EDUCATION & GLOBAL CITIES

SMART LEARNING
FOR WORLD UNIVERSITIES

NATIONAL RESEARCH
UNIVERSITY
SAINT PETERSBURG

Ural Federal
University
named after the first President
of Russia B.N.Yeltsin

BEIJING NORMAL UNIVERSITY
1902

Smart Learning Institute
Beijing Normal University

EDUCATION & GLOBAL CITIES: SMART LEARNING FOR WORLD UNIVERSITIES

Online technologies have crossed boundaries, new modes of learning and teaching have taken the process of education beyond universities and libraries. For example, HSE courses on the Coursera platform have subscribers in exotic places such as Curacao, Saint Martin, Vanuatu, Burundi, Madagascar, Maldives, Burkina Faso and even North Korea.

Any such cardinal change, or any new instrument of such scale needs to be seriously considered and studied. Our task now is not just to keep up with the changes, but to also make sure our students take full advantage of the implementation of new mechanisms of teaching.

I truly hope that the conference "Education & Global Cities" will allow us to advance in the study of the online revolution in education and help launch interesting joint projects between the participants in today's dialogue.

Yaroslav Kuzminov
Rector of the Higher School
of Economics

Dear Colleagues, Friends!

On behalf of Beijing Normal University (BNU), I would like to extend a warm welcome to all the participants of the Fourth Annual International Conference "Education & Global Cities: Smart Learning for World Universities" to discuss new digital challenges that nearly all the universities face as well as new tools and techniques that allow responding to these challenges. We are sincerely grateful to our co-organizer, HSE University St. Petersburg, for bringing experts in the academic communities and industries to get together here in this wonderful season.

BNU and HSE have solid bilateral cooperation foundation on BRICS and smart learning. Recent years, the two universities have already established friendly partnership in the terms of students exchanges, jointly research, academic events, etc., which are significant for both universities. We both shoulder an important role in higher education development and reform as well as in BRICS Universities League and BRICS Network University. Based on BNU and HSE long-term partnership, we co-organized this Conference in 2017.

Nowadays, smart learning has become the trend for the world universities. As a key university under the administration of the Ministry of Education in China, and a renowned institution of higher education known for teacher education, education science and basic learning and research in both the arts and the sciences, BNU has established Smart Learning Institute for promoting the idea of smart learning environment not only in China but also to the world, which aims to establish an "Industry — Academia — Research" cooperation mechanism for doing the innovative researches about using various advanced technologies in education, such as Virtual Reality, Big Data, Cloud Computing, the Internet of Things, and so on.

As one of the pillars and the core of smart learning, new educational technologies have already proved invaluable in academic activities and speaking about the future of education. The learning analytics is one of important techniques in the era of Big Data, especially for the education. However, the use of learning analytics techniques in universities often faces a range of challenges in terms of people, finances, research and development. Therefore, how to regard and encounter the obstacles in the adoption of learning analytics by modern universities would be an interesting and meaningful topic at this Conference.

Today, we are greatly honored to have experts and scholars from the world to share their advanced experience and achievements in smart learning. This Conference, I believe, will inspire not only the participants but also people across the globe to have a deeper and better understanding of smart learning and contribute to the better higher education for world universities.

I wish the conference a great success. I hope the platform will be a long last intellectual network of the participants, for the participants and by the participants.

Zhou Zuoyu
Vice President of Beijing Normal
University

EDUCATION & GLOBAL CITIES: SMART LEARNING FOR WORLD UNIVERSITIES

**Viktor Koksharov
Rector of The Ural Federal
University**

A very warm welcome to all participants of the international conference: "Education & Global Cities: Smart Learning for World Universities"

Contemporary education faces a number of serious challenges: universities no longer have a monopoly of knowledge. Their success as educational institutions in this new environment depends on their ability to take advantage of the huge opportunities that the digital age offers. This would allow universities to raise the quality of education they provide to a higher level, and give their graduates a competitive edge on the labour market. I am certain that effort in this direction will bring good results.

The Ural Federal University takes important steps to achieve this by actively introducing technologies of open education. Such training allows to save human and other resources, whilst also being individually suited and convenient to use, also for people with disabilities. Our students already enjoy the advantages of this approach. Of particular relevance here is the development of new informational and learning tools to be used in education as well as nurturing new forms of interuniversity cooperation to assist such development. I am sure that even though electronic platforms for learning cannot be the only basic form of education, their effectiveness is becoming more and more evident over time. Thus, it should be taken advantage of, whilst also keeping a reasonable balance between new and more traditional forms of training.

