

# The HSE LOOK

**GLOBAL RESEARCH AND TEACHING** 

#### NO. 2 (50), APRIL 2021

'It is necessary – and toward this point our development will move, little by little – that nothing alien happen to us, but only what has long been our own.'

> - Rainer Maria Rilke, Letters to a Young Poet



ur University is constantly engaged in the introduction of new concepts and never tires of re-thinking its approach to the core goals of higher education – knowledge production and exchange. In this issue of The HSE Look, we consider these roles from various angles. Vadim Radaev, First Vice-Rector of HSE University, discusses a new flexible three-track system for academic staff development and highlights how everyone can benefit from the new system. We also present comments from both faculty and students on the Digital Professors programme, another new initiative started in the current year, which has already connected learners virtually with professors in 16 countries. Furthermore, the production and co-production of new knowledge is further developed in interviews with the heads of three HSE University International Laboratories, which were created in 2021, along with the head of our Neuropsy Lab, a participant in the HSE Mirror Laboratories Competition, which is aimed at enhancing inter-regional research collaboration.

Yulia Grinkevich Director for Internationalisation



# New tracks for everyone

Starting in 2021, HSE University is introducing changes to its academic staff policy in the form of a flexible system of three tracks for academic staff development: academic, teaching, and adjunct. Vadim Radaev, First Vice-Rector of HSE University, talked to Okna Rosta about the features of these tracks, new career opportunities, and how academics can move between tracks.

#### New goals for academic staff development

Since the creation of HSE University, attracting the best researchers, teachers, and administrators has been our main competitive advantage. Moreover, staff development is still at the core of the University's ethos. Over the last 15 years, HSE University has seen two stages in the implementation of academic staff policy. During the first stage (2005-2011), various conditions were created for attracting and developing staff members. For instance, we formalized the concept of effective contracts, increased the number of programmes offered by HSE Centre for Staff Training, launched an international recruitment, and introduced academic bonuses for publications in international peer-reviewed journals and for achieving the status of Best Teacher.

During the second stage (2012-2018), we saw a continuous rise in total professional requirements, thereby ensuring growth in the competitiveness of academic staff and the University as a whole. For example, we have established requirements for the level and quality of publications, moved to open calls for teaching positions for external candidates, and introduced a KPI system to assess the performance of faculty deans.

Today's challenge is that the current system of selection, motivation and review of academic staff was built in direct relation to colleagues who have outputs in the form of research publications. However, the tasks faced by our institution are becoming more complex and diverse. First, we need more non-academic practitioners for expanding practice areas (design, advertising, management, and computer science). Second, we require qualified teachers who are not necessarily engaged in extensive research. As a result, broad groups of staff have found themselves outside our basic criterion system, which is developed and effective, but as I mentioned, has been developed with research-focused academics in mind.

#### Two new tracks

Therefore, along with the academic track, we are introducing a teaching track for those who teach courses at a high level, engage in project work with students, and provide methodological support, but at the same time, do not have the required number of publications and/or experience outside of academia. The distinctive features of this group may include having the title of Best Teacher for at least three years; recording online courses with more than 10,000 participants; recording lectures for major educational platforms with more than 10,000 views; regularly delivering public talks to large audiences; and publishing textbooks and teaching aids.

The adjunct track has been introduced for those with extensive non-academic experience so that they can bring in innovations from 'the field' and organize project work. Such practitioners are characterized as having current or previous employment outside the academic area. Practitioners who have joined HSE University as their main place of work, for instance, may have patents, professional awards, and industry titles.

The requirements for academic staff on the academic track remain mainly unchanged and are determined at the University-wide level. They face much higher requirements for their publication output, but they are also provided with additional opportunities to incentivize it. In regards to the other two tracks, such requirements are lower. However, there is no possibility of bonuses. Academic staff in the teaching track have to meet stringent requirements for student's assessments of teaching quality, whereas those in the adjunct track - for engaging in applied activities.

This differentiation of approaches to the three tracks is designed to legitimize the status of those who opt for teaching and adjunct tracks, while also creating additional opportunities for their development. I do not think that other institutions employ this particular approach. However, many universities have a teaching track, and many practitioners work as adjuncts.

