Analytical Support for the Modernizing Learning Environments
(P161005)

Summary report on the activities and outputs

2018
Contents

1. Background .............................................................................................................................. 3

2. Supporting the Ministry of Education and Science of the Russian Federation in the implementation of the federal program on school infrastructure development ...................... 3

3. Creating the conditions for a strategic brief for schools to inform design planning and implementation processes .......................................................................................................... 5

4. Capacity building activities for policy makers, school administrators, teachers, architects, engineers, and urban planners on school design ....................................................................... 9

5. Establishment of new partnerships in the area of school design to raise public awareness. ................................................................................................................................................... 10

6. Cooperation with the OECD and Learning Environments Evaluation Programme Study (LEEP) ......................................................................................................................................... 11

7. Conclusions and policy recommendations ........................................................................... 12

Annex 1. Post-Occupancy Evaluation of Schools .......................................................................... 15
Annex 2. Workshops on Education Infrastructure Design ............................................................ 17
Annex 3. Application Form for Stand alone South-South Knowledge Exchange Proposals ....... 22
Annex 4. Innovative learning environments: the role of efficient investments in Russian preschool education facilities (case of Khanty-Mansyisk region) ............................................................. 29

All referenced presentations and reports associated with this review are available at this link to the World Bank SharePoint
1. Background

This section represents an overview of all activities completed under the technical assistance "Analytical Support for the Modernizing Learning Environments “during the period from October 2016 till June 2018 017- 2018. The main aim of this task was to support Russian government in updating its policies and regulations on school infrastructure and learning environments and to contribute to improved quality of education and ensure the efficiency of investments in school facilities.

The scope of this technical assistance covered the following four thematic dimensions:

- Development of a framework for a strategic brief for schools to inform design planning and implementation processes.
- Capacity building activities for policy makers, school administrators, teachers, architects, engineers, and urban planners on school design.
- Establishment of new partnerships in the area of school design to expand public attention on the topic.

Under each thematic area, priority actions were identified. The following section summarizes the results achieved after the implementation of all activities.

2. Supporting the Ministry of Education and Science of the Russian Federation in the implementation of the federal program on school infrastructure development

On October 23, 2015, the Government of the Russian Federation approved a new Federal Program entitled “Assistance in Creating New Places per Child for General Education Institutions (schools) in the Regions of the Russian Federation for the period 2016-2025”. The main objective of this program is to expand the overall capacity of the primary and secondary school networks in Russia while considering demographics and new requirements for educational programs. The plan includes the construction of 14,234 new schools within the program. The main implementing agency for this program is the MoES, which has to coordinate the implementation with the Ministry of Construction and Housing (MoCH) and various regional authorities, across Russia. In 2015, before the launch of the federal program, an Inter-Agency Working Group on School Construction (IAWG) was set up by the Government to facilitate cooperation in regulatory norms harmonization and to ease the implementation progress.

As a priority activity in the implementation strategy, the MoES was made responsible for coordinating the inter-agency preparation of the so-called “Functional Requirements for the School Infrastructure.” This document was supposed to present the main requirements of school planning process, as well as the key elements of the school indoor and outdoor spatial arrangement. As planned, the regions would have had to use the following guidelines “Functional Requirements for the School Infrastructure “to prepare the terms of references for the project funded under the program. The MoES prepared a draft version of this document and
disseminated for a public review among key federal ministries, experts in education and school construction, as we as among the responsible executive agencies of various Russian regions.

Upon request from the responsible department of MoES, the World Bank team provided expert support in reviewing a draft document. After multiple revisions, these guidelines covered the following thematic aspects: i) general functional requirements; ii) functional requirements for the individual elements of school infrastructure; iii) functional requirements for the health and sport facilities; iv) functional requirements for creative/art spaces; v) functional requirements for common-use school premises; vi) functional requirements for administrative premises; vii) functional requirements for school outdoor territory; viii) guidelines for project economic efficiency estimations. A final version was prepared in May 2017 and submitted to the MoES.

Unfortunately, the administrative changes in the management and operational structure of the MoES slowed down the implementation progress of the federal program on school infrastructure. First, in August 2016 a new Minister of Education and Science was appointed, and the old and new ministerial teams went through a transition period during 2017. The responsibility for federal program implementation has shifted several times to different deputy ministries. At the end of 2017, the work on functional requirements was postponed based on the order of the Deputy Prime Minister Olga Golodets.

In May 2018 the MoES was divided in two separate federal ministries: Ministry of Science and Higher Education and Ministry of Enlightenment. Newly created Ministry of Enlightenment is responsible for the basic education policy and the implementation of the federal program on school infrastructure. This change has further slowed down work on the functional requirements for school infrastructure. The activities of the Inter-Agency Working Group on School Construction (IAWG) have also been frozen since 2017. The World Bank team is currently monitoring these developments and stands ready to provide expert advice on school infrastructure for both new ministerial teams.

The implementation of the national level programs always carries a risk of slow pace or face interruptions due to the administrative changes in the governance structure of involved institutions. However, active policy engagement of the team brought several requests from the school infrastructure related officials. Additionally, the team supported key client regions in the provision of the analytical inputs to updated relevant legislative norms and guidelines on educational facilities design. In 2017 the Ministry of Construction approved new regulatory norms entitled “Educational institution buildings. Design rules” (for schools) and a new set of construction norms entitled “Preschool educational institution buildings. Design rules” (for kindergartens). The federal sanitary norms and standards for the pre-school institutions were also revised. Thus, the educational infrastructure improvement will remain a priority for the new government, and the Bank team will continue the analytical support for this important work (with strategic and budget considerations in mind).

