIMSS is closer to the Russian school program—Russian students scored much better in TIMSS than in PISA. The 2012 average scores in mathematics in OECD countries were 494 for PISA [OECD, 2014] and 500 for TIMSS (due to a different scale) [Mullis et al., 2012]. TIMSS scores of Russian school students are substantially higher than average (538 in mathematics and 541 in science). PISA scores are lower: 488 in mathematics, 487 in science, and 469 in reading. Both tests revealed considerable differences between students choosing the academic and nonacademic track. Thus, the average TIMSS score in mathematics among 10th graders was 566, which approaches the average score in Japan, while students who opted for vocational education scored 500 on average, which is more comparable to Italy. PISA scores in reading look less optimistic: the group of students who progressed to 10th grade showed results close to those in Norway and the UK (501), while students who entered vocational schools scored comparably to the average scores in Mexico and Montenegro (426). However, one should not forget that scores of children from different social classes also differ in those countries.

61% of girls and 53% of boys continued education in 10th grade. The difference between the two groups is statistically significant at the 99% level, meaning that girls stay in school much more often than boys and are much less likely to choose vocational education. Table 2 represents four regression models to analyze the difference in probability of transition to high school between boys and girls.

In fact, model 1 echoes the results of comparing the proportions of boys and girls who progressed to 10th grade (with the only difference being that that model 1 statistically controls the regions of schools). The 0.09 regression coefficient means that the probability of transition to high school is higher by 9% for girls than for boys. The coefficient is statistically significant at the 99% level. Thus, chances are extremely

5. Analysis Results

5.1. Gender

Table 2. Results of gender regression analysis

Variable	Model 1 (base)	Model 2 (control for academic performance)	Model 3 (control for PISA and TIMSS scores)	Model 4 (control for all factors)
	Coefficient [95% CI]			
Gender (0 for male, 1 for female)	0.09*** [0.05; 0.13]	-0.03 [-0.07; 0.01]	0.06*** [0.02; 0.10]	-0.02 [-0.06; 0.02]
<i>n</i> (number of students)	3,268	3,268	3,268	3,268

Note. Linear probability models. The dependent variable is a dichotomous variable indicating progression to 10th grade of day school. All models allow for weight coefficients and clusterization of students at the school level. All models control for the region of a school. Model 2 also controls SFE scores in mathematics and Russian, as well as year-end final grades in algebra, geometry, Russian, literature, history, physics, chemistry, and biology. Model 3 controls TIMSS scores (in mathematics and science) and PISA scores (in mathematics, science, and reading). Model 4 includes all predictors of models 2 and 3. Because PISA and TIMSS scores are represented as five plausible values, we use an iterative algorithm to assess models 3 and 4 the way it is used in the *pv* module for Stata [Macdonald 2014]; the module was reprogrammed so models could include five variables with plausible values. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

low that the sample would show such result randomly and there is actually no difference between boys and girls in the total population. The 95% confidence interval for the coefficient is [0.05; 0.13], meaning that we can be 95% sure that the real difference between boys and girls in the total population is somewhere between 5% and 13%.

Model 2 additionally controls academic performance. Unlike in model 1, the regression coefficient shifts and becomes statistically insignificant. Therefore, if we compare boys and girls with similar academic achievements and SFE scores, on average the difference in probability of their transition to high school will be nearing zero.

How do we explain the difference between the results in models 1 and 2? On average girls perform better at school and get higher grades. Most likely, this is the reason why they progress to high school more often instead of turning to vocational education. However, when we compare boys and girls with similar academic achievements, there is no gender discrepancy anymore. Thus, we observe general gender inequality in the probability of educational transition—but no secondary effects.

Model 3 controls TIMSS and PISA scores but not school grades or SFE scores. Gender-related differences in the probability of educational transition is preserved in this model, with girls being 6% more likely to progress to 10th grade than boys with similar scores.

Where does the difference between models 2 and 3 come from? Why does the difference in probability of transition between boys and girls virtually disappear when we control for school performance and persist when we control for international tests? TIMSS and PISA mostly test skills in mathematics and science but not in humanities (even the PISA reading test is focused on assessing logical analysis skills). Meanwhile, model 2 controls for grades in Russian, literature, and his-

tory. Since girls normally perform better than boys in these subjects, we can suggest that the higher probability of their transition to high school is explained by better knowledge of the humanities, which is not allowed for in model 3. However, such an explanation would be incorrect: the coefficients will remain the same if we drop performance in the humanities from model 2 and only control for achievements in mathematics and science. Thus, the difference between models 2 and 3 cannot be explained by model 3 ignoring humanities skills.

Presumably, this difference occurs because the level of knowledge is not the only factor affecting performance. Important roles are also played by discipline, assiduity, homework commitments, student-teacher relationships, etc. With similar levels of knowledge (assessed by international tests), girls on average get higher grades than boys most likely due to these additional factors. For instance, the average TIMSS score in mathematics was 586 for boys and 555 for girls among students who reported to have Bs in algebra and geometry (average PISA scores for the same students are 541 for boys and 503 for girls). At the same time, female B students in Russian and literature scored 13% higher than male B students in the PISA reading test.

It should also be taken into account that year-end grades and SFE scores were entered into the database as reported by students themselves. If boys are more likely to overestimate their grades than girls, then this could also explain the difference between the results of models 2 and 3. However, we are unable to test this hypothesis, as we do not have objective data on grades.

Finally, model 4 includes all the factors allowed for in models 2 and 3 (i. e. both academic performance and test results). Its results are virtually the same as in model 2, which means that taking into account international tests does not influence the results obtained after analyzing school performance only (year-end grades and SFE scores).

Table 3 displays the results of analyzing the probability of transition to 10th grade for students from families with different educational backgrounds. 87% of students from families where both parents had higher education continued their studies in 10th grade. The proportion is 70% for children with only one highly educated parent. If neither parent has higher education, the probability of transition to high school drops to 47%. Finally, in families where one parent has no higher education and no information is available on the other (these are most often single mothers without a higher education), only 39% of children progress to 10th grade. Thus, we can see a considerable discrepancy in the probability of making a transition to 10th grade between students from families with different levels of education.

Quite often, this difference is explainable through different levels of academic attainment. Children from educated families perform better due to both cognitive and non-cognitive abilities inherited from their parents. However, when we statistically control for academic per-

5.2. Parental education and family income

Table 3. Results of parental education regression analysis

Variable	Model 1 (base)	Model 2 (control for academic performance)	Model 3 (control for PISA and TIMSS scores)	Model 4 (control for all factors)
	Coefficient [95% CI]			
Parental education (base category: both parents have no higher education, 38%)				
Both parents have higher education (14%)	0.36*** [0.30; 0.42]	0.16*** [0.10; 0.22]	0.19*** [0.13; 0.26]	0.14*** [0.08; 0.20]
Parent 1: higher education Parent 2: no higher education / N/A (26%)	0.20*** [0.15; 0.25]	0.08*** [0.04; 0.13]	0.12*** [0.07; 0.17]	0.07*** [0.03; 0.12]
Parent 1: no higher education Parent 2: N/A (19%)	-0.09*** [-0.15; -0.02]	-0.05* [-0.10; 0]	-0.06* [-0.12; 0]	-0.04 [-0.10; 0.01]
N/A (3%)	0.05 [-0.09; 0.19]	-0.002 [-0.11; 0.11]	0.01 [-0.11; 0.14]	-0.01 [-0.11; 0.10]
<i>n</i> (number of students)	3,268	3,268	3,268	3,268

Note. Models are the same as in Table 2. All models additionally control for student gender. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

formance (model 2), the difference between students from more and less educated families becomes less obvious but never disappears. 9th graders whose parents both have higher education are 16% more likely to make it to 10th grade than students with similar final grades and SFE scores whose parents have no higher education.

Year-end grades and SFE scores are only a rough and approximate measure of the level of knowledge. However, when we control TIMSS and PISA scores as a more unbiased instrument (model 3), the difference between children from families with different educational backgrounds becomes even more evident. Students who have parents with a higher education are 19% more likely to continue schooling than their peers whose parents have no higher education, even if their PISA and TIMSS scores are identical. Moreover, the model controlling both academic performance and international test results (model 4) still shows a substantial inequality between students from families with different levels of education

Therefore, while there are no secondary gender effects in educational transitions, the analysis of groups with differing parental education revealed considerable secondary effects. Even with similar levels of attainment and knowledge, the probability of moving to 10th grade is much higher for students from more educated families.

Parental education is not the only way of measuring a family's socioeconomic status. Table 4 presents the models described above for children grouped by family income. Parental education and family income are correlated, though moderately: Spearman's rank correlation coefficient is 0.36 in our sample. The analysis shows similar

Table 4. Results of family income regression analysis

Variable	Model 1 (base)	Model 2 (control for academic performance)	Model 3 (control for PISA and TIMSS scores)	Model 4 (control for all factors)	Model 5 (control for all factors + parental education)
	Коэффициент [95%-ный ДИ]				
Family income (base category: under 20,000 rubles/month, 39%)					
20,000–29,000 rubles/ month (26%)	0.10*** [0.04; 0.15]	0.03 [-0.01; 0.07]	0.06** [0.01; 0.10]	0.03 [-0.01; 0.07]	0.01 [-0.03; 0.06]
30,000–49,000 rubles/ month (18%)	0.22*** [0.15; 0.28]	0.09*** [0.03; 0.14]	0.14*** [0.08; 0.20]	0.08*** [0.03; 0.13]	0.05** [0; 0.10]
50,000–79,000 rubles/ month (7%)	0.25*** [0.16; 0.35]	0.13*** [0.06; 0.20]	0.15*** [0.06; 0.23]	0.11*** [0.05; 0.18]	0.08** [0.01; 0.14]
> 80,000 rubles/month (3%)	0.34*** [0.22; 0.45]	0.18*** [0.06; 0.30]	0.19*** [0.07; 0.31]	0.16*** [0.04; 0.28]	0.11* [-0.01; 0.22]
N/A (7%)	0.20*** [0.11; 0.29]	0.11*** [0.04; 0.18]	0.14*** [0.07; 0.22]	0.11*** [0.04; 0.17]	0.11*** [0.04; 0.18]
<i>n</i> (number of students)	3,268	3,268	3,268	3,268	3,268

Note: Models are the same as in Table 2. All models additionally control for student gender. Model 5 additionally controls for parental education. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

results, with the probability of transition to high school differing for students with different family incomes even after controlling for academic performance and test scores. For example, students from families with incomes over 80,000 rubles/month (only 3% of the sample) are 16% more likely to continue their education in 10th grade than children from families earning less than 20,000 rubles/month (39% of the sample) even after controlling for academic performance and test scores.

Model 5 in Table 4 shows that the significant correlation between family income and the probability of transition to 10th grade is preserved even after control of parental education (in addition to academic performance, test scores, and other variables). It means that both parental education and family income influence the probability of making an educational transition. It was not among our goals to measure the cause-effect relationship or determine whether it is parental education or family income that is more important for student education. Obviously, both the cultural and financial resources of the family contribute to the educational trajectories of students.

Russia has lately adopted a myth of universal higher education: it is believed that most young girls and boys enter higher education institutions. However, according to the 2010 census, only 37% of people born in 1981–1985 obtained a higher education (although the rate was

6. Conclusions

higher in Moscow—57%) [Bessudnov, 2012]. It is hardly sensible to focus exclusively on higher education when discussing education policies in Russia. The first “fork” in educational trajectories of students occurs as early as after 9th grade. Only 57% of 9th grade graduates progressed to 10th grade in 2013, and the rate has been steadily decreasing since the mid-2000s.

As we show in this article, a tangible gender and socioeconomic inequality affects educational choices after 9th grade. 61% of girls and 53% of boys move to high school, while the rest of 9th grade graduates opt for vocational education. Socioeconomic inequality is even more pronounced. 87% of children whose parents have higher education are enrolled in 10th grade, compared to 47% of students whose parents do not have a higher education.

The mechanisms of gender and socioeconomic inequality in educational transitions after 9th grade develop in different ways. Girls perform better than boys, and this can explain why they stay in high school more often instead of choosing vocational or trade schools. If we compare boys and girls with similar academic achievements, there will be nearly no difference in the probability of transition to 10th grade between them. Thus, the choice of educational trajectory is affected by primary effects, but not secondary effects, at least for the transition from 9th to 10th grade.

Other conclusions follow when we analyze socioeconomic inequality. Even controlling for both academic performance and test results, we can see a sizeable difference in the probability of moving to 10th grade between students from families with different educational backgrounds and income. The probability differs a lot even for students with similar academic achievements. Statistical control for grades and test results leaves a gap of 14% in the probability of transition to high school between those students whose parents have a higher education and those who do not have a higher education. Thus, we can observe both primary and secondary effects of socioeconomic inequality in choosing educational trajectories after 9th grade.

Why do secondary effects manifest themselves for socioeconomic family characteristics but not for gender? There may be several reasons for this. First, it is important to bear in mind that parents influence the educational decisions of their children. Of course, both parents and students will be guided by the motivation to learn, which is measured by academic performance in one way or another. After allowing for this factor, we observe no obvious differences between parents of boys and girls influencing the educational decisions of their children (although we cannot ignore the possibility of military conscription for boys who did not begin attending a university before 18). However, the behavioral patterns of families with different levels of education and income may differ substantially in this situation. More educated and affluent parents will encourage their children to continue schooling even if their attainment leaves much to be desired. On the contrary, less ed-

ucated and affluent parents may care less about their children's education and not mind their transition to vocational education, even if the grades are high enough to stay in school.

Second, the attitudes of students matter. Children from families with different socioeconomic status may picture their educational trajectories differently, whatever the direct influence of parents might be. Being affected by the attitudes of their friends and social environment and guided by the example of their own parents, children from more educated and advantaged families may be more enthusiastic about completing high school and entering a university.

Schools and teachers can also play a part in the educational choices of students after 9th grade. The motivation of schools may be different. On the one hand, per capita financing makes schools compete for students with vocational education institutions and promote more students to 10th grade. On the other hand, low-performing students may lower the average USE score for the school and even for the region. Until recently, average regional USE scores were a criterion of governor performance, directly motivating local authorities to achieve high USE rates. Schools and teachers may also treat low-performing students differently depending on the social status of their families. Besides, an important role may be played by school-parent interaction, which depends on the motivation of parents to send their children to high school.

Finally, we need to make an allowance for the activities of secondary vocational education institutions—which also compete for prospective students with schools—being subject to per capita financing. In order to choose vocational education, 9th grade graduates should have such option, meaning that their locality should have institutions offering education programs that might be of interest to students. Secondary vocational training schools are distributed unevenly among regions and localities. The statistical analysis in this article controls regional differences, but there might be a considerable level of inequality in geographical access towards secondary vocational education within the regions. Trade schools and colleges may be concentrated in localities and districts with higher proportions of less educated and affluent families. The extensive offer in the labor market may also be a factor of leaving school after 9th grade for children from such families.

As we can see, the mechanisms of development of secondary effects in educational choices after 9th grade should be analyzed with due regard to the behavior of all actors involved: students, their parents, schools, and schoolteachers, and also secondary vocational education institutions. A deep investigation of these mechanisms requires a separate study applying both quantitative and qualitative methods.

Discriminating conceptually between primary and secondary effects of inequality in education is also important for education policies [Jackson, 2013. P. 330–332]. We suggest that such policies seek to

7. Recommendations

reduce educational inequality among students from families with different social characteristics. It is rather hard to change the difference in academic performance between groups of students (primary effects), as it stems from different levels of skills and capabilities, as well as from parental and social influence on the psychological, intellectual, and cultural development of children. State interventions designed to support the development of children from the most disadvantaged families is of undeniable importance, but it is very unlikely to reduce inequality in education.

Reducing secondary effects seems to be a more realistic aim. State interventions to equalize educational opportunities for equally talented children regardless of their family's social characteristics may first of all include working with schools. Schoolteachers and administrators should encourage students from less advantaged families to continue education in 10th grade. The first step in implementing this policy should be the collection of data and school-level monitoring in order to identify the exact proportion of 9th graders from less educated and affluent families who progress to high school.

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Specific Features of Child Involvement in Supplementary Education Depending on the Cultural, Educational, and Financial Status of Families and Place of Living

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Abstract. This paper presents the results of research on child involvement in supplementary education. This research was conducted by HSE in partnership with the Levada Center as part of the 2013 Education Markets and Organizations Monitoring project. The survey covered over 2,000 parents of school students involved in supplementary education provided by various institutions. Correlations between various parameters of student involvement

in supplementary education (the rate and continuity or discontinuity of service consumption, the choice of supplementary education programs and institution types, and the place of supplementary education during free time and holidays) and family characteristics (place of residence, financial status, and cultural and educational background) are analyzed. Some solutions are suggested on how to overcome difficulties produced by differences in policies and the real situation in the field of supplementary education. For instance, the authors claim that national policies oriented at children from vulnerable socioeconomic backgrounds and those living in rural areas should be a combination of two instruments: information, which raises parental awareness of and motivation for their children's supplementary education, and social support to disadvantaged families, including the introduction of vouchers for supplementary education services, setting quotas for publicly funded places in high-quality supplementary education programs, and targeted financing for supplementary education programs in rural schools and schools for difficult students.

Keywords: supplementary education, spare time, educational inequality, accessibility of educational services, cultural capital, educational policy.

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The government has been focusing a lot on supplementary education for children since 2012. The key objective set in political and policy documents (for example, the Decree of the President of the Russian Federation No. 599 “On Implementing the National Policy in Education and Science” from 7 May 2012, the Conception for Supplementary Education of Children approved by Resolution of the Government from 4 September 2014¹, etc.) is to increase the number of children engaged in supplementary education.

Unlike general education, it is not the government’s responsibility to make supplementary education free and universally accessible. However, Russian and foreign researchers [Peterson, Fowler, Dunham, 2013; Gliffin, 1999; Lareau, Weininger, 2008] assign supplementary education an important role in child development and socialization, which makes the government take measures to promote the involvement of children in supplementary education programs.

There is considerable inconsistency in the expert assessments of the existing supplementary education coverage and its dynamics. Federal Statistical Monitoring data (forms 1-ДО and ОШ-1) do not provide a clear overall picture, as they revolves around teaching services instead of the number of children and do not cover all supplementary education institutions. In a situation like this, we desperately need sociological surveys to update and differentiate the existing statistics [Kosaretsky et al., 2013].

Recent years have witnessed ample sociological research in Russia covering various aspects of child involvement in supplementary education. For instance, much attention is paid to coverage by relevant programs, specific features of child involvement at different ages, and the geographical differentiation of this type of service. Researchers compare the popularity of supplementary education programs with differing content, i. e. analysis of the distribution of students involved according to field of study. They also study the motivation and reasons for involvement or noninvolvement, strategies followed by students and parents, the effects of supplementary education, etc. [Sobkin, Kalashnikova, 2013; Loginov, Eliseeva, 2012; Ivaniushina, Alexandrov, 2014; Roshchina, 2012; 2015; Burdyak, 2015].

However, despite the overall high research activity in the field, the impact of financial and cultural resources on the accessibility and quality of supplementary education remains understudied. Meanwhile, drawing attention to this issue is crucial, as educational inequality may be rightly called a major challenge for the development of modern society. This has been proved by many foreign [J. Coleman, P. Bourdieu,

¹ Resolution of the Government No. 1726-p “On Approving the Conception for Development of Supplementary Education for Children” of 4 September 2014; Resolution of the Government No. 729-p “On Approving the 2015–2020 Schedule of Measures to Implement the Conception for Development of Supplementary Education for Children” of 24 April 2015.

P. DiMaggio, H.—P. Blossfeld, etc.] and Russian [Konstantinovskiy, 2008; Konstantinovskiy et al., 2006; Froumin, Pinskaya, Kosaretsky, 2013; Yastrebov, 2012; Prakhov, Yudkevich, 2012; Kosaretsky, Pinskaya, Grunicheva, 2014] researchers in the sociology of education. Yet, most of these works traditionally focus on inequality in both general and professional education, leaving supplementary education on the periphery of research.

Studying the differences in involvement in supplementary education and the mechanisms of inequality reproduction is a new area of research for both foreign and Russian academic communities.

Most Russian researchers focus on the fundamental differences in access to supplementary education (involvement and noninvolvement). Some studies discuss differences in the length of involvement [Sobkin, Kalashnikova, 2013] and the content of programs (areas of study) [Roshchina, 2012; 2015]. Others identify differences in supplementary education coverage depending on family status [Sobkin, Kalashnikova, 2013], access restrictions in rural localities [Ivaniushina, Alexandrov, 2014], and transportation and safety barriers [Vakhshayn, Stepantsov, 2012]. They also explore inequality in access to supplementary education across schools with different status (elite vs. regular, etc.) [Roshchina, 2012; 2015] as well as the differentiation of additional training opportunities across different subjects [Prakhov, 2014; Burdyak, 2015].

As the empirical basis is limited and the number of studies is fairly small for a major field like this, it becomes obvious that we need more research to more fully understand the differences in the scope and nature of child involvement in supplementary education programs. More research will also allow for promoting the hot-button political and expert discussion on the accessibility of supplementary education and its role in the reproduction of inequality.

A wide range of hypotheses on involvement of children in supplementary education and educational strategies of families can be tested on a large sample thanks to surveys conducted as part of HSE's Monitoring of Education Markets and Organizations program, which is conducted by the Center for Socio-Economic Development of Schools at the Institute of Education in cooperation with the Levada Center. Supplementary education was first made part of this study in 2012, as a survey of directors of supplementary education institutions, with parental surveys following in 2013.

The survey results revealed, among other things, differences in the involvement of children in supplementary education by the following parameters:

- the share of children's free time devoted to supplementary education;
- the intensity of involvement in supplementary education (number of types of studies);

- continuity or discontinuity of involvement;
- types of supplementary education institutions;
- content of supplementary education programs.

This article investigates the scale of the differences stated above and their correlation with a family's well-being (financial status), place of living (geographical factor), and educational background (cultural and education status).

1. Research Design and Theoretical Framework

While analyzing differences in the scale and nature of child involvement in supplementary education, we mostly used Coleman's family capital theory, which states that the educational opportunities of children vary depending on family resources, first of all parental education and income [Coleman, 1988]. Besides, we interpreted the behavior of different types of families in the supplementary education market using rational choice theory, according to which people demonstrate maximizing behavior in a services market based on perfect information. This theory assigns important roles to the peculiarities of specific markets (the variety of offers and the level of information asymmetry) and the ability of consumers to use available information, which is largely determined by their educational background [Becker, 1976; Coleman, Fararo, 1992].

The surveys were conducted in October–December 2013 and covered 2,080 parents of school students involved in supplementary education.

We designed a sample stratified by the following parameters: 1) administrative unit/location; 2) area of study; 3) type of ownership for the institution. The sample of parents of children involved in supplementary education was distributed within the "administrative unit/location" stratum in proportion to the number of supplementary education institutions in the stratum. The sample of parents was also distributed evenly among all groups (classes, courses, clubs, etc.).

The survey covered parents of school students attending 85 general secondary education institutions (65 public and 20 private) in 27 subjects of the Russian Federation. 30 parents of elementary, middle, and high school students were surveyed in each public school and 26–27 in each private school.