#### Opportunities for career development under every track

There are many possibilities for all academic staff, regardless of track they choose. In addition to guaranteed wages, all of our colleagues, for whom the University is their principal place of employment, have the opportunity to enhance their qualifications with the support of the University, receive travel grants, participate in various competitions, secure a social package, including voluntary health insurance, receive multiple types of awards, strive for the title of the Best Teacher and, if successful, receive an appropriate bonus, have teaching assistants, or get longer vacations, and so forth.

A choice of one of these three tracks does not mean the creation of separate positions. Such positions are introduced as a professional status in addition to a regular one. Career development within each track can be achieved in three dimensions. First, one can move along the position line, as before, with each track having its own tiers of positions. For instance, they are assistant professors, lecturers, senior lecturers, associate professors, and professors (if participating in the research track).

Second, within each track, one can receive an honourary status. For instance, there are ordinary professors, distinguished professors, research professors, associate researchers, consulting professors, associate consultants, and outstanding practitioner. This system is expected to be synchronized for teaching and practice tracks.

And third, one can move up the administrative ladder if one takes on responsibilities to manage a unit or a programme. An administrative career can also be manifested through transitioning to various leadership positions, eg, project heads, heads of laboratories, directors of institutes, directors of administrative departments, and vice rectors.

### Procedure for choosing a different track and moving between tracks

The transition will be gradual, and our colleagues will be able to shift to one of the three tracks as their current employment contracts expire. The transition process has already begun as part of the 2021 winter call for new academic staff competition. Assessments of candidates for all three tracks are carried out by review and selection committees, which include leading professors, researchers, practitioners and methodologists, and heads of key departments. It is worth noting that academic staff taking part in competitions have the right to choose any of the three tracks. In turn, a relevant committee will then confirm the particular track for the position, taking into account the applicant's preference. More over, one's chosen track is not fixed forever – it is possible to switch between tracks. Usually, this can be done under the framework of the next call for academic staff competition, but it is also possible to enter the competition earlier and change one's track. HSE University constantly initiates new change, gradually raising requirements and overcoming the inevitable inertia through adjustment of regulatory rules and instruments. By continuously improving staff's work and living conditions, our institution strives to foster an environment conducive to their further development.



## No back row

Thanks to a recently launched programme, HSE University will host about a hundred international scholars who will teach remotely in the 2020/21 academic year. The HSE News Service spoke about the programme with First Vice Rector Vadim Radaev, as well as several teachers and students. The HSE Look presents to you excerpts from these conversations.

Remote collaborations with international colleagues has long been a regular practice for HSE University. In the past, this has been done primarily for research purposes. The new programme, however, engages international colleagues in teaching as well. Although the Covid-19 pandemic was not the reason for the programme, it undoubtedly was a catalyst. Vadim Radaev explains the programme's rationale: 'With border closures and many international colleagues unable to come to Russia, many scholars are willing to work online as they can't leave their countries. This has enormously expanded our opportunities for international cooperation.'

The first faculty to make use of the programme was the Faculty of Humanities, followed by the Faculties of Social Sciences and Computer Science, respectively. The number of hosts has been growing rapidly, with 11 out of 16 faculties having applied for funding so far. Starting from the 4th module of this academic year, HSE University's regional campuses joined the programme. New international colleagues are getting involved in lecturing, workshops, project and research seminars, as well as supervising student research papers. Most of them work with Master's students.

So far, prominent scholars from 39 institutions in 16 countries have entered into contracts with HSE University. Most of these higher education institutions are located in the USA, the UK, Germany, the Netherlands, and France. Furthermore, several of these universities are among the Top-100 of the QS and THE rankings, including Stanford, Oxford, University College London, University of Michigan, University of Melbourne, the Chinese University of Hong Kong, Delft University of Technology, University of St Andrews, KU Leuven, London School of Economics and Political Science, Brown University, and Humboldt University. Moreover, several experts also work in NGOs such as UN-Habitat, major corporations like Facebook, or global governance institutions such as International Monetary Fund. 'We invite international scholars to teach courses that we do not yet offer but would like to provide, or those that we do offer but require instruction at a more advanced level', explains Vadim Radaev. About a third of the teachers are Russian citizens, but more than 80% of the courses are English-taught. The programme is intended for all faculties and all areas of study, so the range of courses will be significantly expanded in the future.