I am confident that this conference will be an effective platform for exchange of views, strengthening the cooperation between universities, businesses, public organizations, and the expert community. I wish you a constructive dialogue and prosperity!

**Sergey Kadochnikov,
Director of the Higher School
of Economics — St Petersburg**

Dear conference participants,

I am delighted to welcome you to the Fourth Annual International Conference "Education & Global Cities: Smart Learning for World Universities". Once again, the Higher School of Economics in St Petersburg becomes a meeting point for leading experts and researchers in the field of advanced educational practices.

I am very glad that this year we co-organised the conference with the Beijing Pedagogical University. We appreciate the research and experience our partner has in promoting smart learning principles and technologies not only in China, but also all over the world.

The inspiration behind the topic of this year's conference comes from the rapid development of digital technologies and the opportunities and challenges that they pose to universities. Higher education institutions actively use the Internet as an additional space for the implementation of various educational programs, thus developing common standards and techniques of teaching. As a result, the process of education nowadays has come to imply greater flexibility and the acquisition of useful professional skills and knowledge in an interactive environment where content from all over the world is freely accessible. The necessity to work with huge volumes of data as well as the need for high-quality educational analytics offer us, as participants in this process, new perspectives but also unexpected challenges in this field of research.

I am certain that this conference will allow us not only to find answers to numerous interesting questions and concerns related to modern education, but also to create new opportunities for cooperation, development and modernization of the system of higher education in accordance with the challenges of our time.

The Fourth Annual International conference
"Education and Global Cities: Smart Learning for World Universities"

The Fourth Annual International conference "Education and Global Cities: Smart Learning for World Universities" will bring together experts in learning analytics, educators and IT companies to discuss new digital challenges that universities face, as well as new tools and techniques that allow answering these challenges.

Today universities and their students generate digital data about learning activities at an enormous scale. From swiping library cards to being engaged in online courses the wide range of activities leave digital footprints that we have to learn to analyze. Universities have an unprecedented task to engage with these data in order to improve learning and general conditions of students' lives in educational settings.

Learning analytics and educational data mining are new research fields that aim at developing methods of collecting, analyzing and reporting this data to provide insights that can help all the groups involved in building better university education: students, teachers, and administrators. Students expect easy online access to educational resources, and that allows teachers and administrators to track their progress and engagement nearly in real time.

Leading universities strive to create more personalized and more engaging experience for students despite massification and digitalization of education. In fact, it is exactly this digitalization that allows new technologies and techniques to enhance students' educational experience. Innovations that seem to many as disruptive to the very fabric of academic life may turn out to be the solutions to many problems in higher education.

May 19, 2017

HSE St. Petersburg, 3A Kantemirovskaya st.

09:00–10:00	Registration, welcome coffee break
10:00–10:15	Opening of the Conference and Welcome Address

- **Sergey Kadochnikov,** Director of HSE St. Petersburg, Russia
- **Daniel Alexandrov,** Deputy Director of HSE St. Petersburg, Programme Director of the Conference

**10:15 am–
12:00 noon**

Panel Discussion I
"Universities and Smart Learning in 21st Century"

ICT and educational technologies have become ubiquitous in worldwide academic activity as well as the ongoing globalization of educational markets and present new challenges for world universities. The opening panel discussion will cover the major topics including strategic issues of educational technologies' development, new modalities of inter-university cooperation, the changing landscape of global education, and new patterns of interaction of Universities and IT companies.

**Topics
for discussion:**

- How the advancement of e-learning influences the University concept and the system of higher education as a whole?
- Future development of online education within the framework of the national priority project "Digital Learning Environment in the Russian Federation".
- New patterns of interaction in the evolving cooperation of Universities and IT companies.

Moderators:

- **Daniel Alexandrov,** Deputy Director, Dean, St. Petersburg School of Social Sciences and Humanities, Head, Laboratory of Sociology in Education and Science, National Research University Higher School of Economics, St. Petersburg
- **Huang Ronghuai,** Dean, Smart Learning Institute, Beijing Normal University

Speakers:

- **Valery Falkov,** Rector, Tyumen State University
- **Viktor Koksharov,** Rector, Ural Federal University named after the first President of Russia B. N. Yeltsin
- **Yaroslav Kouzminov,** Rector, National Research University Higher School of Economics
- **Sergei Mardanov,** Director, University Relations, Mail.Ru Group
- **Stephanie Teasley,** Research Professor, School of Information, Director, the Learning, Education & Design (LED) Lab, University of Michigan, President of Society for Learning Analytics Research (SOLAR)
- **Vladimir Timonin,** Deputy Director, Department of State Policy in Higher Education, Ministry of Education and Science of the Russian Federation
- **Vladimir Vasiliev,** Rector, ITMO University