The sample of general and preschool education institutions was stratified by the following parameters: 1) location; 2) type of locality; 3) type of educational institution; 4) type of ownership. The sample was distributed by the "administrative unit/location" and "type of locality" strata in proportion to the size of strata population. The rest of the institutions were based in Central Federal District cities with a population from 100,000 to 1,000,000. The distribution by the type of locality looked as follows: Moscow: 22% (435 people); cities with a population

over 1,000,000 (other than Moscow): 22% (440 people); cities with a population from 100,000 to 1,000,000: 31% (636 people); towns with a population under 100,000: 8% (160 people); urban-type settlements and villages: 17% (329 people). We observed the following structure of the sample depending on the mother's (or stepmother's) education: secondary education or lower: 2% (46 people); secondary vocational education: 26% (486 people); higher education (either complete or incomplete): 64% (1,210 people); two higher education degrees or postgraduate degree: 8% (148 people).

The distribution of the respondents by the level of income conform to the following statements: "We have enough money for daily expenses, but buying clothes is rather difficult": 11% (205 people); "We have enough money for food and clothes, but buying a TV, a fridge, etc., is rather difficult": 35% (679 people); "We are quite well-off, but would have to borrow money to buy a car or to go on an expensive vacation": 45% (867 people); "We are affluent, we can afford to buy an expensive car or to go on an expensive vacation": 10% (185 people).

Children with highly educated mothers spend on average less time playing in the street or watching TV and engage in extracurricular classes, tutorials, and self-education more often. Children from families with a medium and low level of education tend to devote more of their time to playing in the street, watching TV, and attending school-based study groups (Table 1).

However, there is a blind zone in the free time of modern school students that is little affected by the mother's education—spending time on the computer.

Extracurricular activities (interest groups, clubs, classes, etc.) account for the highest share of free time of school students in Moscow and cities with populations from 100,000 to 1,000,000, or 31% and 32% of all free time, respectively (Table 2).

Moscow students tend to engage in out-of-school extracurricular activities and tutorials more than anyone else, while school students in cities with populations from 100,000 to 1,000,000 are more often involved in school-based classes and clubs.

Such differences are observed because Moscow and large cities offer more supplementary education institutions and a wider range of programs, and hence a wider choice. According to Federal Statistical Monitoring, there were 8,593 urban supplementary education institutions for children in 2014, as compared to only 3,117 rural ones.

According to the survey of supplementary education institution directors (2013–2014 Monitoring of Education Markets and Organizations), the average number of arts programs per institution was 24.8 for Moscow, 17.6 for cities with populations from 100,000 to 1,000,000, and 12.2 for villages. Similar patterns can be observed in virtually all areas of study.

2. Findings

2.1. The structure of school student's free time and the share of supplementary education during such time

Table 1. Structure of school student's free time
(Distribution by the mother's education level)

Item: On average, how many hours of your child's free time are devoted to various activities per week, including Sunday?	Item: Mother's (or stepmother's) education level							
	Secondary education or lower		Secondary vocational education		Higher education (complete or in-complete)		Two higher education degrees or postgraduate degree	
	hrs	%	hrs	%	hrs	%	hrs	%
School-based interest groups, clubs, and classes	5.3	14.9	3.1	8.9	2.7	8.4	3.8	11.2
Interest groups, clubs, and classes in institutions other than school	3.3	9.2	4.5	13	4.9	15.2	6.1	17.9
Tutorials	0.9	2.5	0.7	2	1	3.1	2.2	6.5
Self-education, further reading	3.4	9.6	4.1	11.9	4	12.4	4.6	13.6
Watching TV	7	19.7	6.7	19.4	5.7	17.6	4.2	12.4
Being on the computer (playing, social media, learning activities)	7.2	20.3	7.3	21.1	6.7	20.7	7	20.6
Being outside (going out, playing in the street)	8.4	23.6	8.2	23.7	7.3	22.6	6	17.7
Total	35.5	100	34.6	100	32.3	100	33.9	100

Table 2. Structure of school student's free time
(Distribution by the type of locality, hrs)

Item: On average, how many hours of your child's free time are devoted to various activities per week, including Sunday?	Item: Type of locality				
	Moscow	Cities with population over 1 mln	Cities with population from 100,000 to 1 mln	Cities with population under 100,000	Urban-type settlements, villages
School-based interest groups, clubs, and classes	2.8	2.3	3.6	3	3.2
Interest groups, clubs, and classes in institutions other than school	4.9	4.3	5.3	5.9	3.6
Tutorials	1.3	0.8	1.2	0.9	0.6
Total extracurricular activities	9	7.4	10.1	9.8	7.4
Self-education, further reading	3.7	4.4	4	5.2	3.3
Watching TV	4.2	7.6	5.2	7.2	7
Being on the computer (playing, social media, learning activities)	6.2	7	6.8	7.1	7.2
Being outside (going out, playing in the street)	6.2	8.8	7	7.6	8.1
Total free time	29.3	35.2	33.1	36.9	33

Table 3. Number of types of preschool supplementary education
(Distribution by the level of family income, % of total respondents)*

Item: How would you assess the financial status of your family?	Item: How many different types of preschool supplementary education programs was/is your child engaged in?			
	1 type	2 types	3 or more types	None
We have enough money for daily expenses, but buying clothes is rather difficult	39.5	19.5	9.3	31.7
We have enough money for food and clothes, but buying a TV, a fridge, etc., is rather difficult	39.6	18.3	6.9	35.2
We are quite well-off, but would have to borrow money to buy a car or to go on an expensive vacation	35.9	23.4	10.5	30.2
We are affluent, we can afford to buy an expensive car or to go on an expensive vacation	35.7	27.0	15.1	22.2

*Only variables with a statistically significant correlation are specified here and elsewhere in the analysis of parent surveys. The correlations were tested by the chi-squared test. Significance level: 0.05.

As long as supplementary education is not compulsory, the starting age and the consumption rate (the number of programs a child is involved in) are strictly individual. The state offers supplementary education opportunities in an extensive network of institutions of various degrees of departmental subordination and does not regulate their consumption (children may engage in supplementary education either exclusively at school, in a cultural institution, in a sports school, or in all of these). Energy and family choice play the decisive roles here. At the same time, the conditions of supplementary education differ from age to age. For instance, preschool students mostly have to pay for supplementary education programs, so family resources become a decisive factor, too.

An analysis of the survey results shows that children from the most affluent families tend to be involved in preschool supplementary education more often and more actively (Table 3).

There is every reason to believe that involvement in supplementary education is influenced by the place of residence. For example, more than half of rural respondents reported that their children had never been involved in preschool supplementary education. This indicator is much higher than in other types of localities (Table 4) and may be explained by transport barriers, as well as a lack of development alternatives and understanding of the importance of engaging children in various types of preschool supplementary education. Anyway, ensuring the accessibility of preschool supplementary education for rural children requires the special attention of researchers.

At the elementary school level, the state offers a much wider array of public-funded supplementary education programs, both school-based and out of school. This is probably why the differences in cov-

2.2. Supplementary education services consumption rate

Table 4. Number of types of preschool supplementary education
(Distribution by the type of locality, % of total respondents)

Item: Type of locality	Item: How many different types of preschool supplementary education programs was/is your child engaged in?			
	1 type	2 types	3 or more types	None
Moscow (or Moscow Region)	35.8	28.2	16.0	20.0
Cities with population over 1,000,000	39.5	20.2	7.5	32.7
Cities with population from 100,000 to 1,000,000 (administrative centers)	39.2	21.9	7.8	31.1
Cities with population from 100,000 to 1,000,000 (other than administrative centers)	30.0	35.0	5.0	30.0
Cities with population under 100,000 (other than administrative centers)	42.5	10.6	9.4	37.5
Urban-type settlements	30.2	34.9	18.6	16.3
Villages	31.1	12.9	4.2	51.7

Table 5. Number of types of elementary school supplementary education
(Distribution by family income, % of total respondents)

Item: How would you assess the financial status of your family?	Item: How many extracurricular classes or clubs did/does your child attend in grades 1–4?			
	1 type	2 types	3 or more types	None
We have enough money for daily expenses, but buying clothes is rather difficult	39.5	32.7	22.0	5.4
We have enough money for food and clothes, but buying a TV, a fridge, etc., is rather difficult	42.9	34.2	17.1	5.0
We are quite well-off, but would have to borrow money to buy a car or to go on an expensive vacation	38.9	37.8	19.5	3.1
We are affluent, we can afford to buy an expensive car or to go on an expensive vacation	25.9	39.5	31.4	3.2

erage are not that noticeable between children from families with different status. Yet, the consumption rate is still considerably higher among more affluent respondents, who stated more often that their children had attended two, three, or even more types of supplementary classes (Table 5).

The degree of involvement in supplementary education also depends on a family's educational background. Mothers with one or two higher education degrees reported more often that their children attended more than one type of supplementary class (Table 6).

Table 6. Number of types of elementary school supplementary education
(Distribution by mother's education level, % of total respondents)

Item: Mother's (or stepmother's) education level	Item: How many extracurricular classes or clubs did/does your child attend in grades 1–4?				Total respondents
	1 type	2 types	3 or more types	None	
Secondary vocational education	50.3	27.9	16.6	4.8	499
Incomplete higher education	40.4	37.7	14.6	6.6	151
Higher education	37.4	37.3	20.6	3.8	1114
Two higher education degrees or postgraduate studies/degree	21.3	47.7	29.0	1.9	155
Initial vocational education	34.1	34.1	24.2	5.5	91

Table 7. The nature of supplementary education
(Distribution by mother's education level, % of total respondents)

Item: Has your child ever quit attending any classes, clubs, or interest groups that provide supplementary education?	Item: Mother's (or stepmother's) education level.			
	Secondary education or lower	Initial or secondary vocational education	Higher education (complete or incomplete)	Two higher education degrees or postgraduate studies or degree
Does not quit; keeps attending/program completed	66,1	57,9	54,9	45,4
Started attending other classes, clubs, or interest groups while still attending the current one(s)	21,2	25	26,3	36,4
Quit once and enrolled in another class	8,5	11,7	13	11,5
Started and quit attending numerous classes, clubs, or interest groups; tried a lot of options and did not fix upon anything	0,6	1,2	1,1	0,3

Unlike in general education schools, supplementary education programs allow students to attend several classes and decide for themselves to continue or quit. Therefore, children are more likely to find optimal programs for their interests, capabilities, and talents.

The survey results demonstrate that children of more educated mothers (those with a complete or incomplete higher education, two higher education degrees, or a postgraduate degree) are more likely to quit supplementary studies and attend several classes or clubs at the same time (Table 7). Meanwhile, preschool educational trajectories are mostly continuous in families where mothers have only a secondary or vocational education. It can be assumed that mothers with a higher education have a stronger orientation for searching and mon-

2.3. The nature of child involvement in supplementary education (continuity and discontinuity)

Таблица 8. **Attending clubs guided by museums, exhibition centers, and other cultural institutions** (Distribution by type of locality, % of total respondents)

Item: Type of locality	Item: Has your child ever attended clubs or classes guided by museums, exhibition centers, archives, planetariums, theaters, philharmonic societies, or houses or palaces of culture?		
	Used to attend, but does not attend anymore	Currently attends	Never attended
Moscow (or Moscow Region)	9.3	18.3	72.4
Cities with population over 1,000,000	13.4	15.9	70.7
Cities with population from 100,000 to 1,000,000 (administrative centers)	12.5	16.0	71.5
Cities with population under 100,000 (other than administrative centers)	11.9	23.8	64.4
Villages	8.0	16.8	75.2

itoring education outcomes (i. e. what their children get from supplementary education), whereas other mothers are satisfied with merely keeping their kids “occupied”.

2.4. Areas of study and infrastructure of supplementary education pro-grams

The diversity of supplementary education manifests itself in a wide choice of programs in different areas of study provided by institutions of various types and status. The survey results make it clear that the choice of supplementary education content (areas of study) is determined by family characteristics analyzed in this article (place of living, financial resources, and educational background). Certain categories of families prefer such areas as sports, arts, foreign languages, and child development clubs guided by museums and cultural institutions.

While attending museum-based clubs is not widespread as an extracurricular activity, the highest rate of children attending them was reported by parents living in small towns with a population below 100,000 (Table 8).

Neither economic status nor mother’s education level correlates with attending classes provided by any of the abovementioned institutions. It follows that family characteristics are not as important in this case as some environmental properties: perhaps it is the case that museums in small towns engage more actively in the supplementary education of children or that parents in small towns choose museums simply due to lower transportation barriers.

Attendance of art classes and sports clubs varies depending on the type of locality, parental education, the type of general education institution attended, and the financial resources of the family.

Rural children have less access to sports and art schools. Most rural respondents (over 60%) reported that their kids had never attended a music, arts, or sports school. The survey results are quite con-

sistent with official statistics: there were only 908 rural sports schools in 2014, as compared to 2,068 in urban areas.

The highest proportion of respondents whose children attend music or arts schools was observed among parents with one or more higher education degrees. Children attending arts schools were mostly students of lyceums and gymnasiums. Therefore, arts and music schools are mostly attended by urban lyceum and gymnasium students from well-educated families. No statistically significant correlation was discovered between art school attendance and family income.

While parental education is the decisive factor in opting for an arts school, involvement in professional sports is largely determined by financial status. The highest proportion of children attending sports schools belong to affluent and very affluent families, which is unsurprising, as uniforms and equipment are expensive. Besides this, some sports requiring considerable investments might be associated with a high social status (i. e. sports activities are perceived as a sign of status). Meanwhile, amateur extracurricular sports activities (from at-home exercises to playing football in the street) are distributed more or less evenly among different status groups.

Supplementary foreign language courses are most often taken by children from more affluent families (32.3% as compared to 16.9% for those from less advantaged families). The difference may be explained by the inevitable need to pay for such services and by the similar prices in different institutions, which makes finding a more affordable option less easy. Obviously, this type of supplementary education does not provide equal access for students from low-income families. As speaking a foreign language is a key competent in today's labor market, conditions should be provided to reduce access inequality in this sector.

Supplementary or advanced courses in curriculum subjects are also attended more often by children from advantaged families (24.6% as compared to 13% for children with less affluent parents).

Russian school students have longer summer vacations than any of their peers in most developed countries. Participation in summer school and in-city camp programs is one of the possible ways to use this time productively. Foreign researchers focus a lot on inequality in organizing summer vacations between children from different social groups [Alexander, Entwisle, Olson, 2007]. Families with rich human capital try to use vacations as efficiently as possible to develop or even instruct their children, while others do not display the necessary interest or do not have the resources to provide such productive occupation, so that their children "just 'lose' summer time to their peers" [Yastrebov, 2012].

As the survey proves, the children of mothers with secondary education or lower are more likely to spend summer vacations at home or

2.5. Supplementary education of children during summer vacations

Table 9. **Ways of spending summer vacations**
(Distribution by mother's education, %)

Item: How did your child spend last summer?	Item: Mother's (or stepmother's) education level			
	Secondary education or lower	Initial or secondary vocational education	Higher education (complete or incomplete)	Two higher education degrees or postgraduate studies or degree
At home	45.5	47.7	37.7	36.7
Went to an in-city camp (school-based or provided by a supplementary education institution)	22.4	18.9	18.7	15.7
At summer home in country	24.2	26.6	33.1	31
Traveled abroad with parents (relatives)	6.7	10.9	20.7	24.9
Went to a countryside summer camp or center in Russia	8.5	13.4	16.7	14.7
Went to a foreign summer center	1.8	1.9	2.9	4.5
Went to a Russian health resort or recreation center with parents or relatives; traveled around Russia	9.1	16.6	19.1	22
Visited relatives (grandfather, grandmother) in another city, town, or village	34.5	32.4	32.5	31.9

Note: Respondents were allowed to select more than one option, so the column sums are more than 100 %.

in in-city camps (school-based or provided by supplementary education institutions). In families where mothers are better educated, children are sent more often to countryside summer camps in Russia or summer centers abroad (Table 9). Countryside camps provide more educational, or at least development opportunities than in-city ones, so it is quite natural that families with a higher level of human capital choose this type of recreation.

The proportion of students spending summer vacations with their family ("Traveled abroad with parents or relatives"; "Went to a Russian health resort or recreation center with parents or relatives; traveled around Russia") is higher in families with better-educated mothers. Such vacations turn out to be better organized and more productive, involving cultural and leisure events.

The proportion of students spending summer vacations at home is higher in families with a low educational background. Of course, a child may also profit from time spent at home (through reading, for instance), but we still believe that this is a less productive form of recreation, just like spending time in the street (where it is possible but unlikely that intellectual games will be played), which is also typical of these children.

Table 10. **Ways of spending summer vacations**
(Distribution by family income, %)

	Item: Household monthly income per person.			
	Under 10,000 rubles	From 11,000 to 30,000 rubles	From 31,000 to 50,000 rubles	Over 51,000 rubles
Item: How did your child spend last summer?				
At summer home in country	43,5	40	35,2	35,2
Traveled abroad with parents or relatives	21,7	16,9	20,8	13
Went to a countryside summer camp or center in Russia	28,4	33,6	28,6	32,8
Went to a foreign summer center	8,2	20,9	25,2	34,3
Went to a Russian health resort or recreation center with parents or relatives; traveled around Russia	14,3	16,4	16,7	14,8
Visited relatives (grandfather, grandmother) in another city, town, or village	2,4	2,6	2,5	6,3
At home	16	20,5	18,2	17,2
Went to an in-city camp (school-based or provided by a supplementary education institution)	33,6	31,7	32,7	31,3

Note: The respondents were allowed to select more than one option, so the column sums are more than 100 %.

As we compare how children with different family incomes spend their summer vacations, differences mostly manifest themselves between the most and the least advantaged families. Children in the former are less likely to go to in-city camps and more likely to go to foreign centers. No significant variance was observed in spending time in countryside camps (Table 10).

As we can see from the survey, educational and development opportunities available in summer vacations correlate with the cultural and social status of the family. National education policies should take account of the fact that more productive and useful ways of spending vacations are mostly accessible to well-educated and affluent families. Possible measures for overcoming this inequality of access to supplementary education are being widely discussed today. They include, among other things, increasing countryside summer camp subsidies for children from low-income families and fundamentally modernizing the infrastructure and programs of in-city camps.

This survey demonstrated that a number of aspects of children involvement in supplementary education and their ways of spending free time (in particular, summer vacations) vary depending on such factors as family income, mother's education level, and place of res-

3. Conclusions

idence. What we have here is obvious inequality in access to supplementary education and productive ways to spend one's free time.

The level of a mother's education determines the quality of free time usage and efficiency of using vacation periods. The children of better-educated mothers try different supplementary education programs more easily, while children of low-educated mothers are unlikely to quit one program and start another. Family income and parental education may influence the age of engaging in extracurricular activities and the degree of involvement (the number of programs the child is engaged in at the same time).

Both financial resources and the educational background of families are related with the choice of supplementary education programs: children from more affluent families have more access to foreign languages and professional sports, as well as advanced courses in curriculum subjects, if necessary.

Children from families with a higher education and economic status are more likely to receive supplementary education in specialized educational institutions (sports schools, art schools, etc.).

School students living in large cities engage in supplementary education programs earlier and more actively than their peers in small towns and villages.

We suggest that the revealed particularities of involvement of children in villages and towns in supplementary education, which may be considered manifestations of inequality in access to this type of education, cannot be explained exclusively by transportation or financial barriers. They can also result from the low involvement of rural parents in the education of their children, a lack of awareness about the opportunities available, and an unwillingness to use those opportunities. This hypothesis needs to be tested in order to design appropriate measures to overcome the inequality of access to the supplementary education of children living in villages and other small localities.

The revealed differences in access to supplementary education, as well as their scale and, probably, peculiarities of manifestation, are attributable to a certain extent to the specific features of this type of education and its organization in Russia: its optionality; the possibility to engage in several programs at the same time, either paid or publicly funded; a wide diversity of programs and institutions; and pronounced information asymmetry.

In a situation like this, higher-educated families that have better market analysis skills and that search actively for the best alternative tend to gain an advantage over lower-educated families.

The survey results allow us to draw certain conclusions about the national policy in supplementary education and the organization of child vacations. In particular, we can safely assume that the most useful strategy of enhancing supplementary education coverage by increasing the number of publicly funded places in programs may be rather unproductive in terms of overcoming the inequality of access

to this type of education: children from highly educated families will be the first to benefit from this strategy, while students from lower-educated families will only get access after the needs of the first group are satisfied [Lucas 2001].

That is why the national policy concerning children from families with low socioeconomic backgrounds and those living in rural areas should probably combine two types of strategies:

- raising the awareness and motivation of parents for involving children in supplementary education by providing information on publicly funded supplementary education opportunities, support in choosing programs, tutorship, etc.
- ensuring social support for families: introducing vouchers for supplementary education services (or raising the value of vouchers in the case of introducing them for all); setting quotas for publicly funded places in high-quality supplementary education programs, including those provided by museums, modern centers of productive leisure activities, and countryside academic summer camps; and targeted financing for supplementary education programs in rural schools and schools for disruptive students.

The increasing empirical evidence of effects that supplementary education has on the academic achievement, development, and socialization of children is prompting the need to extend the research of differences in involvement among different categories of children as well as factors and triggers of inequality in access to such education.

The extent to which supplementary education contributes to an inequality of educational opportunities and, on a larger scale, to the solidification and reproduction of social inequality is an issue for further research and discussion. Assumingly, the extent of such inequality will grow ever more considerable as the importance of supplementary education is increasing. Supplementary education is going to be used ever more actively as a means of differentiation by families, suggesting that its role will become comparable to that of elite schools.

Further research is also required into the strategies used by different categories of families in the supplementary education market due to the specifics of the latter, such as the variety of offers and level of information asymmetry.

We suggest that it would be quite efficient to analyze the involvement of children in supplementary education in terms of individual educational trajectories. The relevant module of items is included in the longitudinal study of trajectories in education and career conducted by HSE's Institute of Education².

² <http://www.trec.hse.ru>

Deeper research in this area will allow for a more coherent national education policy based on developing supplementary education programs and extending access to its resources for children from various social groups.

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Age-Oriented High School Model: Implementation Outcomes

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Abstract. In the age-oriented model, a high school aims to provide conditions for students to identify themselves as capable of goal setting and achievement and to prepare themselves for self-determination in both learning and life in general. The model was implemented in the Universe Gymnasium of Krasnoyarsk. The experimental and control groups of students were surveyed twice—at the end of Grade 9 and at the end of Grade 11—using a battery of diagnostic methods to evaluate how the model prepared

high school students for self-determination. The experimental group included high school students from Universe, and the control group covered students of two neighboring schools. The study revealed significant differences between the groups in every component of preparedness for self-determination: motivation and needs, cognition, and application. Thus, the development of self-determination, world outlooks, and moral conscience among students is possible and shows better results in institutions based on the age-oriented model.

Keywords: high school models, age-oriented high school, high school student self-determination, preparedness for self-determination, world outlook, moral conscience.