Most of the courses allow students to access global knowledge as provided by such globally renowned experts. For instance, Dr Oliver Boyd-Barrett delivered a series of lectures on Critical Political Economy of Media for the English-taught Master's Programme in Critical Media Studies, which was launched this academic year at the HSE Faculty of Communications, Media, and Design. Dr Boyd-Barrett is the co-author of Media Imperialism: Continuity and Change. It is one of the most significant studies of the contemporary media landscape and was translated into Russian in 2018.

Another popular course, a project seminar held out of the Faculty of Humanities, is taught by Dr Lev Manovich. He

is a Professor of Computer Science at the City University of New York and the founder of the Cultural Analytics Lab. This lab has developed projects for the Museum of Modern Art (NYC), New York Public Library, Google and other clients. Dr Manovich was born in Moscow and moved to the USA when he was 21. Valeria Stratonnikova, Dr Manovich's student, describes her experience with him as follows: 'In creating our final project, Dr Manovich especially encourages undertaking an original approach to visualization. This is a great opportunity to apply illustration and graphic design skills and look at a cultural phenomenon in a new way! Another thing I like is the ongoing seminar chat we have with Dr Manovich on Telegram.'

'When I finish one lesson, I can't wait for another!' Lev Manovich notes, sharing his views on teaching HSE students, adding: 'In my module, we discuss a new topic, which has not been taught before, and there are no publications on it. Therefore, together with the students, we can come up with a new field of research. I am very pleased with my experience at HSE University and will be happy to teach here again.'

Several courses have a focus on specific countries or regionspecific knowledge. Such examples include History and Culture of the USA; History of Witchcraft and Magic in Europe and North America; Greek and Roman Epigraphy and Numismatics; Armed Conflict, War and Foreign Power Intervention in the Persian Gulf and Beyond; and others. Several courses provide a global perspective to Russia-related topics. Thus, Dr Alena Ledeneva, a Professor at University College London, taught Informal Economy and Informality in Russian Society for the Master's Programme in Russian Studies. Dr Ledeneva graduated from Novosibirsk State University and got her PhD at Cambridge University. She is a globally renowned expert in informal governance in Russia and beyond.

'We expect that this programme will allow us to enhance the quality of our academic offering and their relevance among students, as well as develop research centres at the University. We hope that HSE University's full-time teachers also benefit from this new cooperation; they can learn from their colleagues and enhance their expertise.' Vadim Radaev highlights the new opportunities, noting: 'Perhaps, some of our students may find a supervisor among the new specialists. In turn, our international colleagues may become interested in deeper engagement with HSE University in the future. Also, the possibility of moving to a permanent contract is not completely ruled out.'

'I meet with my wonderful team of fellow professors and teaching assistants on a weekly basis through Zoom, where we discuss our current work and plan for the coming weeks and months,' notes Dr Melnikov, who teaches a course on machine learning for students of two double degree undergraduate programmes: Data Science and Business Analytics (at the Faculty of Computer Science), and Economics (at the International College of Economics and Finance). He adds: 'In the future, we also plan to involve students in machine learning projects with American firms. We also plan to invite prominent researchers from the USA to take part in conferences and make presentations at HSE University.'

Dr Melnikov lives in California and runs the Data Science department of a company based out of Palo Alto. For 10 years, he has been teaching courses in Machine Learning, Statistics, Neural Networks, Data Science, NLP and Python at Stanford, Berkeley, Cornell, the University of Chicago, the University of Washington, Johns Hopkins, and other American institutions of higher learning.

'Teaching graduate students at HSE University is one of my most meaningful recent pedagogical experiences,' notes Dr Boyd-Barrett, adding: 'I can think of few things more vital than fostering better dialogue and university-level understanding between Russia and the USA. As we stand at the precipice of tectonic shifts in international relations, the perils of climate change and the threat of nuclear conflict, we scholars find ourselves entrusted with a unique and sacred mission: to reach across international borders and help nurture a collaborative sense of our complex world.'