12:00–13:00	Lunch

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1:00–3:30 pm

Plenary Session II
"Current Trends and Future of Smart Learning"

Learning analytics and new educational technologies have already proved invaluable in academic activities and speaking about the future of education we often imply these technologies being developed. The new trends in smart learning — a) social learning analytics, which studies students' interaction within online courses; b) integrated analytics of online and on-campus courses contributing to more accurate and precise estimation of the impact the new technologies have on the educational process; c) adaptive learning and recommendation systems within individual educational trajectories that help to personalize learning experience to full extent – attract the most interest. The implementation of smart learning technologies, besides addressing key issues, often poses new questions and challenges to researchers, developers and administrations of the Universities. The current evolvement of smart learning and the future of educational process in world universities will be the topic of the second plenary session.

Moderators:
- **Natalia Maloshonok,** Senior Research Fellow, Deputy Director, Centre of Sociology of Higher Education, Institute of Education, National Research University Higher School of Economics
- **Zhang Jingjing,** Associate Professor, School of Educational Technology, Beijing Normal University

Speakers:
- **Gráinne Conole,** Visiting professor, Dublin City University; Director, e4innovation
- **Evgeniya Koulik,** Director for Online Education, National Research University Higher School of Economics
- **Elena Razinkina,** Vice Rector for Academic Affairs, Peter the Great St. Petersburg Polytechnic University
- **Huang Ronghuai,** Dean, Smart Learning Institute, Beijing Normal University
- **Stephanie Teasley,** Research Professor, School of Information, Director, the Learning, Education & Design (LED) Lab, University of Michigan; President of Society for Learning Analytics Research (SOLAR)
- **Vasily Tretyakov,** Chairman, the Russia's National Open Education Platform; Director, Institute of Open Education, Ural Federal University named after the first President of Russia B. N. Yeltsin

3:30–4:00 pm

Coffee Break

4:00 pm–6:00 pm

Panel Discussion III
"Challenges and Obstacles in Introducing Next Generation Educational Systems"

Organizer:
Beijing Normal University

The next generation educational systems are a hot trend in the field of educational development. The application of new educational technologies often faces a range of challenges in terms of people, finances, research, and development. Introducing those technologies will inevitably alter the way university professors work and eventually affect the cost price of university education. These technologies generate big data which need to be integrated into existing data flows of a university. The aggregated and cleansed (scrubbed) data must be made available for professors and managers. There's an urge to bring the existing data systems of the universities into compliance with big data requirements which constitute quite a technological and methodological challenges. Then, there is organizational resistance to changes in higher education context such as structural and group inertia, perceived threat to expertise and eventually to existing power relationships. Moreover, it is difficult to measure the improvements in learning performance from the R & D point of view. Finally, there is an ethical issue of using teaching and learning data and student information data. We see new educational technologies and related learning analytics techniques as the paramount way for university education development; however, their actual effectiveness is limited for today. The panel discussion will focus on the obstacles in the adoption of learning analytics by universities. The participants will share their advanced experience of developing and disseminating new educational technologies.

Moderator:
- **Natalia Chicherina,** Deputy Director, National Research University Higher School of Economics, St. Petersburg

Speakers:
- **Daniel Alexandrov,** Deputy Director, Dean, St. Petersburg School of Social Sciences and Humanities, Head, Laboratory of Sociology in Education and Science, National Research University Higher School of Economics, St. Petersburg
- **Wu Fati,** Dean and Professor, School of Educational Technology, Beijing Normal University
- **Zhang Jingjing,** Associate Professor, School of Educational Technology, Beijing Normal University
- **Jelena Jovanovic,** Associate Professor, Department of Software Engineering, University of Belgrade
- **Zheng Qinhua,** Associate Professor, School of Educational Technology, Beijing Normal University
- **Sergei Roshchin,** Vice Rector, National Research University Higher School of Economics

EDUCATION & GLOBAL CITIES: SMART LEARNING FOR WORLD UNIVERSITIES

20 May 2017

Higher School of Economics — St. Petersburg, 3A Kantemirovskaya st.

09:00–10:00	Welcome Coffee

10:00 am–12:00   **Roundtable "Smart Learning Technology"**

Current developments in learning analytics and challenges it faces will be the topic of this session. Recommendation systems and adaptive learning, student assessment and visualization of educational outcomes, failure prediction and prevention will be discussed.

Topics for discussion:
- Big data for personalization and adaptive learning.
- Peer assessment algorithms and group and team formation.
- Learning analytics technologies and predictive models in education.