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Russia has been implementing its Federal State Educational Standard since 2009. The Standard dramatically increases the requirements for the education process. Schools now have to produce three types of educational outcomes instead of just one: subject-specific outcomes (as before), personal development outcomes, and meta-subject outcomes. Obviously, new types of educational outcomes require new conditions to be provided and cannot be achieved without changing the educational space, expanding education reforms, and breaking the monopoly of class-and-lesson education¹.

¹ Class-and-lesson education is an organization of the learning process where cohorts of students are divided into small groups (classes) for at least one

Before the new standards were adopted, a school's only goal was to ensure that students had a predetermined amount of knowledge by the end of their studies. Working towards this goal, teachers acted as translators of knowledge—they knew how to explain things so students understood and memorized them. “A teacher of skills tries to provide conditions to make their students memorize standard answers to standard questions” [Illich, 2006. P. 41]. Teaching was mostly concerned with this.

A great proportion of today's tenth-graders find themselves to be unable to build their own curricula or educational programs when they have to make a choice at the start of high school. This inability comes from an absence of motivation based on individual ambitions for the future. A. Kasprzhak notes that school students are not prepared for interpersonal communication, despite being involved in interactions with various clusters [Kasprzhak et al., 2004].

At the current point of social development, it is not ready-to-use knowledge, but the ability to find knowledge that young people should have. The teacher is not a mere translator of knowledge anymore. I. Illich refers to the new type of teacher as an “educational manager”, who is “interested in helping people meet and learn. He or she gives support to those who are going to solve their own unsolved problems. In most cases, he or she helps the student articulate their problem because only a clear articulation will allow them to find a partner moving in the same direction and investigating the same problem in the same context” [Illich, 2006. P. 41]. From now on, the teacher should become a guide in the world of knowledge. His or her paramount mission is to impart the methods of obtaining knowledge. Students learn to find knowledge themselves, whether independently or in teams, making decisions, raising questions, searching for answers, setting goals, and collecting and analyzing information. Thus, the school turns from a place that offers ready-to-use knowledge into a place that teaches students to be independent: to work both individually and in a team, to take responsibility, to set goals, to articulate problems, to develop goal achievement plans, to assess and find resources, to solve articulated problems, and to analyze results. In this educational concept, the role of a high school teacher is also subject to change. The teacher is supposed to create favorable conditions for solving teenager problems by building, handling, and maintaining an atmosphere where students will learn to make decisions, including those about themselves and their future.

We therefore face a need to reconstruct the whole educational system for a high school student by approaching both the educational atmosphere and the process of education from a wider perspective

academic year, with all students working with the same materials in lessons, which serve as the predominant form of teaching.

that includes the life context of students, thereby making the student the key subject of the high school learning process.

So, what should a high school be like that both delivers age-specific goals and provides for the attainment of relevant education outcomes?

The majority of researchers of adolescence agree that the early youth period is characterized by personal, social, and professional self-determination. To put it more precisely, the process of self-determination is launched in one's early youth and becomes the "affective focus" in this period. The transfer to early youth tests the preparedness for self-determination. A young person has to determine his or her place in the adult world and choose the path for his or her life journey. They try to plan their future learning with due regard for available resources and existing conditions. The ability to make such plans depends on the development of self-consciousness, self-reflection, and awareness of one's own individuality.

Building upon the concepts of youth elaborated by Russian researchers (Bozhovich, Kon, Dubrovina, etc.), we can identify the key results of high school personality development:

- Preparedness for self-determination, i. e. being ready to set life goals independently, to choose one's future occupation, and to measure the ideas of future occupation by one's abilities and plans.
- World outlook, i. e. active development of one's own system of views and beliefs and one's own hierarchy of value orientations.
- Moral conscience, i. e. transition from conventional externally oriented conduct standards to autonomous orientation towards one's inner system of principles.

Pursuing the activity approach, we assert that high school students can only prepare for self-determination and develop a world outlook and a moral conscience by following an individual program of studies, making free choices, and actually bearing responsibility for their choices—determining for themselves through reflection of their own behavior, achievements, and failures in various spheres of school life, including learning, social, and extracurricular activities. A particular item becomes knowledge once it has been experienced. High school students study and work on their own experiences, thus achieving psychological maturity. P. Sergomanov describes three types of high school teaching—"mediator", "dispatcher", and "scholar"—emphasizing that an educational institution may either contribute to or inhibit a student's ability to solve age-specific problems of youth [Sergomanov, 2004]. Concern about each student's personality and their feelings and emotions is an essential condition of a high school

**Self-Determination
as the Fundamental
Stage in Early Youth
Personality Development**

[Froumin, Mayorova, Shalimov, 1993]. Education is the only sphere of life in which high school students associate with their future endeavors [Sergomanov, 2000]. Yet, they report a lack of adult support and concern as an important resource for their self-determination.

As we can see, one of the key objectives of students in high school is a comprehensive elaboration of their possible future and matching up their individual plans with their ideas of the future. Recent pedagogical studies have referred to personal learning guides as tutors and the relevant teaching form as tutorship (Kovaleva, Cheremnykh, etc.).

The ability to solve problems productively in a changing world is shaped through the development of projects and activities that promote thinking, creativity, and research abilities [Cheremnykh, 2007]. The school should provide high school students with the opportunity to actually engage in the abovementioned activities and experience and live through them. However, this requires a special organization of the educational space to conform to the needs of high school students and encourage the achievement of competency outcomes. The educational space should help high school students solve the age-specific problems of self-determination and education choice [Kovaleva, 2007; Froumin, 1990]. Self-determination skills can be developed “through situations of meaningful choice and meaningful conflict, through the inculcation of thinking and behavioral patterns, through involvement in different clusters and activities [Froumin, 1990. P. 7]. High school students should attempt to make choices, fail, analyze the grounds and consequences of their decisions, deal with a lack of resources, etc. That is, the process of high school student self-determination should be organized. Following Froumin, we consider schools as a “comprehensive educational space offering opportunities for free actions” [Froumin, 1999. P. 57]—actions performed by the central figure of the educational process. Such schools are represented by “multiple customized forms of development and a diversity of educational opportunities” [ibid. P. 116].

Thus, the system of organizational and pedagogical conditions required to prepare high school students for self-determination should be based on the following ideas:

- Modern education is about solving age-specific problems and developing universal skills (competencies).
- The fundamental process determining the life of high school students is solving the age-specific problem of personal, social, educational, and professional self-determination.
- The fundamental process determining the specifics of teaching in high school is pedagogical guidance for student self-determination.
- An activity approach to the learning process means providing high school students with the opportunity to experience and live

through the necessary activities in three contexts: personal education, educational research, and socialization.

- The student is the central figure of the educational process in high school, which determines the specifics of his or her relationships with teachers, parents, and school administrators.

We believe that the requirements specified above are satisfied by a model that allows for a high school of customized educational programs that provide the conditions for students to practice achieving their educational future through personal learning plans and solve social and personal self-determination problems.

The proposed model suggests that school activities are not restricted to classroom lessons, but include a system of measures to put students in a situation of choice, of realizing this choice, of setting goals, and measuring them using available resources. Students make choices, set goals, and find ways to achieve them building on their own learning and living experiences, such as social practices or constructing curricula from variant and invariant components.

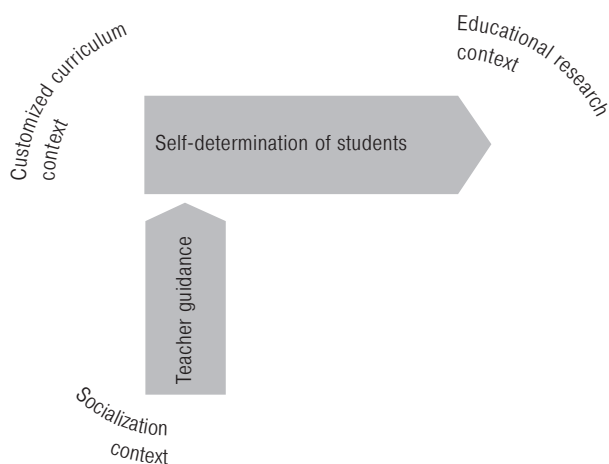
In this model, the high school aims to provide conditions for students to identify themselves as capable of setting and achieving goals and to prepare themselves for self-determination in both learning and life. The system of organizational and pedagogical conditions that allow for a high school of customized educational programs rests on two fundamental processes of student self-determination and teacher guidance in each of three contexts that ensure the achievement of relevant educational outcomes (both competency and age-specific):

- *The customized curriculum context*, where students can make thoughtful attempts to choose their educational future and begin realizing their plans at school.
- *The educational research context* as a sphere for professional communication and acquiring the experience of research and learning activities.
- *The socialization context* allowing young people to try on different social roles, initiate responsible actions, realize their potential, and understand themselves (make an attempt at something and receive expert feedback) (Fig. 1).

Together with teacher guidance, these three contexts facilitate the process of high school student self-determination.

In the proposed model, the high school has the following objectives:

1. Develop a diversified educational space that provides students with the opportunity to select different levels of study, elective courses, and graduation paper topics.

Figure 1. **Age-oriented high school model**

2. Create conditions for preparation and the defense of graduation papers.
3. Provide social experience opportunities for students.
4. Ensure teacher guidance for customized educational programs (identifying the reasons for choosing specific subjects, building customized educational programs, and finding resources for their implementation).

These objectives can only be achieved through the consistent and coordinated work of high school staff. A customized educational program manifests the activity of a high school student in each of the three contexts described. Subject-specific teachers play a crucial role in the customized curriculum aspect, where research supervisors play a key role in the educational research aspect and social activity tutors play a crucial role in the socialization aspect. Class advisors coordinate the scope and the overall logic of customized curricula, as well as the correlation between educational goals and resources.

Customized curricula are designed according to an organized procedure of presenting the three contexts. A student should design his or her own educational program, or rather a draft of it that can be discussed with teachers and parents. In presenting the customized curriculum aspect, subject-specific teachers actually present the curricula of their courses. There should be a choice among a few teachers of mathematics, Russian language, literature, and all other subjects, whether they are compulsory or elective. Presenting the educational research aspect is about demonstrating field-specific labs. Having selected one, a student then meets his or her research supervisor and they work on a research project together. The social practice aspect is presented as a set of social activities, from volunteerism to independent projects like mentoring a group of pupils. A different tutor coordi-

nates each type of practice. After the presentations, high school students make drafts of their educational programs, discuss them with class advisors and parents, and make changes as necessary. During the next two years, students may modify their curricula in accordance with a specifically designed procedure. Performance in customized educational programs is assessed three times throughout the high school period: after the first, the second, and the third semesters.

The basis for building customized educational programs includes the life goals of high school students, the resources they have at hand, and the way they plan to engage in activities where they will be able to implement their customized programs².

The Universe university gymnasium in Krasnoyarsk has implemented the model of high school as a school of customized educational programs. A comparative study was carried out to test the model's efficiency.

Implementing the Model in Universe Gymnasium

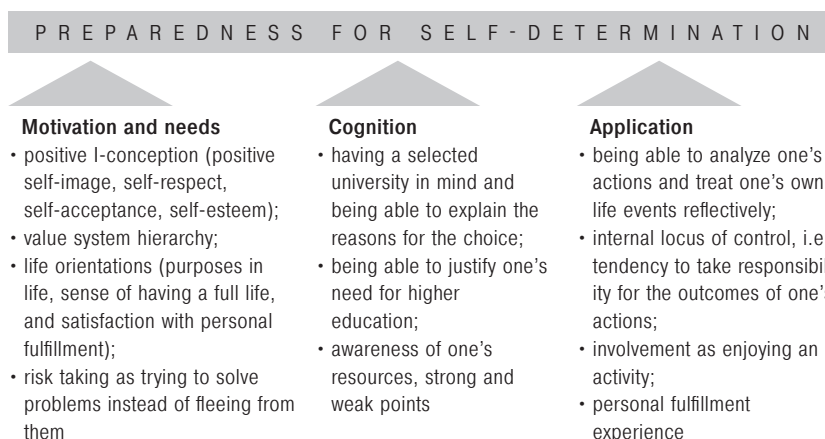
The experimental group covered 124 students of Universe gymnasium, while the control group included all students of the same cohort in two neighboring schools of the same city district (91 students). Thus, both experimental and control groups had the same school infrastructure (institutions of supplementary education, cultural venues, and clubs) and even living conditions—all students lived in standard apartment blocks. The total sample included 215 high school students. 93 Universe gymnasium teachers participated in developing organizational and pedagogical conditions conforming to the model of customized educational programs: class advisors, social activity tutors, lab teachers, and subject-specific teachers.

The performance of the model under examination was measured by the preparedness of the student for self-determination as the main high school educational outcome. Preparedness for self-determination is an integrated factor that predicts the success or failure of the self-determination process. It implies sufficient maturity in terms of motivation, values, and cognitive and practical skills to develop and realize intentions and aspirations. There are three components of preparedness for self-determination in early youth: motivation and needs, cognition, and application [Chistyakova, Shurkina, 1997] (Fig.2).

The study used a before-and-after experimental design. The two groups of students were tested using the same set of diagnostic methods. Next, one of these groups received an experimental intervention, and both groups were tested again using the same methods. Preparedness parameters in the control and experimental groups

² See [Sergomanov et al., 2004] for a more detailed description of an age-oriented high school.

Figure 2. **Model of high school student preparedness for self-determination**



were measured upon entry (at the end of Grade 9) and exit (at the end of Grade 11).

A battery of diagnostic methods was used to evaluate the preparedness for self-determination:

- To test the motivation and needs component: personal value orientation structure diagnostics by S. Bubnova³; self-image investigation method by S. Panteleev⁴ (“self-respect”, “self-affection”, and “inner insecurity” scales); viability test [Leontyev, Rasskazova, 2006] (“risk taking” scale); a life-orientation test [Leontyev, 2000] (“purposes in life”, “life’s fullness”, and “satisfaction with personal fulfillment” scales).
- To test the cognition component: structured interview.
- To test the application component: life orientation test (“internal locus of control” and “external locus of control” scales); structured interview; viability test (“involvement” scale); reflection assessment method by A. Karpov and V. Ponomareva [Karpov, 2003].

For the purposes of processing statistical data, all parameters were measured in points: 1 point for a low level, 2 points for a medium level, and 3 points for a high level. The level of preparedness for self-determination was calculated as the sum of all points obtained. Table 1 shows the entry and exit results for the experimental and control groups as a percentage distribution among the three levels.

At the start of the survey, it was only the motivation and needs component in which students in both experimental and control groups

³ http://www.miu.by/kaf_new/mpp/025.pdf

⁴ <http://testoteka.narod.ru/lichn/1/41.html>

Table 1. Preparedness for self-determination (by components) in the experimental and control groups before and after learning, according to the model of customized educational programs (%)

	Motivation and needs			Cognition			Application		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
Experimental group before	3	91	6	4	74	22	15	80	5
Experimental group after	0	55	45	2	57	41	2	75	23
Control group before	9	85	6	53	43	4	56	44	0
Control group after	3	87	10	42	54	4	43	56	1

Table 2. Bottom-line changes from entry to exit values (by components), %

	Motivation and needs			Cognition			Application		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
EG	-3	-36	+39	-2	-17	+19	-13	-5	+18
CG	-6	+2	+4	-11	+11	0	-13	+12	+1

did not differ substantially. Because the parameters in the other components were different before applying the model of customized educational programs, Table 2 presents the bottom-line changes in percentage upon exit across the components.

The analyzed data demonstrates that the experimental group shows a considerable growth in the number of students who achieved a high level in all the three components of preparedness for self-determination, while the control group only shows an insignificant increase in the proportion of highly prepared students and a slightly higher increase in the proportion of moderately prepared students.

Thus, we found significant differences in all three components of preparedness for self-determination between high school students of the experimental and control groups: motivation and needs, cognition, and application.

On these grounds, we can assert that the problems of developing world outlooks, moral conscience, and preparedness for self-determination among high school students can be solved more efficiently in institutions based on the age-oriented model of customized educational programs. The model owes its success largely to joint efforts in creating organizational and pedagogical conditions that ensure the implementation of customized educational programs and teacher guidance.

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Always Online:

Mobile Technology and Social Media Usage by Modern Teenagers at Home and at School

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Abstract. Students of Moscow schools and other educational institutions between the ages of 16 and 18 years old were surveyed to assess how Russian schools use modern methods of e-learning, mobile technologies, and social media in the learning process. The sample covered 3,194 respondents. The study describes three waves of Russian school informatization and the challenges the system has been facing over the last five years: the extensive use of mobile phones and PDAs with high-speed access to the Internet by students and the active use of social media services for

communication, search, and the storage of information. The article demonstrates the obvious progress of the schooling system: present-day teachers communicate with their students via email and social networks and occasionally give homework assignments to be done online or using Internet services. Yet, the school remains an extremely conservative institution. The education system is insensitive to the rapid development of technologies, and the process of modernization is essentially inhibited by sticking to conventional teaching practices and ignoring innovative ones.

Keywords: school, innovation in education, social media, teenagers, e-learning, informatization of education, ICT, digital technologies.

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According to an OECD report, Russia is ranked 5th among 29 countries in the overall level of innovation in school education [OECD, 2014]. The list of nine innovations in Russian school education includes, among other things, encouraging a more active use of computers as a source of information in the learning process and providing access to the Internet in class. The OECD data does not reflect the existing situation; instead, it focuses on the progress the education system made in 1999–2011. This suggests that the government's programs for computerizing and later informatizing school education, which were launched in the mid-1980s, have achieved their goals at least in part. Meanwhile, computer and Internet services have made much progress over the last five years. Education has been witnessing such trends as using PDAs, mobile apps, social media, and other types of e-learning. The efficiency of using these innovative practic-

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es is discussed online, in innovative teacher communities¹ and research articles [Boyd, 2014, Stockwell et al., 2015; Newhouse, Cooper, Pagram, 2015]. Such educational technologies are also new to the West, where it has been adopted only occasionally and not on a massive scale.

There are virtually no published studies analyzing e-learning practices in Russian schools, except for describing isolated cases. This research was aimed to see from the perspective of students how state-of-the-art technologies are being accepted by the modern school and applied by teachers.

1. Three Waves of Russian School Informatization

The first wave of mass computerization in educational institutions dates back to the 1980s. Federal reforms equipped schools with basic computers. This was later undertaken at a regional level. Including informatics in the learning process was a key component of the 1984 education reform. It only took one year to elaborate the curriculum and retrain teachers of the new subject; student and teacher guides were promptly developed, too. The Ministry of Enlightenment arranged regular advanced teacher training courses, and teacher-training universities established departments of programming and computational mathematics. Lessons in informatics were introduced in general education schools on 1 September 1985. The curriculum was rather narrow, designed not to develop computer-using skills, but to teach programming language and algorithms.

The second wave of informatization began in the 1990s. The authors of the report entitled *Information Technology as a Means of School Transformation* stress that informatization is not just equipping schools with computers, but providing convenient resources for learning in the first place [Froumin, Avdeeva, Vasilyev, 2005]. The authors also contend that the immediate objective of informatization is to achieve specific educational outcomes:

- development of IT literacy in a broad sense;
- development of certain skills and key competencies, such as the interactive use of existing operating tools and working in teams;
- transit from absorbing information to producing knowledge;
- creative application of knowledge in practice.

In her *25 Years of Russian School Informatization*, Marina Tsvetkova describes the progress made by the Russian education system

¹ Facebook page for eLearningIndustry (171,000 users): <https://www.facebook.com/eLearningIndustry>; forum on Pedsovet.org entitled Blended Learning: <http://pedsovet.org/forum/topic11274.html>; Facebook group entitled Innovators of Education (2500 users): <https://www.facebook.com/groups/edinovators/?fref=ts>

as a transfer from computerization to creating a unified information learning environment [Tsvetkova, 2010]. The goals of informatization evolved along with the development of hardware. At the very beginning, informatization was mostly aimed at computerizing schools, especially rural ones, and there was on average 1 computer for every 70 students in the country [Boldov et al., 2002]. However, it was only in 2010 that the modern student working place was described as having one computer for each student (model 1:1) [Asmolov, Semenov, Uvarov, 2010]. The main federal informatization programs—the Education System Informatization Project sponsored by the World Bank, stages I and II of the Federal Education Development Dedicated Program², the Education National Priority Project³, the Federal Dedicated Program “Development of a Unified Information Learning Environment for 2011–2005”,⁴ and the Federal Dedicated Program “Development of Informatization in Russia for the Period up to 2010”—were completed by 2010. Several large-scale school informatization-related projects have been implemented over the last five years (2010–2015), such as the introduction of electronic student notebooks⁵ and electronic textbooks⁶, but no integrated initiatives have been introduced so far. The top priorities of informatization are determined today at the regional level, meaning that programs differ depending on the regional policies.

Meanwhile, computer and Internet technologies are developing rapidly, with 2010–2015 witnessing a major progress in access to the Internet, information transmission rates, accessibility of the Internet, and the range of Internet devices.

The third wave of informatization, which consisted of the appearance of student PDAs in the school environment, was not initiated by the state but instigated by mobile device users, i. e. students themselves. The most significant changes to the modern school IT land-

² Resolution of the Government of the Russian Federation No. 803 “On the Federal Education Development Dedicated Program for 2006–2010” from 23 December 2005.

³ Education National Priority Project. Official website of the Presidential Council for Implementation of National Priority Projects and Demographic Policy: http://www.rost.ru/projects/education/education_main.shtml

⁴ Resolution of the Government of the Russian Federation No. 630 “On the Federal Dedicated Program “Development of a Unified Information Learning Environment (2001–2005)” from 28 August 2001.

⁵ Letter of the Ministry of Education and Science of the Russian Federation No. АБ-147/07 “On Methodical Recommendations for Introduction of Electronic Gradebook Keeping Systems” from 15 February 2012. Letter of the Ministry of Education and Science of the Russian Federation No. АК-3358/08 “On Adjustments to the Methodical Recommendations for Introduction of Electronic Gradebook Keeping Systems” from 21 October 2014.

⁶ Proceedings of the working meeting between the managers of the Ministry of Education and Science of the Russian Federation and major Russian publishing houses: <http://минобрнауки.рф/с/новости/4298>

scape include, firstly, the mass distribution of smartphones—understood as mobile phones featuring PC functions⁷—meaning that students often have more advanced devices than those offered by schools, and, secondly, the active use by students of online resources from mobile or desktop devices, particularly social media, for communication, search, and storage of information [EU Kids Online, 2009; Tsymbalenko, 2013; Pew Internet Research Center, 2015].

At this stage of informatization, Russian schools faced a number of challenges and changes they were not prepared for: the outdated computer fleet formed during the second wave on the one hand and PDAs in every student's pocket on the other hand. This is typical not only of the Russian education system, as the extensive use of mobile technology by students can be found in all developed countries. A different question is how schools and the system as a whole respond to these changes.