A distinctive feature of the programme is that it is the academic and research subdivisions eager to involve international scholars, can initiate the collaborative agreements and submit applications. They are received on a year-round basis and considered within a 30-day period. This procedure contrasts with the competitive selection for permanent contracts, whereby foreign colleagues can apply HSE University as part of a general open call.

The new Digital Professors Programme is administered by the Centre for International Faculty Support of HSE Department of Internationalisation. On their website, you can find all information on how to apply on behalf of your unit.



# Research on a global level

HSE University was the first academic institution in Russia to invest in the creation of international laboratories, starting back in 2010. This significantly contributed to engaging the University's research teams with the global academic community. By the end of 2020, the University had 51 international laboratories.

The Faculty of Social Sciences is the leader with 11 laboratories. However, in 2020, the portfolio was expanded with genomics, wwmicrophysiology, bioinformatics, quantum optoelectronics, and elementary particle physics. In 2020, staff from the University's international laboratories published 990 articles in journals indexed in WoS/Scopus while 518 students were involved in lab activities.

The heads of three new HSE University International Laboratories, which were created this past January and received three-year grants, share their views on future discoveries. All interviewees explore how Big Data and AI may transform our understanding of financial economics, public administration, and molecular biology.

#### International Laboratory of the Computational Genetics of Alternative DNA Structures

Laboratory Head: Dr Maria Poptsova, Associate Professor at the HSE Faculty of Computer Science; Leading International Researcher: Dr. Alan Herbert, President and Chief of Discovery of InsideOutBio (USA).

I studied at the Faculty of Physics at Moscow State University (MSU) during Perestroika. Along with teleconferences, educational bridges opened and I went on an exchange to Amsterdam. At that time, it was not easy to learn about the achievements in world science. We did not have internet, and this was right after the 'Iron Curtain' fell. So, in 1993, I witnessed an international laboratory for the first time (Amsterdam Institute of Neuroscience, University of Amsterdam) and, as a result, submitted my first publication.

I began working at the MSU Department of Biophysics and closely followed efforts to decipher the human genome. I plunged into this topic as a postdoc at Connecticut and Cornell Universities. I am still very attached to bioinformatics. I am often asked whether bioinformatics is more about biology or informatics. These two fields can't be separated. Furthermore, from a young age, I've been interdisciplinary: while studying physics, I also took courses at the Faculty of Biology. There is even speculation that bioinformatics is not a science at all, but a means. And what we do is molecular biology, as we study how a cell works inside.

A metaphor for our laboratory would be that we 'hack' the genetic code. Imagine a computer programme: someone writes a binary code and gives you access to this sequence of ones and zeros. Instead of these digits, we look at the DNA instead. With a computer programme, one can ask the programmer who wrote the code, but with DNA, there is no one we can ask! But unlike a hacker who is held off by security specialists, no one stops us except our brain. The human genome contains 3 billion letters, or the equivalent of 3.2 GB, and it is impossible to 'digest' them without computer-based methods! Watson and Crick received the Nobel Prize in 1962 for their discovery of the structure of DNA. They spun the spiral in a classic direction, i.e., clockwise. Later, it turned out that it can also be spun in the opposite direction. These inclusions – Z-DNA – can serve as signal for a lot of things in a cell. Z-DNA can turn on and off different processes in the cell, for example, learning not to fear. Our laboratory is now actively conducting research on Z-DNA.

We also do classical genetics. There are numerous practical implications of our research with respect to personalized medicine. Many diseases and the effectiveness of their treatment are encoded in the genome; one drug may work for a person with a certain genetics and does not work for another.

At present, our team consists mainly of scientists from HSE University and MSU. Dr Alan Herbert worked at an American university and then founded his own company. He perfectly understands both science and commercial research and this may help us understand how our research can be directed to commercial applications.