Moderator:
- **Alyona Suvorova,** Senior Lecturer, Department of Applied Mathematics and Business Informatics, National Research University Higher School of Economics, St. Petersburg

Speakers:
- **Dmitry Abbakumov,** Head, Centre for Psychometrics in eLearning, National Research University Higher School of Economics
- **Mikko-Jussi Laakso,** TUCS GP Supervisor, University of Turku
- **Jelena Jovanovic,** Associate Professor, Department of Software Engineering, University of Belgrade
- **Alexander Sirotkin,** Associate Professor, Department of Applied Mathematics and Business Informatics, National Research University Higher School of Economics, St. Petersburg
- **Maksim Skryabin,** Senior Data Scientist, Stepik
- **Stephanie Teasley,** Research Professor, School of Information, Director, the Learning, Education & Design (LED) Lab, University of Michigan, President of Society for Learning Analytics Research (SOLAR)

12:00–13:00	Lunch

1:00 pm–3:30 pm   Roundtable
"Online education"

The session will be focused on the practical issues of design, content and performance assessment of online courses. Smart learning practitioners will share their experience of developing and implementing online courses, programs, specializations and educational trajectories that complement university programs.

Topics for discussion:
- What are requirements for an online course to be a success?
- What instruments can be used for measuring the effectiveness of an online course?
- "Talking head" for everyone or an individual tutor for each student?
- From online school to online university: do we need a comprehensive online school available for everyone?

Moderator:
- **Evgeniya Koulik,** Director for Online Education, National Research University Higher School of Economics

Speakers:
- **Saule Bekova,** Junior Research Fellow, Centre of Sociology of Higher Education, Institute of Education, National Research University Higher School of Economics
- **Gráinne Conole,** Visiting professor Dublin City University; Director of e4innovation
- **Jelena Jovanovic,** Associate Professor, Department of Software Engineering, University of Belgrade
- **Daria Kravchenko,** Analyst, Centre for Psychometrics in eLearning, National Research University Higher School of Economics
- **Natalia Maloshonok,** Senior Research Fellow, Deputy Director, Centre of Sociology of Higher Education, Institute of Education, National Research University Higher School of Economics
- **Vasily Tretyakov,** Chairman, the Russia's National Open Education Platform; Director of Institute of Open Education, Ural Federal University named after the first President of Russia B. N. Yeltsin
- **Tatiana Semenova,** Junior Research Fellow, Centre of Sociology of Higher Education, Institute of Education, National Research University Higher School of Economics
- **Maksim Skryabin,** Senior Data Scientist, Stepik
- **Ulyana Zakharova,** Science and Methodology Specialist, National Reseach Tomsk State University

3:30–4:00 pm	Coffee Break

4:00 pm–6:00 pm

Roundtable
"Roundtable "Data and Computer Science Literacy"

The higher is demand for computer science and data analytics competencies the more obvious is the need for new forms of educational technologies that will allow expanding the courses, adapting them for new unconventional audiences and increasing their efficiency. The latest developments in computer science education will be the core topic of this session.

Topics for discussion:

- Things everyone should know about novel audiences of computer science courses.
- Blended learning and computer science: how to balance online and offline?
- Data science basic course: what is in there?

Moderator:

- **Alexander Sirotkin,** Associate Professor, Department of Applied Mathematics and Business Informatics, National Research University Higher School of Economics, St. Petersburg

Speakers:

- **Aleksei Dukhanov,** Head of Master's Programs, ITMO University
- **Mikko-Jussi Laakso,** TUCS GP Supervisor, University of Turku
- **Ilya Makarov,** Senior Lecturer, Deputy Head, School of Data Analysis and Artificial Intelligence, Faculty of Computer Science, National Research University Higher School of Economics
- **Ilya Musabirov,** Lecturer, Department of Sociology, Junior Research Fellow, Laboratory of Sociology in Education and Science, National Research University Higher School of Economics, St. Petersburg
- **Aleksei Natekin,** Open Data Science, DM Labs founder
- **Nikolay Vyakhkhi,** Co-founder, Stepik

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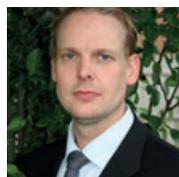
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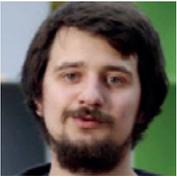
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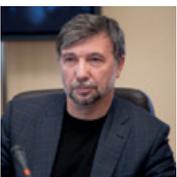
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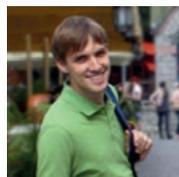
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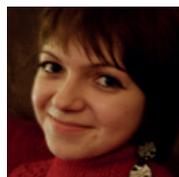
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