2. Information Technology and Innovation in Education

The world has been seeing more and more educational innovations that take into account the increasing use of the Internet and mobile devices by modern school students. For instance, the BYOD (Bring your own device) policy suggests that students use their own gadgets in the class to find information, watch videos, etc. It has been empirically proven that BYOD has a positive effect on student motivation, creating a supportive learning environment and thus improving education outcomes [Rau, Gao, Wu, 2008; Hwang, Chang, 2011]. Researchers from Singapore University also believe that mobile technology in the classroom helps students enrich their experience significantly and apply their knowledge in practice [Menkhoff, Bengtsson, 2012]. By using PDAs, school students learn to manage their out-of-class learning more efficiently and obtain necessary information in digestible formats (from video resources, articles, chats, etc.), which is particularly important for students with learning disabilities [Ibid.]. UNESCO Policy Guidelines for Mobile Learning say, "In a world that is increasingly reliant on connectivity and access to information, mobile devices are not a passing fad. As mobile technologies continue to grow in power and functionality, their utility as educational tools is likely to expand and, with it, their centrality to formal as well as informal education" [UNESCO, 2013]. Naturally, BYOD has its limitations, in particular those related to the problem of equal access: the proportion of middle and high school students who do not have mo-

⁷ According to the Teenager Research Unlimited (TRU) international research conducted by the TNS research group, 90% of Russian teenagers aged between 12 and 19 have their own mobile devices to access the Internet. The research in Russia represents 12–19-aged teenagers living in cities with a population over 100,000. The data was gathered from 1,500 online interviews and a 40-minute questionnaire.

mobile devices is pretty small, but still not zero in most developed and developing countries.

Another example of using modern technologies in the learning process is the flipped classroom format, which reverses instructional and homework elements of the traditional educational arrangement. Students study theory (lectures) at home using online resources, often in form of multimedia, thereby devoting in-class time to dealing with practical tasks. Researchers identify the following advantages of this method:

- the opportunity to catch up for students who missed one or more lessons (detailed description videos as a special kind of lectures have an absolute advantage over textbooks);
- more time for teacher-student interaction and teamwork in the classroom;
- the possibility to refer back to previously covered material or source files, e. g. when preparing for a test or exam [Estes, Ingram, Liu, 2014].

The authors believe that the flipped classroom strategy allows students to better absorb theoretical and practical knowledge and engage in the learning process more actively, which improves their education outcomes.

In many developed countries, the new stage of informatization began with the acceptance of e-learning, which includes distance, mobile, and virtual learning, and represents a major trend in the innovative development of education.

The UNESCO website borrows the definition of e-learning⁸ from several sources. In simple terms, e-learning comprises learning activities carried out with the use of Internet technologies. It is not only about using desktop computers at school, but also about mobile learning (m-learning), web-based training (WBT), working with e-materials independently using one's own PC, portable PC devices, and other products. In terms of problem solving, e-learning is an opportunity to receive advice and grades remotely; a possibility of interacting remotely with teachers or other users doing a common task, including with the help of communities (social media); and a source of self-education.

Therefore, e-learning is about creating a specific environment that differs from conventional in-class learning in the very methods of learning and serves to attain new educational outcomes.

⁸ UNESCO (2015) E-learning: <http://www.unesco.org/new/en/unesco/themes/icts/e-learning/>

E-learning considerably expands the range of tools applied, going far beyond school desk computers. Teachers have not yet familiarized themselves enough with the existing computer equipment, let alone the latest educational technologies that imply thinking at the level of using Internet services available on various types of devices. This problem is not a unique feature of Russian schools. Although most European schools are equipped with state-of-the-art hardware and connected to the Internet, digital technologies are exploited very sporadically in the learning process and their use depends largely on the teacher and school administrators, according to the European Commission report *Benchmarking Access, Use and Attitudes to Technology in Europe's Schools* [European Commission, 2013]. The OECD survey shows that the introduction of ICT in educational institutions is lagging behind the technologies used by school and university students at home. The fact that most students who have access to school computers use ICT very little at school is most probably explained by the incomplete integration of modern technologies in teaching [OECD, 2012]. According to PISA, the correlation between academic performance and using a PC at home is stronger than that between academic performance and using a PC at school [OECD, 2009].

The reluctance of teachers to use modern technologies in their everyday teaching practices can be explained by a number of factors, such as the existing “digital gap” between teachers and students and the lack of motivation for using innovative methods. Yet, a key role is played by the lack of a single integrated e-learning policy pursued by the education system as such.

In the National Education Technology Plan, the U. S. Department of Education recommends applying services used in everyday life and at work to the learning process in order to enhance the quality of education [United States Department of Education, 2010]. The recommendations mostly concern using social media, notably Facebook. South Korea's SMART Education Strategy implies using e-learning tools to do over 50% of school homework assignments. Korean schools engage actively in modern education programs, such as blended learning, m-learning, etc. [Hwang, Yang, Kim, 2010]. According to the data of PISA-2009, Korean 15-year-olds topped the digital literacy ranking⁹. Under the conception developed by the European Commission, teacher training in ICT involves not only training teachers to use school computers so as to organize the learning process or develop courses and educational software, but also teaching them the basics of e-learning. Thus, teachers should be able to learn new software quickly, assess the prospects

⁹ Participation in the additional PISA-2009 IT literacy survey was optional. Russia participated in the PISA-2009 reading literacy test.

of its usage, and manage independent and distance learning, etc. [European Commission, 2013].

The present-day Russian education policy in e-learning is full of contradictions. The Ministry of Education and Science of the Russian Federation issued an order on applying e-learning by educational institutions in 2014¹⁰. The recommendations include content filtering by Internet service providers. Not just computer games and social media are banned, but other resources as well¹¹. As a rule, websites are blocked for all computers in an institution, i. e. for both students and educators. Meanwhile, it is a widespread practice for schools to have a social media profile of their own; the ministry and many education departments even have two or more accounts in different networks¹². More and more teaching practices suggest that teachers use social media to communicate with students, evaluate assignments, and supervise projects [Koroleva, 2015; Klimenko, 2012; Feshchenko, 2011]. However, if a teacher is unable to access social media from a work computer, they will have to use their home PCs or personal mobile devices. The procedure for calculating the teaching load remains unclear in this case. As for students, most of them have their own mobile devices with access to the Internet, so they do not need to use school computers. Access restrictions for students devolve into hurdles for teachers working with online services.

Every school principal and teacher searches for their own solutions in this situation, which means that the introduction of innovation depends on the personal attitudes of teachers or principals. While some teachers try to adopt the BYOD strategy, others collect mobile devices at the beginning of each lesson. This means that the technology that saturates the modern school environment remains unexploited. Western schools are adapting to the extensive use of mobile devices by students and trying to use the potential of technologies for educational purposes, while Russian schools are missing out on this opportunity.

This empirical study seeks to assess how Russian schools use modern e-learning technologies through the eyes of students. From the wide variety of e-learning tools, we focus on using mobile technology and social media in education.

¹⁰ Order No. 2 of the Ministry of Education and Science of the Russian Federation “On Approving the Procedure for Applying E-Learning and Remote Teaching Technologies in Education Programs by Educational Institutions” from 9 January 2014.

¹¹ Federal Law No. 436-ФЗ “On Protecting Children from Information Affecting Their Health and Development” from 29 December 2010.

¹² Moscow Department of Education: <https://www.facebook.com/obrazovaniya.department>

4. How Modern Teenagers Use Mobile Technology and Social Media at Home and at School

The research was conducted as part of the panel longitudinal project “Monitoring Educational and Labor Trajectories” in 2014¹³. The data was gathered by surveying 16–18-year-old school students in Moscow. The sample covered 3,194 respondents: 1,444 boys (45.2%) and 1,750 girls (54.8%). Stratified random sampling by administrative districts in Moscow was used to ensure representativity. The questionnaire consisted of sets of questions about using e-learning tools in the classroom, when doing homework, and in self-education.

4.1 Research design

The questionnaire was designed to find answers to the two main questions.

1. How teenagers use modern digital technologies in everyday life:
 - availability and types of personal devices to access the Internet;
 - incidence of using gadgets at home and at school;
 - using Internet services for communication.
2. How modern digital technologies are used in the classroom, for homework assignments, individual studies, etc:
 - using school desk computers (problems solved with their help);
 - school policy regarding the use of mobile devices (rules and restrictions);
 - making use of personal mobile devices in lessons;
 - using Internet services for student-teacher communication;
 - doing homework online or using the Internet.

4.2. Survey results

At the moment of the survey, 2,491 respondents (77.9%) were high school students, 637 (19.9%) were obtaining a secondary vocational education, and 34 (1.1%) were university students. All respondents had lived and studied in Moscow: most (64%) since birth, 15% for over 11 years, 8% for 6 to 10 years, and 8% for less than 6 years.

4.2.1. Use of modern digital technologies by teenagers in everyday life

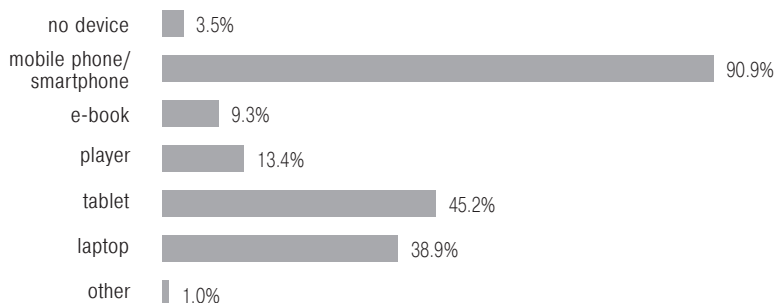
Only 3.5% of respondents gave a negative answer to the question “Do you have mobile devices or gadgets that allow you to access the Internet using a wireless or cellular connection outside your home?” Most students named mobile phones (91%), and the next most popular answers were tablets (45%), laptops (39%), and other devices. Students were allowed to choose multiples answers from the list, and most of them (74%) named two types of devices (Fig. 1).

While at home, 50% of young people keep using their mobile devices or other personal gadgets to access the Internet, 25% of teenagers use desktop as well as mobile devices equally, and 22% of respondents prefer using desktop PCs.

Vkontakte is the most popular social network among teenagers, being named by 91% of respondents, and followed by Instagram (50%) and Facebook (28.5%). Only 3% of students do not have any

¹³ The project has been implemented since 2009 by the Center for Cultural Sociology and Anthropology of Education at HSE’s Institute of Education.

Figure 1. **Availability of mobile devices or gadgets allowing teenagers to access the Internet using a wireless or cellular connection outside their homes** (N = 3,194)



social media account. 86% of respondents regard their Vkontakte accounts as primary accounts for communication¹⁴, with 73% reporting to have one account in the network and 23% claiming to have two or more. Most students signed up at the age of 12 and became active users within 2 years on average (at age 14). About one third of the surveyed teenagers (33%) are friends with their parents in social media, while 28% say their parents have no social network accounts. 25% of respondents are not friends with their parents even though the latter are also on Vkontakte. A small proportion of students (6%) do not know whether their parents have social media accounts, the majority of such students being boys.

Most respondents (70%) answered positively to the question whether they used mobile phones or other gadgets in the classroom to find learning-related information (except when asked to do so by teachers). 25% of respondents gave a negative answer, and less than 5% found it difficult to answer the question.

The same 70% of respondents use mobile phones or other devices in the classroom for non-learning related purposes (e.g. to play games, surf social networks, listen to music, etc.). 28% of them chose the option “Yes, I do, but only in some classes/courses”, 8% opted for “Yes, I do so in almost all classes/courses”, and 34% answered “Yes, I do, but very rarely.” “No, I never do that” was chosen by 27% of students (Fig. 2).

Only 10% of respondents reported that their schools allowed students to use gadgets in the classroom. Using mobile devices in the learning process is banned for most students (85%). Also, 55% believe that “this is forbidden, but some still do it”, 20% answered that

4.2.2. Using modern digital technologies in the classroom and in independent studies

¹⁴ “The account that contains the maximum of personal information about you, the one you use for messaging, etc.”

Figure 2. **Using mobile phones and other gadgets in the classroom for non-learning related purposes** ($N = 3,194$)

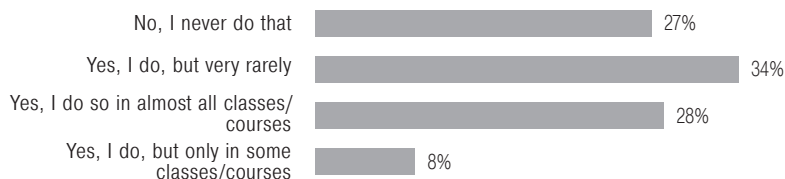
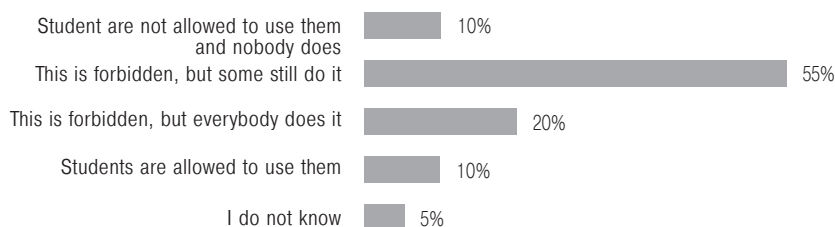


Figure 3. **Overall possibility of using personal mobile devices or gadgets in the classroom** ($N = 3,194$)



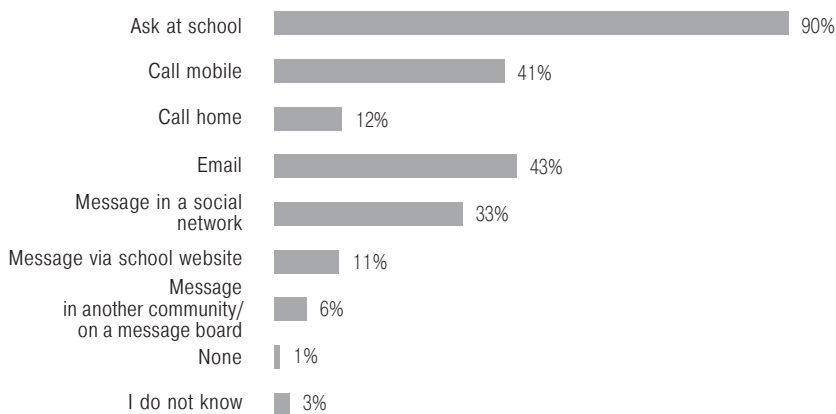
“this is forbidden, but everybody does it”, and 10% said that students were not allowed to use their own devices in the classroom and everybody followed the rule (Fig. 3).

Concerning the use of personal mobile devices in the classroom for learning-related purposes, the answers were distributed as follows: most students (44%) said they were rarely given tasks implying the use of their own gadgets in the lesson, 27% said they were never given such tasks, and 18% said they used their own devices to help teachers find information quickly.

No differences in the frequency of using gadgets for entertainment or learning purposes were found between students of different types of educational institutions (general education school, specialized general education school, gymnasium, lyceum, etc.), except for cadets who use their mobile devices more often for entertainment than for searching for learning-related information. The only group we managed to identify in the total sample based on the gadget using parameters includes students taking part in academic competitions, who demonstrate a lower incidence of using mobile phones or other gadgets in the classroom. Boys tend to use gadgets for entertainment slightly more often than girls.

An analysis of the relationship between academic performance and the incidence of using gadgets in the lesson without teacher permission produced no statistically significant correlations, regardless of whether devices were used for entertainment or for learning-related purposes.

Figure 4. Means of teenager-teacher out-of-class communication
(N = 3,194)



More than half of the respondents (56%) reported that computers and other devices (laptops, tablets, etc.) could only be accessed in informatics classes to solve relevant problems. 16% of respondents believe that hardware is accessible in many classes but only to perform assignments given by the teacher. 4% (201 students) reported to have no computer equipment at school (mostly in the Cadet Corps).

Access restrictions on school computers and other devices were reported by most teenagers: 44% pointed to restrictions on using social media, 35% on playing online games, and 33% on accessing other Internet resources. 14% of respondents stated that they had no such restrictions at school and thus could browse any websites. A tangible proportion of students (11.4%, or 365 respondents) chose the option “I do not know”.

The question “What are ways to ask most of your teachers questions out of class?” produced the following distribution of answers: the most popular answer was “Ask at school” (90%), followed by “Email” (43%), then “Call mobile” (41%), “Message in a social network” (33%), with minor options being “Call home”, “Message via school website”, “Message in another community/on a message board”, and “None” (1%) (Fig. 4).

The questionnaire also asked students whether their teachers had social media accounts, whether students added their teachers as friends, and whether they were ready to show their personal pages and information to teachers. 45% of teenagers answered “Yes, some teachers have social media accounts and I am friends with some of them.” 27% chose the answer “Yes, some teachers have social media accounts, but I never add them as friends or accept their friend requests.” 10% of students believe that “most of my teachers have no social media accounts.” 18% of respondents answered “I do not know if any of my teachers has a social media account.” 6% of teenagers

confirmed “Yes, they do, and I am friends with some of them on my other account.” Participants of academic competitions also stand out here, adding their teachers as friends much more often.

Answers to the question “Do you use social media to search for learning-related information?” were distributed as follows: “Yes, often” (44%), “Yes, but not often” (37%), “No, never” (17%), and “I do not know” (2%). Homework assignments are performed online or using the Internet “about once per week” by 21% of respondents, “two or three times per week” by 17%, “about once per month” by 16%, “never or almost never” by 14%, and “less often than once per month” by 13%, with 7% of students finding it difficult to answer the question.

4.3 Findings

Our research demonstrates that the majority of Moscow teenagers are totally mobile and autonomous in using electronic devices. They have their own gadgets to access the Internet and prefer using mobile devices even with a PC at home. This may simply be due to convenience and unwillingness to switch between devices or to the pursuit of independence, self-sufficiency, and avoiding parental control. By the age of 12–14, students start using social media actively for communication and learning, with the most popular network being Vkontakte. Respondents report that they use social networks not only for communication and entertainment, but also for finding and working with educational content. Despite an ubiquitous banning of mobile phones in educational institutions, young people continue to use their portable devices. The questionnaire used in the survey did not ask students about the punishment for using gadgets at school, monitoring strategies used by teachers, or ways of getting around those bans. Meanwhile, the survey shows that over half of teenagers use mobile phones in lessons to surf social media, listen to music, etc. However, the same proportion of students said that they used personal mobile devices in the classroom to access educational content. Teenagers participating in academic competitions use mobile phones and other gadgets in the classroom less often. Perhaps the reason is the higher motivation for learning and involvement in the learning process of students preparing for subject-specific competitions. The academic performance of school students is not affected by the incidence of using mobile devices in classes without teacher permission, whether for entertainment or learning-related purposes.

What are schools offering students in this situation? School computers can only be accessed in informatics classes and only to perform relevant tasks. The possibility of accessing the Internet from school computers is restricted. Homework assignments to be done online or using Internet resources are a rare thing. Meanwhile, emailing and social media are some of the ways to contact teachers out of class. Slightly less than half of teenagers said that their teachers had social media accounts and that they were friends with them. Despite the ban on using personal mobile devices in lessons, there are

situations when it is the teachers who ask students to use personal gadgets, but this is more rare. These findings are virtually the same across different types of educational institutions and are thus characteristic of the education system as a whole.

Modern teenagers represent the Net generation: the Internet, mobile devices, and social media are their habitat of comfort. The present-day market of mobile devices, with its diverse selection and relatively low prices, allows almost every student to have a personal gadget. Teenagers report using mobile devices not only for entertainment and communication, but also for learning purposes. Today, the average class of school students is a community of advanced Internet users who are perennially online and switch easily among studies, communication, and entertainment. How is the system responding? Schools artificially create an alien environment for students by denying them opportunities to use mobile technology. School computers are inaccessible for students; computer use is subject to a number of restrictions, in turn making them useless. The survey results show that teenagers continue using their own mobile devices even at home, so it is unlikely that they have much interest for school computers, which are often outdated. At the same time, access restrictions become obstacles for innovative teachers who exploit social media to communicate with their students and try to involve and motivate them by allowing the use of mobile gadgets in the classroom. Yet, the system has also made some progress. Modern teachers communicate with students by email and via social networks, and occasionally give homework assignments to be completed online or using Internet services.

We can thus see a lot of controversy in the attitude of the education system towards using modern electronic technologies. The system survived the first and second waves of computerization, overcoming the resistance of teachers and administrators. However, it has not yet developed a tactic for the new wave of informatization, which has been initiated not by the state, but by students in the context of vast distribution of mobile technology. Conflicting decisions are often taken at different levels, and there is still no consensus about or reasonable regulations for using mobile and Internet technologies in school. These contradictions greatly inhibit the development of e-learning, which has become the new stage of education informatization in most developed countries.

5. Conclusion

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Managing Endowment Fund Income in Universities

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Abstract. In this paper, we discuss the methods of endowment management existing in the world and their applicability to the Russian university system. Endowment spending research focuses on the following issues: reinvesting endowment income; identifying the size of expendable endowment income; using the endowment “body”, not just its income; choosing endowment spending policy, rules and rates; as well as others. We provide an overview of endowment fund financial indicators and endowment spending allocation in Russia.

Based on the example of HSE’s Endowment Fund, we analyze the use of endowment spending rules and a model of financial indicators for 2008–2014. The University’s Endowment Fund spending policies demand implementing a principle of preservation, which may be reasonable in a stable economy. However, the viability of the principle is questionable during a crisis, the more so since the endowment is mostly in rubles. Using net asset valuation methods, the HSE Endowment Fund could provide intergenerational equity with an annual distribution of income in favor of current and next generations.

Keywords: higher education, universities, higher education institutions, endowment fund, endowment income, endowment spending, pact between generations, preservation principle.

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There are a number of issues that universities have to deal with when spending endowment¹ income: capital reproduction, which covers inflation and increases the “body”² of the endowment; managing administrative costs, the size of which should not significantly affect the size

¹ An endowment fund, which was invented to support universities, is a special kind of fund raising charitable donations to finance a university’s activities. Raised money is placed in the trust of an asset management company whose goal is to gain permanent income and transfer it to the university. As a result, donations are added to the fund and yield yearly revenues from trust management. Only earned money is spent, while the “body” remains untouched (except for some minimum rates in accordance with the law).

² The nonexpendable portion of the endowment fund.

of the endowment; balancing income payouts in terms of their frequency, size, spending policies, etc.

The rational use of endowment income in universities has been discussed in scientific literature and tested in applied research. In particular, Nobel laureate James Tobin [Tobin, 1974] introduced the intergenerational equity concept, which is based on spending investment gains on current and future generations in a balanced way. This principle allows universities to preserve and increase their capital for future activities and ensure financial stability at present, as they use up to 30% of endowment income to fill the gaps in their annual budgets [Dyachkova, 2013].

The intergenerational equity concept proposed by Tobin is built around the need to distribute financing fairly between the present and the future through a sustainable use of resources. Each generation should take care of the next: as it receives resources from preceding generations, it should preserve a fair amount of the capital for generations to come, while financing its own activities to an appropriate extent. A fair distribution of resources between generations is only possible if generations are perceived as a collective whole: on the one hand, one cannot only think about his or herself and deprive future generations of funds by spend everything now, but, on the other hand, it is no use putting everything away for later and ignoring present-day needs. Future generations will continue to develop our projects just as we are developing the contributions made by our forbearers. Of course, this principle cannot be enforced in an agreement between generations. It can only be part of the policies implemented by endowment funds.