At the HSE Faculty of Computer Science, we are strong in Big Data analysis of molecular biology with a particular focus on neural networks. You need them when there is so much information that the capacity of the human brain is not enough. We can carry out the most advanced computer analysis quickly and efficiently, and Alan has a lot of respect for our abilities. He is more of a biologist who understands what data is better to analyze and has many research hypotheses to verify. We have a shortage of laboratories in Russia that can generate data from expensive technological experiments.

#### THE KERNEL

Moreover, Alan has connections with laboratories around the world and has already put us in contact with each other. They generate the data, and we are the first to analyze it. Zoom has changed our understanding of research collaborations. Every week, we have at least two online meetings with research teams in California and Pennsylvania. Before the pandemic, we didn't know how to get together so effectively. Moreover, Alan and I met first on Zoom during the pandemic.

#### International Laboratory for Artificial Intelligence in Finance

Laboratory Head: Dr Tamara Teplova, Professor at HSE Faculty of Economic Sciences; Leading International Researcher: Dr Ali Emrouznejad, Professor and Chair in Business Analytics at Aston University (UK).

The HSE Research and Training Laboratory of Financial Markets Analysis was established in 2011. AI in financial research is one field of international cooperation. I have been interested in this area for a long time as I am an economist and cybernetic expert according to my first education. My PhD thesis was about the application of mathematical methods in economics, and I have been using mathematical methods all my life. However, there is more and more Big Data around, and I can joke now that, only thanks to the 'brains' of robots can I feel a sense of confidence.

Financial markets are undergoing significant changes. One such trend is 'financial democratization', i.e., an increase in the influence of non-professional players. Earlier, financial markets were the specific field of institutional investors, but now we see amazing stories whereby individuals can become the driving force, albeit on third-tier stocks.

A no less important element of this new phenomenon is networks. These individuals not only emerge but form their own investment communities, organized on such platforms as Telegram and Twitter. We managed to study hedge funds - their portfolios, logic, motivation, remuneration – as their number (43) is not significant. However, to understand the intentions of individuals, you need to work with Big Data. There are already 10 million non-professional players on the Moscow Stock Exchange, and 47% of all trading is done by them.

Another challenge is that these subscriber traders use jargon. You will not see phrases like 'Guys, let's buy Abrau-Durso'. The messages are more cunning, implicit, and, sometimes, even manipulative. For instance, earlier this month, the Central Bank demanded that brokers block 60 individual clients who were involved in manipulations with Rosseti-Yug. Owing to these actions, the traders will translate the communication into the even more Aesopian language. Thus, AI is essential. The neural network, with the help of which we try to find both intentions and manipulations, should catch exotic names, for example, 'Norka' and 'Gamak' for Norilsk Nickel, or 'Fikus' for Fix Price. We created a Telegram bot (SentimetricaBot), which reports on this information every day at 4am. These signals allow us to build portfolios of securities. These are unique products; we patent and sell them. In the new lab, we try to learn how to identify such intentions, manipulative stuffing of information and cheating emotions. I welcome financial democratization, as I believe that self-determination and self-organization may contribute to development of civil society. The financial market can teach people to unite, first, by trading together, then by defending their interests. It is interesting for us to study this process.

We have cooperated with our partners in the UK and Portugal for two years, and we have an even longer history of cooperation with Pakistan and Iran. We put out joint publications, and when we realized that our relationship was quite promising, we formalized it by creating an international lab. Dr Ali Emrouznejad is the head of an institute in Birmingham and an expert in mathematical methods. Our hope was to attain synergy from a special combination of mathematics and finance. We offer certain financial riddles, problems, and our vision of solving them, whereas Dr Emrouznejad can improve and offer advanced methods with respect to the research subject.

#### International Laboratory for Digital Transformation in Public Administration

Laboratory Head: Dr. Evgeny Styrin, Associate Professor at the HSE School of Politics and Governance; Leading International Researcher: Dr Vishanth Weerakkody, Professor and Dean of Faculty of Management, Law and Social Sciences, University of Bradford (UK).