Contemporary theories discriminate between restricted and unrestricted endowments. The latter may be spent or applied at the discretion of the trustees, while the former can only be used for the purpose indicated in the donation agreement or in the last will and testament of the donor. The Russian institutional environment implies creating special-purpose capital within the endowment fund in this case.

Russian funds and universities have been analyzed to find that most endowments are unrestricted, unlike abroad. In cases where donors indicate specific spending purposes, the money most often goes to human resource development, such as financing for professors and students, as well as to the development and promotion of innovative education programs, libraries, and research. Purposes can be very specific sometimes, like scholarships for a particular category of students or financing a professorship in a specific course or field of study.

In their overviews of endowment income-use practices, foreign experts stress that endowments are often used to support structural units of universities, with the major part of donations still accounting for the university as a whole. Support of individual structural units is less common in Russian universities, since special-purpose capital should be allowed within the endowment fund for this purpose. However, standalone capital funds may be created for specific structural

units. The ratio of unrestricted and restricted endowments is approximately 4:1 (80% and 20%, respectively) in Western Europe, while there is still no uniform ratio model in Russia. The average proportion of restricted endowments across top universities is 30–60%, while some institutions have unrestricted endowments alone.

Modern endowment-spending research focuses on the following issues: reinvesting endowment income; identifying the size of expendable endowment income; using the endowment “body”, not just income; choosing an endowment spending policy; etc. Expert discussion of these issues is based on application practices, which have become extremely vital for Russia as well, because the accumulated experience requires a rational approach to the use of income. Learning from foreign experience helps avoid risks and pitfalls. This article aims to analyze the existing methods of endowment management and the possibility of applying them in a Russian context.

The Ford Foundation established the Advisory Committee on Endowment Management in 1967 [Ford Foundation, 1972] to integrate educational endowment practices. Having analyzed university reports, they concluded that American universities had a low reputation in endowment management. This happened because endowment management is designed to avoid losses and preserve income, while universities find their primary task in maximizing their long-term revenue; they have to increase profit to afford heavy annual expenses while at the same time provide for sustainable growth and a significant increase of the endowment in the future.

One of the key applied questions discussed today by leading expert organizations is which spending rate should be accepted as feasible when distributing endowment income. Experts at the Ford Foundation determined the annual spending rate to be 5% of the endowment. Their recommendations became the standard for most American universities [Mehrling, 2003]. Even with an approximate spending rate of 10% over the last ten years, nearly all universities kept adhering to the “five-percent rule”. As a result, the bodies of endowments increased substantially. This strategy aroused justified criticism in the academic world, and alternative endowment income spending policies are being developed.

New disputes over endowment income spending were raised when a study by the American Council on Education (ACE) found that most American universities had adopted a smooth spending course [American Council on Education, 2014]. The typical smooth spending model consists in using only part of an endowment’s income in profitable years, thus providing a comparably sized cushion for “difficult” periods. This endowment investment strategy on average yields 8% annually, so the 5% model rate is achievable when covering for inflation and necessary administrative costs. Yet, universities lapse from

**Research on using
endowment
income**

the accepted spending policy when predicting long-term endowment income and “body” growth rates: they raise spending rates in times of consistent economic growth, at the same time allowing for additional reserves for less promising years.

Today, everyone understands the need for large-scale research on endowment fund operations, including an analysis of spending policies, based on annual reports prepared by NACUBO³ and Commonfund,⁴ two major corporations. According to reports from 2005–2014, the average return on a university endowment in the US was 7.4%. The lowest rate was recorded in 2009 at –18.7%, and the highest was recorded in 2011 19.2%. The average spending rate over the last decade is 4.5%, with 4.4% in 2014 and \$500M+ in endowment spending over 5% in 2010 and 2011.

According to a survey conducted by the Commonfund Institute in 2012 [Rogers, 2012], most universities stick to one of the following three endowment spending methods: the moving average method, the inflation-protected method, and the hybrid method. In the moving average method, the spending rate (normally 4–5%) is determined depending on the market value of an endowment for a certain period of time, usually 3–5 years. Over 82% of American universities applied this spending rule in 2005 [Subanova, 2011]. The inflation-based approach adds an inflation rate to last year’s spending. The hybrid method combines the first two: the spending rate is defined based on the average market value of an endowment over a certain period of time plus the prior year’s spending adjusted for inflation.

Therefore, as experience in university endowment management has grown and as new challenges emerged, the methods of endowment spending rate calculation improved. Originally, the funds had to assess the viability of spending, offset payouts, and cover for inflation. However, several waves of crisis gave rise to smooth spending strategies, including those using stabilization funds, and to hybrid spending methods that take into account all the factors affecting endowment size.

**Endowment
spending
methods around
the world**

Endowment spending methods may be divided into four main groups, each with specific features.

Simple methods include *spending all current income* (net of endowment management fees) and *deciding on an appropriate rate each year* [Sedlacek, Jarvis, 2010]. The advantage of these methods is they are easy to use. However, the income-based method often restrains the growth of endowment as a whole, shattering the principle of fair distribution of payouts in favor of future generations. The down-

³ National Association of College and University Business Officers.

⁴ Independent nonprofit asset management firm <http://www.nacubo.org/>

side to the strategy of deciding on an appropriate rate each year is that neither consistent payouts nor long-run stability can be guaranteed.

The second category of methods used to determine the expendable endowment includes asset-value-based methods. One option is *using a pre-specified spending rate* from year to year. This includes, in particular, the five-percent rule described above. The Louvre Endowment Fund, for instance, uses a 3% spending rate. Universities define the maximum allowable spending rate as the expected level of return net of endowment management fees and anticipated inflation. The spending rate should be determined very carefully, based on a realistic assessment, and adjusted to every meaningful change in financial market conditions. The spending formula looks as follows:

$$\text{Spending}_{\text{year } n} = \text{Spending rate} \times \text{Asset market value}_{\text{year } n-1} \quad (1.1)$$

The second option based on the market value is the *moving average* method, where the spending rate is applied to the average market value of assets over a specified period of time. This is how the spending formula based on a three-year period looks like:

$$\text{Spending}_{\text{year } n} = \text{Spending rate} \times \frac{1}{3} (\text{Market value}_{\text{year } n-1} + \text{Market value}_{\text{year } n-2} + \text{Market value}_{\text{year } n-3}). \quad (1.2)$$

Smoothing, which results from using the moving average method, provides risk leveling in the highly volatile financial market: the average returns on endowment management were 15.5% in 2013, compared to only 0.3% in 2012.

An advantage of these methods is that they allow for the investing of the aggregate income, which provides for higher returns over time. Additionally, payouts are evenly distributed as to the cost of equity. However, the pre-specified spending rate method has its drawbacks, too: as market conditions are only considered at one specific point of time, payouts may vary greatly from year to year. The moving average method provides a more uniform distribution of payouts, but the whole period of method application may be affected and fast adaptation to growth may be kept down when extreme years enter into the formula.

The third category of endowment spending policies embraces inflation-based methods. They may be of two types: inflation-protected and banded-inflation, the band being calculated using the following formula:

$$\text{Spending}_{\text{year } n} = \text{Spending}_{\text{year } n-1} \times (1 + \text{Inflation rate}). \quad (2)$$

The difference between the inflation-based methods is that the banded-inflation method implies setting the upper (6% of the current endowment value) and lower (3% of the current endowment value)

bounds of spending. Current-year operating costs are planned with adjustments for inflation in case it fits into the specified band, otherwise the upper/lower bound is used.

The strong point of this method is that payouts remain relatively consistent from year to year. However, the asset value is not considered, which threatens the stability of future payouts.

The α - β approach divides an endowment into two funds: the original endowment and the stabilization fund [Mehrling, 2005]. The spending rate α is applied to the first fund and the spending rate β is applied to the second one. Thus we get the following spending rule:

$$(3) \quad \text{Spending}_{\text{year } n} = \alpha \times \text{Market value of original endowment}_{\text{year } n-1} + \\ + \beta \times \text{Market value of stabilization fund}_{\text{year } n-1}.$$

The original endowment is a sum of the initial capital and returns on investment. When the original endowment earns excess income, undistributed profit is invested in the stabilization fund, which can be a source of support in times when earnings are less than expected. Normally, the stabilization fund employs a higher spending rate. The moving average method may also be applied in this rule for either of the funds or both.

The α - β approach ensures relatively consistent payouts from year to year, smooth adaptation to changes in the portfolio market value, and high performance under various market conditions. Yet, it has its drawbacks as well, such as dependence on the weights specified for α and β and sensitivity toward market volatility.

The hybrid methods calculate spending using a formula that combines the consistency factor (last year's spending adjusted for inflation) and the market factor (the long-term spending rate applied to the endowment market value). Such methods are used by the most renowned American universities with huge endowment funds and sometimes even obtain their names from those universities.

The Stanford Rule [Sedlacek, Jarvis, 2010] calculates spending as follows:

$$(4.1) \quad \text{Spending}_{\text{year } n} = 0.6 \times \text{Spending}_{\text{year } n-1} \times (1 + \text{Inflation rate}) + \\ + 0.4 \times \text{Spending rate} \times \text{Market value}_{\text{year } n-1}.$$

The Yale Rule⁵ employs the following formula:

$$(4.2) \quad \text{Spending}_{\text{year } n} = 0.8 \times (\text{Spending}_{\text{year } n-1} \times (1 + \text{Inflation rate}) + \\ + 0.2 \times \text{Spending rate} \times \text{Market value}_{\text{year } n-1}.$$

⁵ <http://investments.yale.edu/>

A rule similar to that of Yale is applied by MIT⁶, where it is referred to as the Tobin Rule.⁷ The advantages of this method include consistent payouts from year to year, adaptation to changes in portfolio market value, and the efficient balance of needs due to the weights assigned. However, we should not forget that a compromise cannot provide for optimum results in achieving any of the key objectives, such as capital preservation, the fair distribution of income between generations, and consistent payouts.

Quite naturally, the endowment spending policies we covered above have a number of peculiarities in Russia due to, among other things, the regulatory framework. For example, specific interpretations of main concepts by Russian legislation should be taken into account (see Table 1)⁸.

Endowment spending in Russia

Institutional peculiarities of Russian financial indicators require a certain adjustment of the methods proposed in order to provide a comprehensive picture of endowment fund activities.

Table 2 shows the financial indicators of several university endowment funds with the highest transparency in accounting. As we can see, the proportion of university costs covered by endowment income rarely amounts to 1% among state universities, with the exception of Moscow State Institute of International Relations (MGIMO), which approaches a rate of 3%. It is also important to pay attention to the low level of trust management income in 2014, which is 4% at an inflation rate of 11.4%.⁹ In contrast, in 2008 most funds earned incomes exceeding inflation. The data table reveals that universities spend much less on trust management fees, management company remuneration, and general and administrative costs than prescribed by law.

It seems to be impossible to identify any systemic approach behind assessing university endowment income (Tables 2 and 3). In addition, donations are obviously inconsistent, which makes it difficult to plan spending.

A big difference between Russian and Western endowment funds is that Russian funds use simple spending rules, either spending all current income (net of endowment management fees) or deciding on an appropriate rate each year. In the latter case, decisions on endowment spending rates and policies are often made by the board of trust-

⁶ <http://web.mit.edu/>

⁷ James Tobin, who won Nobel Prize in Economics in 1981, managed Yale's endowment for many years.

⁸ Federal Law No. 265-FZ (rev. 07/23/2013) "On the Procedure for Endowment Creating and Spending by Nonprofit Organizations", dated 30 December 2006.

⁹ <http://www.cbr.ru/>

Table 1. Interpretation of the main concepts related to endowment spending in Russian legislation

Endowment income	Income from endowment property trust management, as well as part of endowment property as such (no more than 10%), transferred to beneficiary
Income from endowment property trust management	Increase in the value of net assets as a result of endowment property trust management over an accounting period
Trust management fees; general and administrative costs	Endowment fund incurs trust management fees as well as general and administrative costs prior to the distribution of endowment income. Income from endowment property trust management is used to indemnify for losses associated with trust management, such as expenses on mandatory annual financial statement audits incurred by the management company. Where this income is not enough to cover for such losses, endowment income may be used (no more than 1%). Remuneration to the management company is paid from endowment property trust management income (no more than 10%). No more than 15% of endowment property trust management income or 10% of endowment income may be used to pay for general and administrative costs.
Transfer of endowment income to beneficiary	Endowment fund does not have to use all income from endowment property trust management for operating costs and transfer of endowment income to beneficiary. However, at least 50% of such income should be spent every two subsequent years.
Endowment spending	Endowment income should serve purpose stipulated in company's charter, donation agreement, last will and testament, or by the board of trustees. Endowment income shall be spent pursuant to the financial plan of the endowment fund.
Financial accounting	Expenses of endowment beneficiary financed from endowment income, as well as expenses financed from other sources, are subject to separate accounting. Financial statements of endowment beneficiary are subject to mandatory annual audits in terms of endowment spending, if financing of this beneficiary from endowment income exceeds 5 mln rubles in an accounting period.

tees or specially created committees. It is currently too early to discuss the endowment spending methods that are being widely applied abroad and that are based on spending rate, inflation, or average market value. Clearly, the financial managers of Russian universities are not familiar with the latest endowment spending strategies.

So, which activities and structural units of universities are financed from endowment income first and foremost? Table 4 presents the major endowment spending policies identified upon analyzing some of the institutions.

Maintenance of physical resources (especially sports facilities and dormitories) and student support (scholarships, student projects, stu-

Table 2. Financial indicators of endowment funds in 2014

№	Beneficiary	Net asset value as of 12/31/2014, rubles	Income, rubles	Donations, rubles	Return, %	Payouts, rubles	University budget*, rubles	Payments to the budget, %	General and administrative costs, rubles	Management trust fee, rubles	Management company remuneration, rubles
1	MGIMO	1,262,000,000	47,000,000	118,000,000	5.5	80,000,000	2,850,133,000	2.81	N/A	N/A	N/A
2	European University at Saint-Petersburg	1,253,674,313	10,871,692	68,657,000	1.39	67,117,128	381,039,300	17.61	3,260,000	824,546	716,002
3	Saint-Petersburg State University	1,040,360,714	8,829,112	14,855,634	0.84	35,086,391	12,846,124,600	0.27	1,306,900	89,363	357,452
4	New Economic School	329,678,000	N/A	120,000	N/A	28,250,000	442,354,200	6.39	N/A	N/A	N/A
5	North-Eastern Federal University	152,340,023	4,161,232	51,056,610	4.67	4,581,869	5,573,686,500	0.08	571,580	N/A	27,100
6	HSE	92,700,000	2,250,000	55,000,000	3.8	6,130,000	14,962,023,100	0.04	1,500,000	13,700	118,600
7	National University of Science and Technology	68,097,787	1,827,376	32,904,182	4.7	956,090	6,188,513,000	0.02	100,000	28,261	182,737
8	Ural State University	49,889,195	834,081	18,755,551	3.4	1,277,705	8,640,200,000	0.01	36,405	0.00	42,456
9	Tomsk Polytechnic University	16,856,000	527,000	4,926,000	4.42	485,000	6,633,059,200	0.01	291,000	0.00	42,000
10	Southern Federal University	14,566,095	903,336	1,690,000	6.29	0.00	5,920,777,900	0	N/A	N/A	N/A
11	Tomsk State University	10,115,833	485,000	3,798,000	4.31	295,378	5,034,803,800	0.01	N/A	N/A	14,500
12	Peter the Great St. Petersburg Polytechnic University	8,990,067	268,117	358,100	6.94	184,552	7,755,290,200	0.002	424,072	24,721	462,359

* <http://indicators.miccedu.ru/monitoring/>

Table 3. Financial indicators of endowment funds in 2012–2013, rubles

№	Beneficiary	2013				2012			
		Net asset value as of 31 December	Income	Donations	Payouts	Net asset value as of 31 December	Income	Donations	Payouts
1	MGIMO	1,205,000,000	89,300,000	68,200,000	30,000,000	1,091,000,000	78,000,000	221,800,000	45,000,000
2	EUSP	1,213,052,748	96,702,000	97,000,000	39,525,000	831,353,186	67,957,778	62,087,830	18,207,024
3	SPBSU	1,054,180,000	79,120,000	25,880,000	63,508,708	1,012,750,000	63,410,000	281,810,000	3,779,665
4	HSE	43,135,000	2,400,000	0	0	40,700,000	2,800,000	0	0
5	MISIS	34,396,515	689,890	28,360,000	382,725	5,772,831	71,056	2,265,235	0
6	TPU	11,926,000	915,000	1,784,000	915,000	10,146,000	762,000	2,483,000	701,000
7	TSU	6,317,827	474,065	1,313,091	450,000	5,051,319	442,741	484,800	65,000

<http://vo.hse.ru/en/>

Table 4. Endowment spending policies

	Stu- dents	Academic staff	Physical resources	Visiting professors from abroad	Library	Research	Structural units
Financial University*	✓	✓	✓	✓			
MISIS	✓		✓				
HSE			✓		✓		
MGIMO	✓	✓	✓	✓	✓	✓	✓
SPBSU	✓	✓	✓				
TPU			✓		✓		✓
TSU	✓						

* Financial University under the Government of the Russian Federation.

dent mobility, etc.) are the most popular endowment spending categories, while research is financed least of all.

As we can see, Russian universities have not yet come to grip with the endowment spending methods widely recognized abroad, opting for simplified solutions as thus lagging behind modern management technologies.

Recommendations for endowment management in Russia

Let us consider the potential efficiency of universally recognized endowment spending methods for the case of HSE. We will analyze the application of spending rules through the example of HSE's Endowment Fund and simulate financial indicators for years 2008–2014 on the assumption that annual return, trust management fees, management company remuneration, and general and administrative costs remain unchanged.

Table 5 demonstrates financial indicators for the HSE Endowment Fund.

The HSE Endowment Fund determines the endowment-spending rate every year. Endowment income was reinvested in 2008–2013, and the aggregate income of 6.1 mln rubles was distributed to the HSE in 2014. The endowment amounted to 67.5 mln rubles at the end of 2014.

If the Fund had spent all current income instead, its endowment would have been 45.1 mln rubles (see Table 6) with inconsistent payouts from year to year (0–4.5 mln rubles), provided that annual return, trust management fees, management company remuneration, and general and administrative costs remained the same.

In order to use the method based on the value of net assets, we'll define the maximum spending rate as returns minus costs and inflation (Table 7).

Table 5. HSE Endowment Fund financial indicators in 2008–2014*

	2014	2013	2012	2011	2010	2009	2008
Beginning market value (mln rubles)	43.1	40.7	38.0	35.4	30.7	25.6	26.0
Trust management income (mln rubles)	2.0	2.4	2.8	2.6	4.7	5.1	- 0.4
Annual return (%)	3.8	5.9	7.1	7.3	15.3	20.0	-1.5
Inflation rate in Russia (%)*	11.4	6.5	6.6	6.1	8.8	8.8	13.3
Costs associated with trust management and remuneration to the management company, as well as general and administrative costs (%)**	3.7	0.7	0.5	1.1	1.6	2.3	0
Costs (mln rubles)	1.6	0.3	0.3	0.4	0.6	0.6	0
Payouts (mln rubles)	6.1	0	0	0	0	0	0
Ending market value (mln rubles)	67.5	43.1	40.7	38.0	35.4	30.7	25.6

Note: Indicators are hereinafter sorted from the current period back to earlier periods according to the international practice of presenting endowment financial indicators.

* Inflation data was taken from the Official Journal of the Central Bank of the Russian Federation.

** Here and elsewhere this is referred to as "costs".

Table 6. Spending all current income

Indicator	2014	2013	2012	2011	2010	2009	2008
Beginning market value (mln rubles)	15.1	16.0	17.1	18.2	21.1	25.6	26
Annual return (%)	3.8	5.9	7.1	7.3	15.3	20	-1.5
Trust management income (mln rubles)	0.6	0.9	1.2	1.3	3.2	5.1	-0.4
Costs (%)	3.7	0.7	0.5	1.1	1.6	2.3	0
Costs (mln rubles)	0.6	0.1	0.1	0.2	0.3	0.6	0
Payouts(mln rubles)	0.0	0.8	1.1	1.1	2.9	4.5	0
Donations(mln rubles)	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Ending market value (mln rubles)	45.1	15.1	16.0	17.1	18.2	21.1	25.6

Table 7. Maximum spending rate, %

	2014	2013	2012	2011	2010	2009	2008
Annual return (%)	3.8	5.9	7.1	7.3	15.3	20	-1.5
Costs (%)	3.7	0.7	0.5	1.1	1.6	2.3	0
Inflation rate in Russia (%)	11.4	6.5	6.6	6.1	8.8	8.8	13.3
Maximum spending rate (mln rubles)	-11.3	-1.3	0	0.1	4.9	8.9	-14.8

Table 8. “Five-percent rule”

	2014	2013	2012	2011	2010	2009	2008
Beginning market value (mln rubles)	19.8	20.9	21.9	23.1	24.3	25.6	26
Annual return (%)	3.8	5.9	7.1	7.3	15.3	20	-1.5
Trust management income (mln rubles)	0.8	1.2	1.6	1.7	3.7	5.1	-0.4
Costs (%)	3.7	0.7	0.5	1.1	1.6	2.3	0
Costs (mln rubles)	0.8	0.1	0.1	0.3	0.4	0.6	25.6
Payouts (mln rubles)	1.0	1.0	1.1	1.2	1.2	1.3	0
Donations (mln rubles)	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Ending market value (mln rubles)	48.8	19.8	20.8	21.9	23.1	24.3	25.6

Table 9. Three-percent spending rate

Indicator	2014	2013	2012	2011	2010	2009	2008
Beginning market value (mln rubles)	22.0	22.7	23.4	24.1	24.8	25.6	26
Annual return (%)	3.8	5.9	7.1	7.3	15.3	20	-1.5
Trust management income (mln rubles)	0.9	1.3	1.7	1.8	3.8	5.1	-0.4
Costs (%)	3.7	0.7	0.5	1.1	1.6	2.3	0
Costs (mln rubles)	0.8	0.2	0.1	0.3	0.4	0.6	25.6
Payouts (mln rubles)	0.7	0.7	0.7	0.7	0.7	0.8	0.8
Donations (mln rubles)	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Ending market value (mln rubles)	51.3	22.0	22.7	23.4	24.1	24.8	25.6

Due to high levels of inflation, the spending rates is incomparable to the foreign rates of 4–5%, even if we discard 2008 and 2014 as particularly difficult years. Yet, we will still try applying the five-percent rule to the HSE endowment (Table 8).

The estimation demonstrates that the “five-percent rule” is more efficient for capital preservation (48.8 mln rubles) and for an even distribution of payouts (1–1.3 mln rubles) than using all current income.

Table 9 shows estimates for a spending rate of 3%. Based on an estimation of the maximum spending rate, we can say that a 3% spending rate fits the Russian context better than a 5% rate. The ending market value would have been 51.3 mln rubles in 2014, with annual payouts of 0.7–0.8 mln rubles.

When we used the moving average method with a 3% spending rate and market value over a 5-year period, we obtained a result very close to that when we only considered the last year’s mar-

Table 10. **Moving average**

Indicator	2014	2013	2012	2011	2010	2009	2008
Beginning market value (mln rubles)	21.8	22.6	23.3	24.1	24.8	25.6	26
Annual return (%)	3.8	5.9	7.1	7.3	15.3	20	-1.5
Trust management income (mln rubles)	0.8	1.3	1.7	1.8	3.8	5.1	-0.4
Costs (%)	3.7	0.7	0.5	1.1	1.6	2.3	0
Costs (mln rubles)	0.8	0.2	0.1	0.3	0.4	0.6	25.6
Payouts (mln rubles)	0.7	0.7	0.7	0.8	0.8	0.8	0.8
Donations (mln rubles)	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Ending market value (mln rubles)	51.1	21.8	22.6	23.3	24.1	24.8	25.6

ket value: the ending market value would have been 51.1 mln rubles in 2014, with annual payouts at the same level of 0.7–0.8 mln rubles (Table 10).

The α - β approach cannot be applied in Russian practice due to some legal limitations, namely the impossibility of creating a stabilization fund within an endowment.

Inflation-based methods are inapplicable to the HSE Endowment Fund, as they resort to previous spending experiences. Calculations will be inaccurate because endowment income was reinvested for a long time and accumulated the income of previous periods to be distributed to the beneficiary in 2014. Likewise, hybrid methods attributing at least 60% to inflation cannot be applied either.

Having compared income distribution by the HSE Endowment Fund to the potential outcomes of other methods, we can say that the current policy is better than the preservation principle, while the methods based on net asset value could have provided intergenerational equity, with income distributed in favor of present and future generations evenly each year. Capital preservation surely results in the growth of the Endowment Fund. However, the money is lost due to the crisis and endowing the better part of capital in rubles, so the viability of this choice is questioned. A policy like this could be profitable in a stable economy, but is fraught with missed opportunities in case of sharp economic ups and downs.

During the evolution of endowment funds in Russia, the endowment community first learned how to create funds, then how to manage them, and now actively investigates fundraising strategies. So far, many universities have been giving little attention to efficient endowment spending. Chances are that this will take place during the next stage of endowment community development in Russia.

Conclusion

Meanwhile, endowment-spending rules have been established and widely applied in international practice, and researchers in economics and education have actively investigated spending patterns over the last fifty years.

Western universities have been applying market-value-based, inflation-based, and hybrid methods for endowment spending. However, these universally recognized spending rules have not yet made their way to Russia. More importantly, the existing legislative framework and the inconsistency of spending practices make introducing such rules in Russia even more challenging. Russian endowment funds instead decide on an appropriate rate each year or, alternatively, to use all current income net of endowment management fees.

Balancing future and current payouts to ensure intergenerational equity has not yet become the basis for calculating annual spending. However, our analysis of the asset-value-based method proves that even now Russian universities could apply it and thus provide intergenerational equity and consistent payouts from year to year.

Financial managers of universities need to master fine financial tools all owing that not only ensure stability (Russian endowments are still too small to provide this), but also support uncovered activities. Under existing circumstances, federal financing for fundamental and applied research is decreasing, developing human resources and retaining topnotch faculty is becoming difficult, and academic mobility—including the share of foreign students and visiting professors—is likely to decline. This means that universities have to support these activities through available growth and development points. In times of crisis, foreign countries try to expand education investment opportunities for students, families, and businesses, which is not the case with the Russian education system. Moreover, government support in Russia is only focused on specific types of activities and on powerful universities. Even the leading institutions find it difficult to develop human resources, ensure high rates of student mobility, and so forth. As a new financial instrument, endowment funds could help to overcome these difficulties, but even the funds of the top-ranked universities choose to rely upon simple spending rules, which lead them to preserve capital by reducing operating costs. This choice may be described as lopsided, as it curtails the opportunity for buffering against emerging risks. An analysis of Western endowments shows that they assume the function of offsetting external environment risk. The funds of major foreign universities incurred substantial losses due to the financial crisis, but nevertheless these stabilization funds were used by universities to finance their growth points. In no way does this mean that endowment income and endowment “body” should be used to the maximum extent possible. But it does express the fact that the need to balance present and future financing, as articulated by Tobin, is one of the most pressing issues today, and we can clearly see from the HSE case that no optimal solution has been found thus far.

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Fake Academic Degrees in the 18th Century?

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Abstract. Analyzing the most recent historical oeuvres and theses dating back to the 17th-18th centuries, we reconstruct the fundamentals of degree awarding practices used in German universities of the Early Modern Period to understand whether they are comparable to present-day degree fraud practices. We investigate the academic degree concepts accepted in pre-Modern Europe, explore master's and doctoral theses of the 17th-18th centuries, discuss the problem of their authorship, trace back changes in the defense pro-

cedure, as well as the historical and cultural factors which advanced the development of modern doctoral degree. As long as social, cultural, and intellectual transformations that prompted the emergence of the modern academic degree had been completed only by the beginning of the 19th century, we consider it unreasonable to apply the existing scientific and ethical criteria to the degree awarding practices of an earlier era. This does not mean that fake degrees were a rare case or did not exist at all in Early Modern Europe—fraud was just understood in a very different way back then.

Keywords: history of education, history of science, history of universities, culture of the Early Modern Period, academic degrees, defense procedure.

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Germany witnessed a series of high-profile rows a couple of years ago, when plagiarism was detected in the PhD theses of the Minister of Defense and the Minister of Education. Both had to resign due to public outrage¹. Yet, Germany is by far not the only country where fake de-

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¹ The Federal Minister of Defense Karl-Theodor zu Guttenberg sent in his resignation on 1 March 2011 after the German media dubbed him *Baron Cut-and-Paste*, *Zu Copyberg* and *Zu Googleberg* for substantial plagiarism in his PhD thesis entitled *Constitution and Constitutional Treaty. Stages of Constitutional Development in the USA and EU* (Verfassung und Verfassungsvertrag: konstitutionelle Entwicklungsstufen in den USA und der EU), which was defended at the University of Bayreuth in 2007. The Federal Minister of Education and Research Annette Schavan was accused of plagiarism in 2012. Her doctorate from Heinrich Heine University in Düsseldorf, which was obtained 32 years ago upon defending her thesis *Character and Conscience: Studies on the Conditions, Necessities, and Demands on the Development of Conscience in the Present Day* (Person und Gewissen. Studien zu Voraus-

degrees held by politicians and top-level officials have been brought into the open recently. Numerous fake credentials were also revealed in the ruling cliques of Greece, Iran, Kenya, Lebanon, Pakistan, Romania, South Korea, and even in the UK, Ireland, and Sweden with their rich university traditions². The US federal authorities have launched a campaign against degree mills offering university degrees to anyone at moderate prices³. The situation in Russia, although somewhat specific, is not unique: the pseudoscientific fake thesis and fake degree business serving Russian politicians, officials, and otherwise affluent people has also been a focus of close public and state attention⁴.

The mass distribution of fake degrees in today's world is caused by the benefits they can provide. Quite naturally, this raises the question: How fairly were degrees awarded earlier, when a university diploma was not a prerequisite for a high-level position or promotion? The question is not that new to historiography [Hörn, 1893; Bengeser, 1964], but it was long studied within the historiographical tradition that Marc Bloch called *the mania for making judgments*: researchers were looking for the roots of modern procedures for assessing scientific knowledge. The validity of degrees awarded was a minor or even secondary issue for those historians. Instead, they focused their attention on the plots and patterns that could confirm the "glorious past" of their alma mater in one way or another, such as university privileges, academic freedoms, forms of management, public significance, curricula, ceremonies, and a liberal campus life⁵.

setzungen, Notwendigkeit und Erfordernissen heutiger Gewissensbildung), was revoked on 6 February 2013. Her resignation was approved by Angela Merkel three days later, on February 9.

- ² On revealing fake degrees in different countries: <http://www.thenews.com.pk/Todays-News-13-21587-Fake-degree-holders-are-punished-worldwide>; <https://www.insidehighered.com/blogs/world-view/politicians-fake-degrees-and-plagiarism>
- ³ In 2005, the U. S. Department of Education compiled a database of institutions accredited to issue postgraduate diplomas in order to stop the flow of fake PhD degrees issued by unrecognized universities: <http://ope.ed.gov/accreditation/>. Nevertheless, over 100,000 fake diplomas are sold in the country every year at the average price of \$1,000, as of 2010. See: <http://edition.cnn.com/2010/BUSINESS/01/11/fake.college.degrees/>. For a special study on "the degree mill", see Ezell and Bear [2012].
- ⁴ See, for instance, the results of the large-scale Dissernet project (<http://www.dissernet.org/>) and the documents disclosed by the Science Council of the Ministry of Education and Science of the Russian Federation (<http://soveto-po-nauke.ru/>).
- ⁵ This focus on the "glorious past" is quite understandable: universities use history first of all to confirm the high status of scientific knowledge they offer. Actualization of this "glorious past" is most visibly manifested in reproducing the ancient graduation ceremonies, especially in terms of academic regalia (for example, Oxbridge-style gowns and square academic caps almost everywhere), even at very young universities.

However, the past 10–15 years have witnessed a new perspective in studying the history of university degrees. The focus has shifted from tracing the roots and succession to identifying and describing historical peculiarities, allowing for a fresh look at the degree phenomena in the early modern period. As it turns out, the then existing European academic world was totally unfamiliar with today's ideas of the crucial social and cultural functions of a degree, the social role of its holder, the way a thesis should look, its authorship, originality, contribution to scholarship, and the defense procedure. This newly revealed disparity generated a new wave of interest and a number of new studies [Bilder, Daten and Promotionen, 2007; Blecher, 2006; Chang, 2004; Clark, 2006; Der Dokortitel zwischen Status und Qualifikation, 2012; Disputatio 1200–1800, 2010; Examen, Titel, Promotionen, 2007; Füssel, 2006; Promotionen und Promotionswesen, 2001; Wollgast, 2001]⁶.

Yet, both historians searching for the roots of modern academic degrees and those studying the differences between the degrees of today and centuries ago give a rather unambiguous answer to the question raised in this article. Back then, a degree did not always indicate the holder's academic achievements and bore even less evidence of the quality of a defended thesis. To prove this conclusion, researchers refer to early modern-period contemporaries poking fun at the "mania for degrees" that poisoned the university corporation of that time and at academic degrees being conferred to random people as a result of it. There is a popular anecdote about students of a German university who awarded a doctoral degree to a sheep, dressed it in academic regalia, and carried it all over the city, crying, "Please make way for the new academician!" [Andreev, Posokhov, 2012. P. 331]. Moreover, historians agree that theses and degrees were widely sold in German universities of the mid to late 18th century. As proof, they cite dozens of pieces of evidence by contemporaries, including by distinguished scientists and statesmen [Prah, 1978. P. 129; Wollgast, 2001. P. 103–104]. This is most often explained by the overall degradation of universities as centers of scientific knowledge: they remained deaf to new ideas of the Scientific Revolution and the Enlightenment and opposed any changes [Rudy, 1984. P. 87; Andreev, 2009. P. 23]. As a result, the role of universities was played by other intellectual hubs in Early Modern Europe, such as academic communities, academies, and in French salons and English coffee-houses⁷.

⁶ In the vast majority of cases, these works describe German universities, which is no surprise since they exerted the highest influence on the formation of university education and university science as they are now.

⁷ Universities in Revolutionary France were considered to be agents of the old regime and thus were dissolved in September 1793 by a decision of the National Convention [Guillaume, 1911]. However, they remained the principal

Thus, we can see there were perhaps even more fake masters and doctors in Early Modern Europe than today. But what is “fake”? Does it mean that degrees were obtained by deception, in circumvention of established procedure? Or do they only seem “fake” today? Maybe this was not the case centuries ago. What was the case then? In a search for answers, we will analyze the basic components of the academic degree concept and their evolution from the Middle Ages through the Modern Period: requirements for candidates, social status of degree holders, procedure for awarding degrees, thesis papers submitted for defense, and thesis writing practices. The reconstruction is based on studying university degrees in German universities and analyzing master’s and doctoral thesis papers of the 17th-18th centuries.⁸

institutions producing and translating scientific knowledge in German states of the 18th century.

⁸ There was no specific procedure for awarding academic degrees in Russian universities before the late 18th–early 19th centuries. Lomonosov proposed in 1759 that “the [academic] university be entitled to confer degrees in the imperial name” [Lomonosov, 1955. P. 539], but Empress Elizabeth did not endorse the initiative. Neither did Catherine the Great endorse a more detailed proposal that Lomonosov prepared in late 1764–early 1765. He suggested adding the following provision to the new Academy of Sciences privilege project: “6. We hereby allow and order our Academy and University to confer, in our name and under our decrees, academic degrees to all deserving students on the model of Europe, i. e. licentiates and doctoral degrees in law and medicine faculties and master’s and doctoral degrees in the philosophy faculty.” [Lomonosov, 1952. P. 162–163]). In all fairness, the Academy of Sciences granted master’s degrees in Philosophy sporadically, but the procedure has never been described [Ivanov, 1994. P. 12]. The 1755 draft of Moscow University’s charter did not say anything about the procedure for awarding degrees, and no regulations were adopted in the decades that followed [Andreev, Posokhov, 2012. P. 338–356; Feofanov, 2011. P. 131–137]. There were occasional attempts to obtain or grant doctoral degrees with no regulations or traditions, but all were in vain [Penchko, 1963. P. 79, 242, 381–382, 396]. Starting from 1764, doctoral degrees were conferred but only in medicine and only by the Medical Collegium, the predecessor of the Ministry of Health, and not by academies or universities: Catherine the Great granted the Medical Collegium the privilege “to confer doctoral degrees in medicine to all its graduates upon examinations of its own” by her Decree from 9 June 1764 [Complete Laws of the Russian Empire. Vol. XVI. No. 12179] (http://www.nlr.ru/e-res/law_r/search.php?part=71®im=3). It was only in 1791 that Moscow University was also empowered to confer doctoral degrees by the Decree on Granting Moscow University the Right to Confer Doctoral Degrees to Its Medicine Students [Complete Laws of the Russian Empire. Vol. XXIII. No. 16988] (http://www.nlr.ru/e-res/law_r/search.php?part=102®im=3). The right to confer doctoral degrees in law was only granted to the University in the next century, during the education reforms of Alexander I. For an early history of awarding academic degrees in Russia, see [Vishlenkova, Ilyina, 2013; Ivanov, 1994; Andreev, Posokhov, 2012. P. 326–388; Iliina, Wiszlenkova, 2013; Iliina, 2014].

Medieval universities represented corporations of teachers and students, similar to craft guilds, and consisted mostly of clergymen [Uvarov, 2003; Nekhaeva, 2011]⁹. As long as university activities were determined by pontifical privileges, the primary mission of universities was to translate the recognized corpus of knowledge common for all Christians. The Reformation turned universities into competing centers of theological knowledge, whose mission included defending a particular branch of Christianity. From then on, imperial knights governed the activities of German universities. As a result, universities began focusing more on law, medicine, and civil service studies, apart from theology [Hofstetter, 2001. P. 1–2]. Yet, structural and operational differences between catholic and protestant universities were insignificant. Their ideas of academic degrees and awarding procedures also remained similar [Uvarov, 2000. P. 16–19].

Master's and doctoral degrees were not directly related to academic achievements in the Middle Ages and the Early Modern Period. An academic degree was much like a knighthood or monkhood, so obtaining one was first of all perceived as a moral and legal transformation of an individual [Clark, 2006. P. 198], resulting in a new social status comparable to that of gentry. A degree holder belonged to a special class of scholars with specific benefits and wore special academic regalia¹⁰.

Throughout the centuries, the academic degree hierarchy (*baccalaureus—licentiate—magister/doctor*) was more or less the same in different parts of Europe¹¹. The highest were the doctoral degree in faculties of theology, law, and medicine, and the master's degree in faculty of philosophy. Doctor of Philosophy was only introduced in the last decades of the 18th century, while the transitional degree of licentiate entitling to teach (*Patent*) disappeared in most universities much earlier [Kintzinger, 2007]. The procedure for awarding degrees was also pretty much the same. At first, the privilege to confer doctoral degrees in civil law (*doctor legum*) was granted by emperors and doctoral degrees in canon law (*juris canonici doctor*) by popes. Later, when the two branches of law were merged, the degree of “doctor of both laws” (*doctor utriusque juris*) was introduced. In the later Middle Ages, the doctoral degree spread to cover theology and medicine and become the highest level of the academic hierarchy¹².

1. Academic Degree as a Cultural Phenomenon: Middle Ages and Early Modern Period

⁹ For a bibliography of Russian research on the early history of Western European universities, see [Posvyatenko, 2011].

¹⁰ For the evolution of the social role of the doctoral degree and the procedure for its being awarding in German universities before the 19th century, see [Schwinges, 2012. P. 15–23].

¹¹ Admittedly, most German universities did not have the lowest degree of Bachelor.

¹² *Academic degree* will hereinafter refer to the highest academic degrees: Doctor of Theology/Law/Medicine and Master of Philosophy, i. e. those that required a thesis and a public defense.

The procedure for awarding doctoral and master's degrees was referred to as "dispute for a degree" (*disputatio pro gradu*) or "inauguration dispute" (*disputatio inauguralis*). The dispute and the subsequent awarding represented a ceremony held on a holiday in a cathedral or in the specifically adorned main lecture theater of the university. Apart from the candidate and university doctors, inauguration disputes were attended by nobility, city government, and clergy. The ceremonial nature of the event was determined by the important role it played for all three parties to it: the candidate, the faculty, and the academic corporation as a whole [Chang, 2004. P. 134, 140–141]. For the candidate, it was about obtaining a new social status and the associated rights and benefits. For the faculty, it was a considerable budgetary replenishment, in addition to confirming its authority in the academic world. Finally, the academic corporation profited from the new members and the opportunity to get rewards and gifts from candidates. The celebration ceremony after the dispute consisted of a solemn procession, a church service, a public praise of the candidate, a doctoral oath, and transfer of doctoral regalia (*insignia doctoralia*: a book, a ring symbolizing marriage to the Muses, gloves, and a cap)¹³. As a Russian historian summed it up a century ago, "If we put aside various accessories (speeches, disputes, reiterated oaths), the procedure for awarding a doctoral or master's degree consisted in dressing the candidates in doctoral or master's regalia" [Suvorov, 2012. P. 184–185]. As the ceremony finished, music began to play and a celebration feast (*convivium*) began. Actually, the feast also had very much of a ritual, similar to those celebrating new members in a Medieval guild [Ibid. P. 185–187].

The medieval understanding of academic degrees dominated in universities up to the mid-18th century. The degree as a symbol of social recognition, the procedure for its awarding, and the social status of its holder differed much from what we have now¹⁴. The differences come from the nature of society, of which the academic degree makes an integral part. Knowledge developed in a totally different cultural context in Early Modern Europe: secular science was not fully recognized at that time, so its importance and sometimes even existence had to be constantly defended in disputes with Orthodox clergymen [Kivistö, 2015]. The latter would persuade their flock that scientists were guided not by the passion for the supreme celestial truth in their studies but by foul motives like arrogance, vanity, deceitfulness, and greed entailing windbagery, plagiarism, impudence, and idle curiosity [Kivistö, 2014]. When the social status of knowl-

¹³ For doctoral regalia at Cambridge University of the Early Modern Period, see [Stokes, 2009. P. 38–39].

¹⁴ For preserving the medieval symbolism of doctoral degree in the Early Modern Period, see [Füssel, 2006].

edge changed in the last decades of the 18th century, compliance to scientific standards became the decisive criterion in awarding doctoral degrees.

“Today, we understand a thesis as a text written by an academic degree candidate and defended *viva voce* in front of a group of people (thesis committee or scientific community of the university). The form is obvious—text; the author is indisputable—the candidate. The purpose is equally undeniable—obtaining an academic degree, most often a PhD. Although theses may differ in volume and quality, it is assumed that PhD research should make an original contribution to the body of knowledge. These criteria are considered to be self-evident today” [Chang, 2004. P. 129]. This concise definition given by Ku-ming Chang will serve as the starting point for analyzing the specific features of thesis papers and their defense procedure in the Early Modern Period. We will use examples from the history of German universities of the 17th-18th centuries, which are thought to have had largely the same procedure for awarding academic degrees, with some regional and faculty variations [Andreev, Posokhov, 2012. P. 333–336].

2. Theses and Defense between the Middle Ages and the Modern Period

Not everyone could qualify for an academic degree. Knowledge was only one of the requirements, and apparently not always the most decisive one. Mandatory requirements were of a legal, moral, and financial nature: the candidate had to be a Christian born in wedlock, well reputed, well behaved, and officially enrolled at the university (matriculated). Besides this, they should have studied at this university for some time, obtained a previous degree (from this or another university), paid a defense fee to the faculty or university, published their thesis at their own expense, and taken a solemn oath. Lawyers of the 17th–early 18th centuries also believed candidates had to attend the defense in person and satisfy certain health requirements: have no physical handicaps, be of a sound mind, and have the ability to speak and see [Clark, 2006. P. 197–199].

2.1. Requirements for candidates

Of course, there were legally supported exceptions. Thus, legal experts argued that a doctoral degree could be conferred to candidates who had not studied at the university for the required period of time or that did not have a previous degree in special cases—*per saltum*¹⁵. Sometimes degrees could also be awarded without a public defense or even attendance of the candidate—*in absentia*¹⁶. By the 1730s or so, such cases were considered quite legitimate among men

¹⁵ The requirement for candidates to study at a university prior to defending a thesis had probably become more or less ubiquitous by the beginning of the 18th century [Clark, 2006. P. 201].

¹⁶ Conferring a degree *in absentia* suggested that a candidate should send his written oath by mail [Clark, 2006. P. 200]. The practice of awarding degrees

of law [Clark, 2006. P. 217]. Some experts tended to believe a doctoral degree could also be conferred for academic achievements *post-mortem*—in this case all associated benefits had to be granted to the family of the deceased [Clark, 2006. P. 201]¹⁷.

Validation of such cases allowed some universities and faculties not only to grant degrees to influential people, but also to make money, as defenses were expensive. For example, the 1694 statute of the Faculty of Medicine of the University of Halle set the following prices: 20 thalers for admitting a candidate to degree examinations, 20 thalers for “pre-defense” (*examen rigorosum*), 4 thalers for preparing the inauguration program, 10 thalers as a fee to the Chairman (*praeses*), etc. [Chang, 2004. P. 141]. As modern researchers believe, German and especially Prussian universities of the mid-18th century could sell doctoral degrees at high prices not only without a defense, but even without actually enrolling the candidate. The distribution of degree selling practices and the decline of degree prestige are attributed to the decreased status and reduced benefits of nobility to which people with doctoral degrees were supposed to belong [Chang, 2004. P. 165].