While studying programming at Moscow State University (MSU), I got excited about the sociological issues and decided to attend graduate school in public administration. I wanted to explore how society adapts to new technologies and adapts them. Having been trained to think mathematically, I find it easy to tackle this topic, as the government has limited resources and needs specific answers.

My internships at SUNY Albany and Syracuse helped me to see that the world is not limited to a singular system of relations between the state and society. I spoke with the New York State authorities and the National Science Foundation, who discussed eGovernment prospects for that year. Moreover, we exchanged views with researchers from South Korea, Saudi Arabia, the USA, and the Netherlands.

Today, there is a lot of talk about digital transformation, not only in terms of changing day-to-day processes, which is being done by eGovernment efforts, but about an attempt to provide services at a higher level quality. The state collects a lot of data about the population, and technology can help to create new models of relations between the citizen and the state. For instance, the state can advise people on where to study, receive medical treatment, send their children to school, or how to select a retirement programme. Furthermore, digital transformation is about allowing citizens to make better choices in their lives. Previously, the state treated citizens in terms of averages, but now there are opportunities to personalize and treat each person in a unique way. Such an opportunity should not be missed, but the question is whether the state ready for this.

What happened to the taxi market with the arrival of Gett, Yandex or Uber, or the ecosystems, which Yandex, Mail.ru or Sberbank are also trying to develop, is a transformation of relations between the various market participants on the platform. Similar processes can take place in public administration. However, it is more difficult for governments to provide client-centred services in the same way that businesses do. The state holds an even more privileged position as we cannot escape from it; its services, like obtaining a passport or paying taxes, are exclusive. At the new laboratory, we plan to study to what extent is the state is politically and technologically ready to be open, understandable and transparent.

One of the reasons why the UK was chosen for the partnership was that Dr Vishanth Weerakkody is one of the most published scholars around the world in digital governance. His motivation is the development of international laboratories. We showed him that we have a hard-working team, which has done a lot inside Russia. However, we lacked the support of a leading scientist to demonstrate our results efficiently at the global level. We want to grow in our theoretical understanding, while also encouraging integration with into the global academic community, including international journals. After all, when you come out with material about your country that does not correlate with global concepts, few people are interested. Public administration in Russia is yet to become a separate field in many ways. So, our attempt to build a laboratory is a contribution to this effort.



# Mirror labs: a geographic effect

HSE University's Mirror Laboratories Project was launched in 2020 to promote research collaboration between the University and other Russian academic institutions. The geography of this project spans from Kaliningrad to Vladivostok and from Surgut to Krasnodar. Research activities are carried out by joint teams with a particular focus on involving young researchers and students. HSE University and partner institutions share equipment and data, research concepts and designs, as well as conduct joint workshops and training programmes.

The HSE Laboratory for Neurobiological Foundations of Cognitive Development (Neuropsy Lab) is one of 13 winners of the HSE Mirror Laboratories Competition and the only lab headed by an international faculty member. The Neuropsy Lab's partner institution is the Scientific and Educational Centre for Interdisciplinary Research and Art Technologies based out of Ulyanovsk State University. The HSE Look spoke about this collaboration with the lab's head – Dr Marie Arsalidou, Associate Professor at the HSE School of Psychology.

## What was the rationale to add a 'mirror' dimension to the lab's profile?

It was a logical step in our gradual development. First, we received funding from the Russian Science Foundation in 2017. Then, we were granted the status of an Education Research Lab and obtained additional funding from the Russian Basic Research Foundation. Then, we awarded with 'mirror lab' status. This new commitment runs for three years, up until 2022. The HSE Mirror Lab Project allows us to reach

out to other cities throughout Russia. Moscow is the most densely populated part of Russia and has many schools. We have worked with hundreds of children in Moscow already. Then, we started to ask whether children's cognitive abilities develop the same way in major urban settings like Moscow as in smaller cities like Ulyanovsk. So, we do hope that we can provide opportunities for children from across the country to participate in this research. For instance, as some of our research in now online, parents from anywhere in Russia can register on our website.