2.2. Disputatio and dissertatio

As the written word was not widespread in the Middle Ages, the notions of “the art of reasoning” (*ars disserendi*) and “the art of disputing” (*ars disputandi*) were used interchangeably and implied an oral statement of opinions [Chang, 2004. P. 129]. Accordingly, the notions of *dissertatio* as the subject of discussion and *disputatio* as its form were inseparable, too. For a long time, *dissertatio* did not exist in the form we are used to, meaning as a scientific work. The points to be defended could simply be written by hand and then read aloud to the attendees of the dispute. However, when a pre-published text became a prerequisite for awarding an academic degree in the late 17th century and first half of the 18th century, *dissertatio* and *disputatio* served as interchangeable synonyms in the names of such texts [Chang, 2004. P. 129; Freedman, 2010. P. 98–99]¹⁸.

Because the oral translation of knowledge prevailed in university teaching for centuries, disputes played a great role and were used, just as lectures, to teach all disciplines at all levels¹⁹. Disputes served

in absentia gradually disappeared in German universities in the latter half of the 19th century [Rasche, 2007b].

¹⁷ *Postmortem* degrees are still legalized in some universities. See, for example: <http://www.tacoma.uw.edu/uwt/enrollment-services/procedure-awarding-posthumous-degrees-university-washington-tacoma>.

¹⁸ Since *disputatio* (dispute) is also the term for viva voce defense, we will hereinafter use the word *thesis* (*dissertatio*) to denote the written text and *dispute* (*disputatio*) to refer to the defense procedure.

¹⁹ The importance of dispute as an oral method of knowledge distribution in the Middle Ages was so high that even written genres were built around that

to solidify and deepen the “canonical” knowledge of the Holy Bible, canon and Roman law, schools of thought of Aristotle, Galen, and other universally acknowledged men of wisdom, sacred history, etc. Such solidity was obtained in lectures. High academic performance was most obviously manifested in the ability to debate in accordance with Aristotle’s logic, which formed the basis of education for centuries in preparatory philosophy faculties²⁰. The dispute to obtain an academic degree, assessed as a final examination, was recognized as the highest form of university debate for students²¹.

Until the 17th century, *disputatio pro gradu* had probably only been used to confer Bachelor’s degrees, while the procedure for awarding higher degrees was not that clearly defined [Clark, 2006. P. 203]. When inauguration dispute began to be applied to higher degrees, a specific procedure was established to assign particular roles to all players. Technically, there were two parties to the dispute: the candidate (*respondens*) defending his arguments to be heard by the attendees, and his opponents (*opponentes*)—university doctors—to dispute his arguments. During the dispute, the candidate had to show the ultimate understanding of his subject, the ability to explain his points and prove them with reference to reputed authors, to dispel any doubts and uncertainty the opponents might have around those points, and finally, to prove his points following the law of dialectics. The opponents, in their turn, had to prove the candidate’s arguments wrong and ambiguous following the same law of dialectics, pointing to controversies or even sheer nonsense in the text. In practice, however, there was much more to it than that.

The early printed books preserve images shedding light on who participated in disputes beside the candidate and his opponents. One of the engravings from 1641 shows a spacious university hall with a podium (*cathedra*) in the center, the chairman (*praeses*) on the higher step and the candidate (*respondens*) on the lower. The opponent doctors (*opponentes*) are sitting on benches in front of the two main players, and some very important people are occupying the specially allotted seats in the back and side rows [Clark, 2006. P. 205].

model. *Summa Theologica* by Thomas Aquinas may be regarded as a classical example [Ong, 1982. P. 95].

²⁰ The “Canonical” corpus of university knowledge underwent changes in the context of the Reformation, development of empirical knowledge, and government legislation, and so did the thesis requirements. However, the inauguration dispute procedure transformed very slowly, so it was up to the 18th century that German authors built their polemic tractates following the canon of oral disputes [Chang, 2004. P. 144–145].

²¹ This examination was dubbed inauguration (*inauguralis*) dispute because those who passed it successfully obtained the new status of members of the academic corporation legitimized by all attending and participating university doctors and supported by relevant regalia.

The position of the chairman above everyone else clearly indicates the special role he played in the process. As researchers have recently discovered, his role was, indeed, extremely important and sometimes even decisive in the dispute. Not only did the *praeses* monitor compliance with the established dispute procedure and announce the results, but he also prepared the arguments to be defended by the candidate (i. e. *dissertatio*) in most cases and helped him answer the questions during the debate²². For decades, the *praeses* was the central figure of the dispute, until a new defense procedure was developed towards the end of the 18th century. By the beginning of the next century, the functions of *praeses* transformed into those of a research adviser [Clark, 2006. P. 238]²³.

2.3. From disputatio to dissertatio, from oral to written word

Historically, the defense procedure changed together with the thesis text. First of all, theses grew in volume. Beginning from the mid-17th century, theses transformed from short points covering several pages submitted for discussion into small tractates, including not only detailed argumentation but also appendices and praise to dignitary patrons. There was no way to just read aloud such theses before the dispute anymore. As focus shifted from oral word to the text, lengthy opening speeches and long-drawn debates became superfluous. The latter half of the 18th century introduced a new defense procedure, where the key roles were played by the opponents asking questions on the pre-read text and the candidate answering them. The chairman only performed organizational duties from then on. A thesis paper published and distributed prior to defense was assigned an independent value as a full-blown research paper that did not require extensive oral explanations [Chang, 2004. P. 154]. This way, the written thesis was born from oral dispute for an academic degree [Clark, 2006. P. 204].

Modern theses owe their existence, inter alia, to the fact that the written word gradually replaced the oral word in the scientific discourse of the Early Modern Period. As the Enlightenment recognized human intelligence as the ultimate measure of truth, theses turned from commentaries to the corpus of canonical ideas into the source of new academic knowledge. In the decades that followed, it was the scientific contribution of published and defended theses that became the paramount criterion of assessing not only young researchers, but also schools of thought, faculties, and even universities [Chang, 2004. P. 155–156].

²² The Latin verb *praesideo*, from which *praeses* derives, means “to sit before”, “to preside”, and also “to protect” “to defend”. Some German universities held disputes without *praeses* from the end of the 17th century, but these were apparently very few.

²³ For a detailed analysis of dispute transformations in the 18th century, see [Marti, 2010].

Martin Luther's *Ninety-Five Theses* are sometimes cited as an example of an early handwritten thesis, although they were designed not for an inauguration dispute, but for that of a public university (which never happened, as we know). Having compiled and "published" his theses, Luther was going to prove their points as a *praeses*, while one of his disciples would be his *respondens* [Chang, 2004. P. 145, 147]. The earliest published theses designed for inauguration disputes were no more than defense announcements, which later transformed into thesis title pages [Chang, 2004. P. 147]. German universities published such theses from the mid-17th century. At first, they were referred to as "disputes" (*disputatio*), but the more familiar term "theses" (*dissertatio*) was adopted very soon. Theses were usually published *in quarto*, with their title page specifying the thesis name, university name, names of *praeses* and *respondens*, venue and date of defense, and name of the printing house. Their volume could vary from 20 to 100 pages in the mid-18th century. The structure could also be different: simply a list of arguments, a comprehensive research into something with references to other authors, or something in between.

The surviving documents from that epoch also provide information on the circulation of theses. For instance, the 1737 Statute on Founding the Faculty of Medicine of the University of Göttingen stipulated that out of the total number of thesis copies, 20 would go to the king and his government in Hannover, 7 to the faculty, 10 to the *praeses*, and 6 to other faculty professors—who would obviously serve as *opponentes*. Quite naturally, the candidate would also order some copies for his patrons, colleagues, friends and family, etc. Therefore, the circulation had to be at least 50 copies or more, considering that some of them were sold in bookshops, particularly those with names of famous professors as *praesides* on the title page [Chang, 2004. P. 157].

Of course, it was not only through the fast evolution of printing that the modern understanding of the thesis developed; it was also through substantial transformations in the academic culture as such, particularly the established superiority of text over dispute, the recognition of the candidate as the sole author of a thesis, and the originality requirement. As a result of these transformations, the inauguration dispute as the primary method of candidate assessment was replaced by the thesis in some German universities—especially Prussian universities—by the mid-18th century. The decline of dispute was also prompted by introducing new candidate examinations approved by the state: the pre-defense examination to assess a candidate's level of knowledge (the abovementioned *rigorosum*) and postdoctoral examinations to qualify for medical, legal, and military licenses. Besides, in some universities masters and doctors had to take one more examination—*disputatio pro loco*—to be awarded the title of professor [Clark, 2006. P. 203–204].

2.4. Thesis: form and structure

3. Thesis Authors Among the issues associated with the degree awarding practices of the Early Modern Period, thesis authorship is one of the most discussed [Freedman, 2010. P. 109–110]. The challenges historians face when searching for the answer to this question are not restricted to the fact that there was no clear definition of authorship or legal regulation of copyright at that time. It was also about lacking the idea of an author as an individual person, the sole creator of the work who has exclusive rights and bears responsibility for its content, which is self-evident to us today²⁴. The foregoing applies to such peculiar forms as thesis, too. In order to understand what a thesis looked like in the 17th-18th centuries, what challenges there are to determining authorship, and how important authorship was in awarding academic degrees, let's consider the particular case of *Dissertatio de plagio literario*.

3.1. Dissertatio de plagio literario The thesis entitled *On Literary Theft* was publicly defended in the Faculty of Philosophy of Leipzig University on 6 August 1673. The text was published by a local printing house according to the established procedure and must have been pre-distributed to all designated persons under the university regulations. The title page indicates the genre at the top—*dissertatio philosophica*—then the name of the thesis below—*De plagio literario*²⁵. Next, the name of the *praeses*, Jakob Thomasius (*Jacobus Thomasius*), is typed in a smaller font with a detailed list of his titles. Next come the venue and date of the dispute, and only then the name of the candidate who had to answer publicly the questions from the scientific community (*publice respondendo tuebitur*), Johann Michael Reinel (*Johann Michael Reinelius*). The very bottom of the page bears the name of the printing house and that of its owner (*Lipsiae, Sumptibus Christoph. Enoch. Buchta*). There is nothing extraordinary on this title page, and it may safely be called typical of the epoch. What does distinguish *De plagio literario* from other theses of the time is its volume of 280 pages, which is a few times larger than average.

It is also interesting that the thesis was extremely popular among readers at the end of the 17th century. A second, enlarged edition of *De plagio literario* was published by the same Leipzig printing house in 1679, six years after Reinel's defense²⁶. The endpaper now featured

²⁴ As historians found out long ago, an author is not a supertemporal phenomenon but a changeable product of specific sociocultural contexts, and the past eras understood authorship very differently from today. See two pioneering studies by French historians: [Chenu, 1927; Chartier, 2006. P. 44–77].

²⁵ We have dropped some optional information contained in the title page for the sake of brevity. The full text of the thesis: http://reader.digitale-sammlungen.de/de/fs1/object/display/bsb10528689_00005.html

²⁶ <https://www.deutsche-digitale-bibliothek.de/item/WYOESNQJD55BG5LPK-MYKLBB6FMOXXTRA>

a big engraved portrait of Thomasius dated 1674, and the original text was supplemented by six appendices on 72 pages. The half title before the appendices reads: "Additions to M[aster] Jakob Thomasius's Dispute On Literary Theft (Ad Disputationem M[agistri] Jacobi Thomasiaii De plagio literario accessiones). Thus, the thesis defended by Reinel in 1673 is called a dispute, Thomasius is called the author of the additions, and Reinel's name is not mentioned at all. The second edition was reproduced 13 years later by Jena printing house in 1692²⁷. The title pages of these two re-editions did not change in any way as compared to 1673.

The content also remained the same, representing a detailed explication of literary theft using a scholastic method of argumentation. Plagiarism is defined as consciously concealing the name of the real author of the text being presented by writer, i. e. as a special case of deceit. People of each category have their own sins, says the author, and this particular sin is only characteristic of writers and researchers. After the manner of Aristotle, who identified four causes inherent and identical to every object, the author of this thesis explains the four causes of plagiarism: a moving cause (*causa efficiens*), final cause (*causa finalis*), material cause (*causa materialis*), and formal cause (*causa formalis*). Based on this, he develops various classifications of literary theft and cites numerous examples of each type from works by ancient and contemporary authors.

The success this thesis enjoyed among the reading public was obviously explained both by the overall interest of the scientific community for the subject (ethico-philosophical and polemical tractates of the 17th century explored various kinds of plagiarism, comparing it to theft and disapproving of it in every possible way [Kivistö, 2014. P. 118]) and by the scientific merit of the work, particularly the numerous examples from papers of acclaimed authors. Anyway, the oeuvre by Johann Konrad Schwarz, a professor of Coburg University, published in Leipzig in 1706 and foreworded by Johann Franz Buddeus, a famous theologian, not only had virtually the same title, but also used lengthy quotations from the thesis²⁸. Besides this, *De plagio literario* must have owed part of its popularity to the name of its *praeses*, the renowned scientist, teacher, philologist, Aristotelian philosopher, professor of rhetoric and moral philosophy at Leipzig University, and later Rector of the famous St. Thomas School²⁹.

²⁷ <https://download.digitale-sammlungen.de/pdf/1435304743bsb10651067.pdf>

²⁸ It was titled *De plagio literario liber unus*. See https://books.google.ru/books?id=CHBEAAAACAAJ&printsec=frontcover&hl=ru&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false.

²⁹ Thomasius was one of the scientists who were the first to argue that a thesis should represent an autonomous tractate, rather than short arguments to submit for discussion.

Yet, who ultimately was the author of the thesis successfully defended by Reinel in the Faculty of Philosophy at Leipzig University on 6 August 1673? It appears that no documentary evidence has been preserved. Nevertheless, historians believe virtually unanimously that it was chairman Thomasius who authored the work, and not Reinel who was actually awarded a master's degree in philosophy for the defense. The conclusion seems quite convincing: hardly could a humble student produce a paper demonstrating a masterful command of Aristotelian logic and a brilliant knowledge of works written by dozens of authors both ancient and modern³⁰.

The case of *De plagio literario*'s authorship is by no means exceptional. Historians have enough reasons to believe that until the mid-18th century theses were most often written by university professors presiding over the disputes [Chang, 2004. P. 129], probably for some extra charge [Chang, 2004. P. 151]. In order to understand why such practices were not considered deceitful, we now turn our attention to the requirements candidates had to satisfy in the dispute.

First of all, a candidate had to prove he understood well the competent opinions by Aristotle, Galen, Pliny, and other ancient and contemporary philosophers referred to in his thesis, as well as the arguments stated by the *praeses*, who was the author in most cases. Neither answers to opponents nor the thesis itself were required to make original contributions to knowledge [Chang, 2004. P. 151]³¹. Thus, a candidate only had to defend the points developed by someone else in order to get a degree. The principal "qualifying requirement" for the future doctor or master, apart from showing conversance with the text, was the ability to answer the captious questions of opponents and speak confidently in public. To put it simply, we can say that the *praeses* prepared "examination questions" while writing a thesis [Chang, 2004. P. 151], and the candidate answered them in front of "committee" (with the help of the *praeses*, where necessary).

³⁰ However, modern library catalogues do not agree on who should be considered the author of the thesis. Both names are mentioned in most cases, though in different order: most often Thomasius and Reinel, but Reinel and Thomasius can also be found. Reinel alone is mentioned rarely. In the catalogue of the Library of Congress, the 1679 edition is registered under the name of Thomasius as *praeses*, while Reinel is mentioned in the *related names* section as *respondent*. Yet, the 1692 edition is described as Reinel's work, Thomasius being mentioned as *praeses* in the *related names* section.

³¹ Nor did the originality requirement apply in the late 18th century, when candidates were mostly writing their theses themselves following a plan approved by the professor. The author's main goal was not to contribute new knowledge to the world but to provide another well-reasoned interpretation of universally acknowledged truths.

Some universities held inauguration disputes so often that professors hardly kept up supplying theses. As estimated by Ku-ming Chang, one of the professors of the Faculty of Medicine at the University of Halle advised the thesis research of 159 students during 20 years of working experience at the turn of the 18th century. If we assume that an average thesis had 50 pages and no thesis plagiarized another (although this is known to have been practiced), then he had to produce nearly 400 quarto pages, which makes an impressive volume. Meanwhile, as professors also had to deliver lectures, organize student disputes, write tractates, and preside over university meetings, they did not have that much time for theses [Chang, 2004. P. 153]. However, because there was still no originality requirement, professors could easily modify previously articulated arguments in their new works.

If we compare the number of theses defended in Germany during the 18th century to the overall number of professors, it becomes obvious that the latter were simply unable to generate that many texts. Part of these must have been produced by candidates, but hardly a large proportion. There were also third-party authors, most likely *eruditi viri* with academic degrees and no university positions. At least some historians mention a degree mill (*Dissertation-Fabriken*) that existed in Germany at that time, offering the rich and boastful massive opportunities to buy pre-written theses at fixed prices [Chang, 2004. P. 154; Clark, 2006. P. 208]³².

So, candidates did not normally have to write a thesis to get a master's or doctoral degree in the Late Middle Ages. The only task they had was to defend as convincingly as possible the points formulated by professors during the dispute. It was actually the only way it could be done, as students were not considered capable of writing anything worthy of the scientific community's attention. When a student wrote a thesis himself, it could be perceived as a challenge to that community even as late as the 18th century. Unsurprisingly, when student papers finally began to supersede theses written by professors, the latter started complaining about the loss of scientific quality [Rasche, 2007a. P. 198].

As the 1653 Statute of the University of Marburg put it³³, theses in the Faculty of Divinity had to be written by *praesides*, while students were not allowed to do this (*Ipsi praesides conscribant disputationes: studiosis ne permittant scribendas*)³⁴. If compelling reasons existed,

3.2. Degree mill

3.3. From professor to candidate authorship

³² However, whoever the author was, theses had to be approved by the relevant faculty prior to dispute.

³³ Here and elsewhere, cit. ex: [Hörn, 1893. P. 59].

³⁴ Some universities held disputes without *praesides* beginning from the late 17th century. Yet, it did not necessarily entail the sole responsibility of the candidate for the text, which could be written by a university professor or someone else [Chang, 2004. P. 151].

an exception could be made for students who had studied at the university for a long time and shown the depth of their knowledge, but only upon permission of the faculty (*nisi forte ex singulari eaque gravi causa veteranis, quorum probe perspecta est eruditio, hac parte aliquid de facultatis consensu concedendum iudicetur, idque etiam non crebro*)³⁵. Some later sources also prove that preference was given to professor authorship. Thus, the abovementioned professor of medicine of the University of Halle reported at the close of his days (he died in 1734) to have written most of the theses defended under his advising, while the rest was written by students under plans he developed [Chang, 2004. P. 152].

The transformation of candidates into sole thesis authors was not a linear process, and students as well as professors could be authors in the same university at the same time. Let's consider two theses from the early 18th century cited by William Clark [2006. P. 208–210]. Their distinguishing characteristic is the indication of authorship (*auctor*) next to the traditionally specified names of chairman (*praeses*) and candidate (*respondens*) on the title page. In both cases, authorship belongs to the same person, Johann C. Tschanter, as candidate and author (*respondens et auctor*) on one title page and as author and chairman (*auctor atque praeses*) on the other.

The first thesis, *De eruditibus studiorum intemperie mortem sibi accelerantibus, dissertatio I, eaque historica* (On Scientists who Accelerated Their Own Death with Immoderate Studies. Part I—Historical)³⁶, was presented to doctors and masters of Leipzig University in October 1704.³⁷ The name of the *praeses*, Gottfried Boettner, appears separately on the title page, which most probably means he did not have a hand in the paper³⁸. The second thesis, *De eruditibus studiorum intemperie mortem sibi accelerantibus, dissertatio II, eaque physica* (On Scientists who Accelerated Their Own Death with Immoderate Studies. Part II—Physical)³⁹, was defended in the same place on 30 December 1705, but under the chairmanship of Master Tschanter, who was also mentioned as the author (*auctor atque praeses*)⁴⁰. A certain Johann C. Wolf was mentioned as the candidate

³⁵ Student authorship restrictions were less strict in the faculties of law and medicine: *Studiosis, cum primis veteranis, ut disputationes ipsimet conscribant, easdem a Praeside et Decano Facultatis approbatas imprimi eurent, permittitor.*

³⁶ http://reader.digitale-sammlungen.de/en/fs1/object/display/bsb10642361_00002.html

³⁷ It was only on 1 December 1703 that Tschanter was conferred a Bachelor's degree [Clark, 2006. P. 208].

³⁸ amazon.com (2011 facsimile edition) mentions Gottfried Boettner as the author and Johann C. Tschanter as the creator.

³⁹ http://reader.digitale-sammlungen.de/de/fs1/object/display/bsb11173314_00001.html

⁴⁰ Tschanter obtained a master's degree on 5 May 1705 [Clark, 2006. P. 208].

(*respondens*) on the title page. However, as Tschanter was the author, this Wolf was very unlikely to have been engaged in writing the thesis. Most probably, he obtained his degree for defending thesis points in a dispute, just as the majority of other candidates.

In fact, both parts form a single work, which also points to Tschanter's authorship of both theses, first as the *respondens* and then as the *praeses*. Yet, we cannot say for sure that they were not produced by a humble degree-mill ghostwriter.

Most researchers believe the key social, cultural, and intellectual transformations that prompted the emergence of the modern academic degree happened in the latter half of the 18th century. As a result, the "heroic theater" of oral dispute gave place to the prosaic publication procedure, and the candidate turned from the interpreter of someone else's work into the independent creator of his own scientific text [Clark, 2006. P. 208]⁴¹. The changes were largely promoted by the development of printing and the Enlightenment philosophy that gave powerful rational and secular momentum to scientific knowledge. As a result, the old idea of a doctor as a holder of specific moral and legal status was replaced by the idea of a doctor as a thesis author and creator of new scientific knowledge. From then on, the paramount criteria for awarding the highest academic degree were the candidate's own thoughts, instead of the ability to reproduce the words of others, argumentation, and public speaking skills. As for academic privileges, they faded away with the dawn of the new era that declared the equality of all before the law⁴².

The solemn rituals around the dispute also lost their symbolism and gradually transformed into purely bureaucratic procedures. By 1785, Austrian universities abolished doctoral oaths, which had been an integral part of the inauguration ceremony since the Middle Ages; Bavaria abolished most oaths and academic dresses for doctoral graduates in 1804 [Clark, 2006. P. 202]. Beginning from the 19th century, German universities required a pledge of authorship signed in person instead of an oath of being lawfully begotten [Ibid. P. 210].

Johann Gottlieb Fichte developed new doctoral degree requirements in his *Plan for the Institution of Higher Education to be Established in Berlin* in the early 19th century [Fichte, 2010]. In his work, the philosopher stressed that, apart from examinations (he was talking about candidates for a doctor of philosophy degree, but the require-

4. Development of the Modern Academic Degree

⁴¹ In Clark's opinion, the transfer of thesis authorship from *praeses* to *respondens* had been completed by 1800 [Clark, 2006. P. 238].

⁴² Privileges gave way to meritocratic preferences: as German states nationalized their education, academic titles became officially recognized and provided a great advantage when applying for a public office [Clark, 2006. P. 202, 203].

ments were universal) a candidate had to write a thesis *himself* and defend its fundamental points publicly before the committee. Fichte also argued that the text should not only be assessed in terms of the author's expertise and effort—it also had to be as perfect itself as handiwork by a medieval craftsman.

The new understanding of scientific knowledge and the Romanticist idea of human uniqueness also required for the originality of theses proposed for defense⁴³. Although Fichte believed thesis topics had to be suggested by academic advisers, he also was against advisers acting as chairmen of the defense. Thus, the intellectual merit of a thesis became the key degree-awarding criterion under the new concept, which was soon adopted by the newly created University of Berlin [Clark, 2006. P. 169].

The practical implementation of these ideas dates back to the later period of the mid- to late 19th century⁴⁴. However, there is very little agreement about the historic moment when the present-day idea of an academic degree became common. The only thing researchers agree on is that the process was long and painful. As evidence they refer to Friedrich Wilhelm Theodor Mommsen, a famous historian and professor at the University of Berlin, who wrote angrily about German “factories” producing “pseudo-doctors” as early as 1876 [Mommsen, 1905. P. 402–409].

* * *

After what has been said about the academic degrees of the Early Modern Period and the differences in the rules for awarding them back then and today, it is time to ask whether those degrees should actually be considered as fake? In other words, should we apply the existing scientific and ethic requirements to the degree holders, texts, authors, inauguration dispute procedure, chairmen, opponents, universities, and the overall scientific community of that time? In terms of science, the answer appears quite obvious that indeed we should not, as Early Modern science and the scientific community were much different than what we have today⁴⁵.

The ethic aspect is less obvious, especially in buying theses written by third parties. Was it regarded as a blatant fraud as it is today? This is highly unlikely, because no one made a big secret of it back then. Besides, future masters and doctors were never required to be

⁴³ Fichte formulated the research originality requirement in his *On the Nature of the Scholar* [Fichte, 1806].

⁴⁴ In William Clark's opinion, the mindset of the modern academic community developed between the 1770s and the 1830s [Clark, 2006. P. 220]. However, the present-day understanding of academic degrees dates back to as late as the second half of the 19th century [Schwings, 2012. P. 20].

⁴⁵ For the historical and cultural characteristics of scientific knowledge in the 18th century, see [Porter, 2003].

authors of defended papers. There is also ambiguity surrounding the disapproval of contemporaries regarding the practice of degree buying and selling. What exactly was disapproved? The inauguration dispute itself implied paying a great deal of money to the university. In that sense, candidates “bought” their degrees even when they authored their theses and answered the captious questions of opponents without the help of the *praeses*. Were critics confused by the dispute turning into a formal procedure? Or by the practice of paying extra to buy the favor of the *praeses* and opponents? Or was it a situation where master’s and doctoral diplomas were simply signed by the faculty deans and notarized by the universities? Or was it about “simplified” *per saltum* and *in absentia* procedures? While attempting to answer these questions, we should not forget that Early Modern Europeans traded not only academic degrees, but also public offices, titles of nobility, and forgiveness of sins, making no secret of these either. Those practices were condemned by some sections of society, but were never considered a criminal fraud and even found support from other sections⁴⁶.

The situation regarding the plagiarism of theses was also unclear. Although university professors, as we have seen, criticized it as an unclean practice and sometimes accused their colleagues of it, there are no examples of grave consequences, let alone litigations, for “literary thieves”. Even when plagiarism was detected, it never drew public attention. Apparently, the social condemnation of thesis plagiarism and the purposeful fight against it are relatively new phenomena.

Of course, this does not mean that fake degrees were a rare case or did not exist at all in the 18th century, unlike today; it is simply the case that fraud was understood in a very different way.

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And Never the Twain Shall Meet?

Book review: Jing-Li (2015) Kulturnye osnovy obucheniya. Vostok i Zapad [Cultural Foundations of Learning. East and West]

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Abstract. We fully support the researcher's conclusion that specific features of the mindset and learning attitudes of East Asia should be taken into account when organizing schooling in a multinational community. Meanwhile, we believe the study actually answers a narrower question than stated in the title: namely, it compares the cultural foundations of learning not between the East and the West, but between the tra-

ditional Confucian school and modern American school without regard to education content or curriculum. In the decades to come, we will witness the result of the competition between these two schooling models and learn whether Jing-Li was right with her underlying idea about the advantages of the Confucian approach and her scenario about the decreasing creative potential of Westerners and the atrophy of their research skills due to the attempts of schools to cultivate both.

Keywords: school education, national cultural and educational traditions, Confucianism, abilities, research, creative thinking, morality.

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The author of this book revealed her own culture through authentic sources in the middle of her life, when she had already adopted Western culture from authentic sources in a relevant scope. This process overlapped with a more recent one, associated with a personal teaching experience: while her Chinese peers had been diligent and assiduous in studying, her American school students were indifferent and lazy. At first she would impute this to her inefficiency as a teacher, but later discovered a much broader phenomenon behind this indifference and laziness. Parental instructions, like "Learn, and you will learn you are imperfect", were ringing in her ears. Those were the words of Confucius, as she later learned. Like any cultur-

al effects, they turned out to be more meaningful, powerful, and long-lasting than the influence of political systems and eventually short-lived ideologies.

The Chinese intellectual tradition spread out before Jing-Li in the following way: “1. Learning is the most important thing in life; in fact, it is the meaning of life. 2. Learning makes people better, not only smarter. The ultimate objective of learning is self-perfection and assistance to others. 3. Learning is a lifelong process... 4. The knowledge that differentiates one person from another does not come as it is. It has to be searched for. Searching for knowledge requires a person to be self-determined, assiduous, hard-working, persistent, concentrated, and humble. A human being should have what the Chinese call a ‘heart and mind open for learning’, meaning a passion for learning. 5. Learning is neither a privilege nor discrimination. Everybody is capable of searching and acquiring knowledge, whatever their innate abilities or social status. 6. The learning process begins with receiving specific instructions from others. However, as people grow older, they begin contributing to the learning and self-improvement of others, thus building harmony with the world.” By comparison, school walls in China featured only one quote from Mao: “Learn well and progress every day.” This was consistent with the powerful tradition, while the rest of the depreciating context was concealed from children.

This culture is confronted by the so-called Faustian culture of the Western world: “1. Cognition is inspired by human curiosity about the structure of the outside world. 2. Knowledge is procured by the tireless spirit of exploring the Universe. 3. Reason is the highest human ability that makes such exploration possible. 4. Reason (not heart) is responsible for perceiving the world around us. 5. Education is a privilege for those with the highest abilities. 6. The individual is the only reality for research, discoveries, and the ultimate triumph.” It seems that the sixth item sets reality equal to the subject to eliminate discrepancies in understanding the whole set of points. Otherwise, there would be no talking about the outer Universe or a contradiction between this world and the Confucian commitment to the inner world. It should be noted that Jing-Li was trying to make her points sound unbiased, but did not really succeed. Unlike the items describing the Western approach to culture and education, those about China contain no negative phrasing like the one that excludes heart from the cognition process. Thus, the Chinese tradition is presented as superior.

We can omit analyzing the Western philosophical and educational tradition with its “miracles of mind” reiteration, based primarily on Russelian ideas. Most probably, this is by far not the most fruitful approach, but going into it would take us too far away. More importantly, the researcher argues that the Western tradition is focused on educating children to the prejudice of a number of student-related aspects. She identifies four main characteristics of such an education: inherently different levels of intelligence, which is to be developed; curios-

ity (also innate but subject to cultivation); exploration of the outside world (“open-mindedness and the spirit of free exploration”); and the understanding of and control over the world as the ultimate goal of education. At the same time, Jing-Li notes that Likurgian educational conceptions reproduced by Plutarch have had a great impact on the European tradition with its rigid discipline (perhaps, ignoring the fact that the “Spartan” concept is in a striking contradiction with her own Western school experience; we will come back to Spartans at the end of this review). However, the level of rigidness has differed from era to era in Europe: Greece was more rigid than Rome, and England is more rigid than the continent.

The Confucian tradition is presented outside the history of its evolution. We would not welcome such an approach: the book is intended first of all for Western readers, who would do with a most concise description of their own tradition, while Confucianism is normally little known to them. The idea brought to the foreground is that “anyone can obtain education despite his or her social status and personal characteristics”. Relationships with different people and “the associated social and moral implications” are what determine “our personal human goodness” (is she using the phrase to avoid saying *individual*?). This is the context where the idea of self-perfection is realized, while the Western individual is perceived in the context of their biological or legal nature. When Jing-Li wrote that Confucius had regarded people unable to build their family relationships as being equally unable to bear responsibility “in their community or society as a whole”, I wonder if she knew that these were the ideas that inspired the Athenian Republic? And when she equated the ability to feel shame to having a nagging conscience (rather conflicting concepts in a European mind) when describing Confucian virtues and moral principles, did she notice that this synonymization took her beyond the pre-declared social context (because conscience means a private dialogue with oneself, at least to Europeans)?

Cultural barriers are particularly evident in attempts to reproduce Chinese wisdom in European languages. “Learning as a way to find wisdom means not just following some ethical principles, but developing something everyone has from their birth.” A modern European would not see the contradiction here, considering *not just... but* as inappropriate even when they learned from the following paragraph that this was about conscience—“inherent moral knowledge”. Reading excerpts like this can sometimes put the reader in despair: the difference between cultures is not so much in words, but rather in gaps between them, in inevitable extensive explanations for each concept, which automatically make any translation flat and turn texts that inspire civilizations into dull, dry prose. Let us not digress, however. Wisdom is obtained through the application of knowledge: this principle allows for surpassing social barriers and the existing level of education. The ultimate task of “taking the world upon oneself” means “maintaining the

ethical principles by individuals who resist doughtily to abuse political power and demand reforms from the leaders in their pursuit of *ren*¹.”

In Confucianism, education is not aimed at bringing personal satisfaction, self-fulfillment, or any practical benefits (however, we will find below that “lower-class people could get higher positions, at least in theory” and “it is impossible to overestimate the power of this incentive for some students”). The individual is the reference point on the path of education, which embraces ever wider and more universal spheres of life with time. The primary objective is cognizing things in the world, but this world is social, not physical.

Jing-Li writes, “This unprecedented combination of moral achievements, academic wisdom, political power, and socioeconomic status has enabled education to take a dominating position in Chinese culture and be regarded as an undeniable and unquestionable value.” Meanwhile, our perplexity is growing: if sincerity² is the primary learning value, followed mostly by different kinds of endurance and perseverance in various situations, then why is sincerity characterized by this episode: a student does not want to disturb his teacher and waits in the cold with his friend for the teacher to wake up. It is perfectly obvious that definitions have been shifted here. It is only later that we will be apophatically initiated into the meaning of sincerity for Chinese people: “words pronounced without intent to support them with deeds are insincere.”³ This is why the word has a dependent status in Chinese culture: “Speaking <...> tends to be based on moral intentions and overall judgments. An exemplary human being is thus slow in words but fast in deeds. When they speak, they do it with sincere intentions, choosing their words carefully.” Can we say that the East confronts the West here? Obviously there is a serious challenge in it for the European culture. The Chinese would probably like the well-known anecdote about Spartans hearing a useful thought from an improper man in the popular assembly, making him sit down and asking a proper man to stand up and repeat the thought, but only if they admitted an improper man could he have a useful thought at all. However, does not *Shaping the European Mind* say that the mouth speaks what the heart is full of and that a man brings forth the treasures of his heart through speaking? The requirement and the need to separate what is

¹ “Ren was translated as “benevolence”, “amiability”, “human goodness”, “large-heartedness”; “approved behavior” is a more recent version.”

² It will be characterized in two ways below: sincerity/earnestness.

³ Below we will find puzzling translations of Latin mottos. The University of Hong Kong chose Sapiencia et virtus as its motto; we would perfectly do with the word-for-word translation “Wisdom and virtue”, but the four obscure hieroglyphs passing through English sound as “Cultivating virtue and cognizing things” in Russian. Per ardua ad alta of the National University of Singapore—literally, “Through difficulties to the heights”—is translated as “Great things are achieved through hard labor”.

said from who is saying it are both important and challenging for Europeans. Further on, we will read a good many times that abilities are the key to the Western educational tradition⁴, while diligence is key to the East Asian tradition.

“The paradox of the Chinese learner” is that Westerners feel resentful about the authoritarian teaching practices of Asia, while at the same time admiring the outcomes. The academic performance of East Asian students is less affected by social factors: they are not susceptible to the specific barriers that poverty and wealth create for young Westerners. “Chinese students are convinced that they should apply efforts constantly in dealing with any sort of tasks.” Parental expectations and parental control are also higher in East Asian families. Where British teachers are satisfied with their Chinese students, parents complain about low requirements and demand moral self-perfection from their children. “British students understand a good teacher as someone who can excite a student’s curiosity, explain things clearly, use effective teaching methods, and organize the learning process efficiently. Their Chinese peers, however, believe a good teacher should have deep knowledge, be able to answer questions and serve as an ethical model.” Comparative studies of attitudes of Australian and Hong Kong teachers show that the former do not consider it their duty to teach children ethics, leaving it to the family, while the latter spare neither time nor effort correcting inappropriate behavior and guiding their students to the right path. Rote memorization is used in China as the first step towards profound understanding, which is a long and labor-intensive process that has nothing to do with the “aha moment” of Western learners. Learning-related vocabulary is also indicative, as the fundamental concepts are dramatically different for Americans and Chinese people. Americans give preference to *learning* and *thinking*, while the main Chinese concepts include “continuing to learn as long as you live” and “read extensively”. The speculative and mental processes of Americans stand in opposition to the strong emotions and arduous working of Chinese people. Humility plays an important role in the Chinese structure of values. Accepting one’s own imperfection demonstrates personal power; “a person can always perfect themselves as long as they learn humbly and respectfully from others.” Thus personal failures have less impact on Chinese learners and present less potential danger to them. Chinese educational values leave no place for self-expression and communication. Humility is also typical of the Russian educational tradition, or at least the Russian ideal of education.

The Western ideal of education with its focus on rationality, research, and abilities is described in quite a few details. We will come

⁴ Reducing Western tradition to a cultivation of abilities also seems inappropriate, as such a powerful system as Jesuit education deliberately staked on average abilities.

back to it below in the analysis section. Now we will give a brief overview of the virtues of Confucian learning: apart from sincerity/earnestness, they include diligence/commitment, providing a specific procedure for learning new materials (familiarization, which often means memorization; practice; and skill perfection); endurance in the face of challenges; perseverance; and concentration. We will also focus on an important detail: as soon as Chinese children perceive learning as an “arduous personal endeavor” and “engage in it as in a severe test”, the modern entertainment-based teaching methods do not resonate with them. This is a nice feature: there is no better proof of the existing crisis in education for the Western civilization.

Next, the author compares the emotions of Western and East Asian students associated with learning. The differences she discovers are quite consistent with the picture we have been receiving so far. An essential asset of East Asian learners is that they accept their failures as a motivation for working more and better, and the same should be true for their successes: there is no Chinese word for the English *pride* that does not have any negative connotations⁵. At the same time, the virtue of humility is valued extremely highly. Neither getting too upset about failures nor triumphing over successes is accepted here. Students prefer setting long-term goals, thus quenching the amplitude of their emotional response to events that have little significance within those terms. The author considers these qualities, particularly humility, to be the strong points of East Asian students that allow them to achieve higher outcomes.

The crucial Chapter 6 is entitled “Nerd’s Hell and Nerd’s Haven”. Research shows that Western culture reserves an unenviable role for assiduous students, even less enviable than for capable ones who learn easily and without any effort. Teenagers want to be popular among their peers, which is only possible if you slack your work. “There is a powerful “peer culture” in the West (at least in public schools), where academic success is opposed to peer approval, meaning that you have to pay a high social price for high academic achievements.” This is how the “tyranny of mediocrity” is established. Jing-Li points out spitefully that such behavior—like the bullying of nerds—is considered biologically universal by Western researchers, who find parallels in animal behavior, however the principle is not valid outside of Western civilization. Yet, neither is the trend ubiquitous in the West: the author was lucky enough to find a school where her nerd son was not bullied. She believes that this type of bullying is explained by the contradiction between the uniqueness of each personality—as it is perceived within Western culture—and assessment of academic performance by schools, which infringe and destroy this uniqueness.

⁵ Unlike in other languages: French orgueil, Italian orgoglio and Spanish orgullo; Franco-Italian *fierité-fierezza* derives from the Latin *ferus*, or “wild”.

A great role is also played by fierce competition (which sounds weird to us: good Soviet students were bullied too, but academic performance had little to do with success in life). The study the author relies upon shows that American children approach competition as a zero-sum game, whereas Japanese students see it as a common chance to progress, with Hungarians falling in between.

The next chapter uses discourse analysis models and numerous graphs to examine the role of parents, namely mothers, as transmitters of traditional educational values. There is a certain statistical discrepancy, but not that big: East Asian mothers and children discuss learning virtues much more often (especially in conversations on low performance). “Mother is not alone in the struggle for her child’s understanding of learning: she is guided by ideological wealth, which is the cultural support that provides her with cognitive sources and resources.” It is no news to us that Western mothers focus on mental aspects, while their Eastern European (Taiwanese in this case) counterparts pay more attention to virtues.

The researcher believes that “if we begin to compare, we will see the way mothers socialize their children, not very competent representatives of their culture, differs little from the method used by Socrates when he gave some geometric instructions to a slave and successfully expanded the horizons of a young but capable mind.” It is difficult to agree with this point: the examples of mother-child conversations that she provides show the difference in the values and virtues between East Asian and Western mothers, but not in the ways they are translated.

The penultimate chapter sets Western speaking in opposition to Eastern reticence. The four values of Western rhetoric are: the maxim of quantity (“speak as much as needed, and no more”), the maxim of quality (“be truthful and avoid lying”), the maxim of relation (“say relevant things”), and the maxim of manner (“be clear and straightforward”). Short of Demostheneses and Ciceros and thus mistrustful to speaking, East Asian culture contraposes these Western maxims to its own: reticence (“speak less”), obscurity (“speak ambiguously”), equivocation (“speak friendly”), and listening (“first listen, then speak”). This results in interiorizing the educational process: to the casual observer, it might appear that nothing is going on.

The last chapter, entitled “Implications for the Changing Landscape of Learning”, probably alludes to why the book was written: East Asian children are different and remain so even in alien environments, and there are no reasons for saying that Confucian learning orientations are worse than Socratic ones. East-Asian children suffer when schools apply the same requirements to them as to their European and American peers (however, they still show high levels of academic performance). Jing-Li even finds action-based negativity in attitude to such children, which is “poured onto them under a disguise of positive attitude by the loving and caring preparatory school”, and which

had not been actually revealed until relevant studies were conducted. Meanwhile, Chinese teachers deny Western teaching methods involving research and creative thinking: there is no time for research when students need to prepare for examinations; moreover, the method does not provide sufficient teacher control to ensure “equal education for *each* child.”⁶ While the author defends the equality of Confucian and Socratic orientations at the level of assertions, implied preference for the former shows through the lines. However that may be, the call for taking into account specific features of the East Asian mindset and learning attitudes of East Asian children totally deserves sympathy, just as we cannot accept persecution of such children by their European American, Latin American, and African American peers.

We have summarized as briefly and accurately as we could the ideas put forth in the study. Now we need to understand whether the book answers the question in its title. Let us try to put it into another perspective: can we possibly say anything about the relationship between Chinese and Western architecture through comparing the Forbidden City to La Grande Arche and Centre Georges Pompidou? Amid sophisticated sociological methods used to study how living school and university students think, to the front comes the ease of justifying the identity of both Chinese and Western schools throughout millennia⁷. We cannot say much about the Chinese one: China was a symbol of stillness for our compatriots of the 19th century, and they may have been right. However, the examples cited to illustrate the solidity of Western approaches prove nothing at all. We could provide a number of contrasting examples, no less numerous and convincing. Athenian loquacity neighbors Spartan laconism, and even more: Pythagorean students had to keep silence for five years, and that was one of the most powerful ancient schools of philosophy! If modesty is a strong point of East Asian children and teenagers, is not the famous quote by Archilochus “Keep some measure in the joy you take in luck, and the degree you give way to sorrow” one of the crucial self-characteristics of Elláda? As for inculcating creative thinking and research

⁶ This approach brings together the Chinese school and the Soviet universal education. Sergey Kara-Murza, a famous expert in historical falsifications, emphasized that the Soviet education model was widespread and popular in Asian countries. We assume speculations on this aspect may be fruitful, given what will be said below about the relationship of “us” vs. “them” enforced in East Asian schools and voluntarily accepted in the USSR.

⁷ Interestingly, the bibliography begins with Aeschylus’s *Oresteia*. Another curious thing is that a book devoted to children’s learning attitudes contains no mention of corporal punishment. We have no possibility to find out whether the East Asian educational tradition ever involved such forms of punishment, and, if it has, how it affected the learning attitudes of children. However, we cannot ignore the differences in approaching corporal punishment between the present and the relatively recent past in Europe, let alone the two great branches of the Anglo-Saxon tradition.

culture in the manner Jing-Li saw it in American schools, this is a rather new trend, unusual for the traditional European school. Finally, the primacy of virtue over mind is a constant of Russian teaching thought, and there is no doubting it in the European character⁸. There is every indication that the European school taken in its whole evolution differs less (although still greatly) from the Chinese one than the present-day American (teaching system or European-American system, if you will). Besides, if we take into account the fact that innovations in education take some (often a long) time to produce palpable cultural effects, we will not be able to say that modern Western civilization has been created by the modern Western school, let alone make any judgment about the cultural landscape that will be shaped by the American school Jing-Li describes. Her Chinese colleagues were right in stressing the temporal factor: present-day children should have much more spare time to be able to use new-fashioned research methods. The old European school did not provide that opportunity. In this context, the scenario of decreasing the creative potential of Westerners and the atrophy of their research skills due to school attempts to cultivate both is just as possible as any other.

Another feature of Jing-Li's research approach is total neglect of the content aspect. Yet, hieroglyphic writing takes much more effort to be mastered, with serious implications for the required learning virtues and most dramatic ones for the potential relationship of "us" vs. "them" in the curriculum. Therefore, the book answers a question inferior to the one stated in its title, namely how the cultural foundations of learning differ between the traditional Confucian school and modern American school without regard to education content or curriculum. This is also relevant and very important though. Actually, by narrowing the question and thus losing the right to use Western technological superiority as a supporting point, we make the author's underlying idea about the advantages of the Confucian approach more fruitful⁹. We will have a chance to assess the effects of this competition more accurately in the decades to come.

⁸ Cf.: "All possible knowledge only makes the one who acquires it piteous, if it does not facilitate the path towards virtue for him. This is a simple truth, but it should be imprinted in the hearts of young lovers of wisdom." [Muravyev M. (1856) *Sochineniya* [Works], St. Petersburg, vol. II, pp. 329–330]

⁹ It appears to us that linguistic research of the basic concepts (we have pointed to discrepancies in such concepts between the two traditions above) would be quite effective in studying the differences in cultural attitudes. As we mentioned, Chinese maxims may sound truly inspiring in Chinese language, but their Russian translations are cumbersome and hardly capable of inspiring anyone to make a learning effort.