#### Why Ulyanovsk State University?

My colleagues knew that the research team from Ulyanovsk were interested in working together, and I said 'We're open to that, let's do it'. The first meeting with Dr Galina Pazekova, the head of the lab in Ulyanovsk, was held online. I sensed the benefits of this partnership from the first meeting, as we are both interested in cognitive development and have multidisciplinary interests. The main thing is that we have common ground, whereby we want to assess children's abilities, as well as do this by applying different methods.

I have always wanted to reach out further, but not speaking Russian is not as easy. I speak several words in Russian, while Galina speaks basic English. However, we have been able to develop our communication and had a successful first year. Nevertheless, we face certain challenges: we toned to translate each other's work; our students get to translate during meetings and presentations. So, we can manage. I never doubted that this project would be possible, and technology makes things even easier.

#### What projects are you carrying out together?

We planned that our first studies would be in person, as we intended to do a longitudinal study where we would test children every several months across a three-year period. However, the Covid-19 pandemic forced us to move online. The research we do is fun for kids because we present the experiments as games. They are generally concerned with mutual learning: we learn from the children and, we hope, they learn from us.

A longitudinal study on the learning and neurocognitive abilities of school-age children is our main project with Ulyanovsk. In this regard, we are looking at mental attention, or how many things children can hold in their mind. When they enter school, theoretically, they should be able to hold three things in mind and, by the time they graduate, they should be able to process seven. We have lots of data confirming this from children in Toronto and Moscow. For example, one of the measures we use is an online game with balloons that change in terms of the number of their colours. We can consistently see that children in Canada and Moscow pass certain levels, and then they perform randomly at other levels. Can we see this particular process among children in Ulyanovsk? Can we see the progression as we expect, if we test the same children every few months?

The other project concerns categorical learning. It is also a fun experience for children, as we give them colourful stimuli – beautiful creatures with interesting shapes and faces – and they have to match them in terms of categories. These creatures belong to different categories based on their shapes or colors, and the children must identify which category they belong to. The ability to group features into categories is a fundamental stepping stone towards more sophisticated thinking.

The third project is about the process of hyper-focusing. Have you ever been in a gallery staring at a painting and forgot where you were? Have you read a book and immersed yourself in the text and did not hear anything around? Have you done home assignments and forgot to eat or drink? This is what's called hyper-focusing. When you are hyper-focusing you can apply a lot of energy to what you are doing at the moment, and shut down other things. We want to see how brain activity changes when you are switching in and out of this hyper-focusing process. We know that when you are studying you might need to hyper-focus, and some children might be able to hyper-focus more than others. We hope that our research might help clinicians who work with children experiencing attention deficit and hyperactivity disorders.

#### How do you delegate project tasks between Moscow and Ulyanovsk labs? How often do the team members communicate?

The hyper-focus project is being headed up by our colleagues in Ulyanovsk, and we assist from our side. The categorical learning and mental attention projects are run from our side, and they help. There are 20 people on our team and 11 people on the Ulyanovsk team. We have regular mirror lab meetings every two weeks, where we discuss paperwork, reporting, and grant opportunities, and, as deemed necessary, meetings for specific projects. Sometimes, we visit Ulyanovsk, and this week, they are with us here in Moscow.

## Any chance for an external audience to be engaged in the lab's activities?

We are open about our science. Children, parents and teachers are welcome to join in the lab activities. For example, today, in addition to the meeting we hold with our colleagues in Ulyanovsk, we hold a seminar with a public school. Furthermore, some teenage students take part in short internships at the lab.

Science of Learning and Assessment is the name of a new multidisciplinary Master's programme, which starts this September at the HSE Institute of Education. This programme will train students to conduct research with individuals across their lifetime, utilizing methods drawn from such fields as neuroscience, psychometrics, biology, and computer science. The programme is offered in English and gives our students a competitive advantage with respect to carrying out research in Russia and abroad. We are always happy to connect with the general community and offer learning opportunities to bright young minds!

Published by Higher School of Economics. The issue was prepared by the Department of Internationalisation. Editor: Pavel Kuznetsov. Illustrator: Katya Bauman. Interviewer: Pavel Kuznetsov. Find previous issues and subscribe at *ifaculty.hse.ru/the\_hse\_look*. Release date: 26.04.2021