In particular, the team will continue considering the following directions:

1. Maintain and further develop the relationship with the newly appointed policy officers in the ministry, which is going to be made responsible for the implementation of All-Russian Federal Program entitled “Assistance in Creating New Places per Child for General
Education Institutions (schools) in the Regions of the Russian Federation for the period 2016-2025.

2. Contribute to the work of the Inter-Agency Working Group on School Construction (IAWG) or any other inter-agency committee, when the government re-start it again.

3. Provide analytical support to the key federal ministries responsible for the implementation of a new Presidential Decree related to the provision of early years placement in the pre-school institutions (0-3 years old).

4. Monitor the requests and support key client regions, namely, Moscow City, Khanty-Mansiysk Autonomous Region, Republic of Sakha (Yakutia), as well as the others, if they emerge, in the implementation of their activities related to above-mentioned federal agenda on kindergarten and school infrastructure.

5. Continue to organize capacity building activities for the local experts and policy makers involved in the design, construction and maintenance of educational facilities on the following topics: learning environments design and its impact on child development, educational facilities management, briefing and evaluation methods, user experience assessment for education facilities design, harmonization of regulatory framework for education facilities design, etc.

6. Conduct a pilot research study on the impact between the characteristics of learning environments and academic achievements of the pupils (based on OECD methodology – Learning Environments Evaluation Program (LEEP) and stimulate the discussion on evidence-based education facilities design.

7. Promote the international best-practices and knowledge products on educational facilities design among Russian experts and policy makers.

3. Creating the conditions for a strategic brief for schools to inform design planning and implementation processes

The World Bank team has focused the attention on sharing international best-practices of the users’ needs evaluation methods among key Russian stakeholders (school administrators, educators, architects, and specialists from federal and regional ministries). The experts confirm that during the planning, design, and construction of schools in Russia the actual users (pupils, teachers and school administration) are rarely involved. Additionally, after the commissioning of a school building, there are no established practices of the of school quality evaluation during the occupancy period.

To inform Russian expert community about these methodologies, the World Bank team organized a series of knowledge sharing events. These events and prepared materials focused on the processes before the building design and after the building is occupied.

To better inform the design and users engagement, the World Bank has translated the Danish guidelines on school planning. Previously the Bank did the same for the kindergartens. Also the Bank has shared the best practices on school briefs, stemming from Hellerup school in Copenhagen. The team disseminated these documents in Russian.
Further, the team arranged an international workshop entitled “Post-Occupancy Evaluation in School Facilities Design: International Experience and Opportunities for Russia,” on November 8, 2017. The main aim of this event was to present the international best practices of post-occupancy evaluation: a method to collect users’ feedback on the quality of a building in use. The post-occupancy evaluations (POEs) are widely used internationally for school planning and design to inform rehabilitation. Additionally, the results of POEs can be used to inform future designs of new school buildings. For example, the school provider/municipality constructs the schools in the framework of the long-term investment program. The stock of the buildings constructed under the first stage of the program go through the POEs, and the results may be used to improve the quality of new facilities designed during the next stage of the program. In a Russian context, designers never applied these practices.

This event was organized on the premises of “Horoshkola” school, which is a newly constructed school and represents one of the few best examples of contemporary learning environments in Russia. This opportunity allowed not only to do a workshop but also to run a demonstration of the POE with the children, teachers and administrative staff of the school. After the completion of this event, the school principal Ms. Elena Bulin-Sokolova and her team received a POE report with the recommendations. A copy of Horoshkola POE findings is enclosed to the project documentation as a separate deliverable.

Overall, the counterparts in Russia were informed about the best practices of a modern school building process before and after the architectural and engineering design. The Table 1 below provides overall summary of recommendations.
Table 1. Recommendations to inform school design planning and implementation processes in the Russian Federation

<table>
<thead>
<tr>
<th>SCHOOL DESIGN AND IMPLEMENTATION CHALLENGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• During the planning, design, and construction of education facilities in Russia, the actual users (children, educators, and administration) are rarely, and their needs are not fully accessed.</td>
</tr>
<tr>
<td>• After the commissioning of an education facility, there are no established practices to evaluate the quality of the building and outdoor areas during the occupancy period. Thus, it is impossible to identify and promote the best design and engineering solutions, as well as to eliminate poor performing ones.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RECOMMENDATIONS FOR IMPROVEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>• It is recommended to introduce a new structure and approaches to prepare a technical brief (terms of references). This document should include the main aim and priorities of educational facility project, description of location and analysis of the community and user’s needs, a statement on size and capacity, key requirements of a future building and outdoor area, as well as engineering solutions.</td>
</tr>
<tr>
<td>• After the educational facility starts to operate, it is recommended to conduct a post-occupancy evaluation, which helps to understand the building performance, usage, and user’s satisfaction. Later this information can be used to introduce additional changes to the education facility operation or can be used by the municipality for the future planning of the kindergarten schools in the region. This approach may help to analyze and update the standard modular designs in the All-Russian register for educational facilities run by the Ministry of Construction.</td>
</tr>
<tr>
<td>• It is important to have an established mechanism for the consultations with the users and main stakeholders at each stage of planning, designing, construction and maintaining an educational facility.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RELEVANT INTERNATIONAL EXPERIENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Germany</td>
</tr>
<tr>
<td>Uruguay</td>
</tr>
<tr>
<td>United Kingdom</td>
</tr>
<tr>
<td>SUGGESTED PRACTICES AND TOOLS</td>
</tr>
<tr>
<td>------------------------------</td>
</tr>
</tbody>
</table>
| **Quality Assurance Tools**  | **Early Childhood Environment Rating Scale (ECERS)**  
**School-Age Care Environment Rating Scale (SACERS)** |
| **User Evaluation Tools**    | The instruments, which include different questionnaires designed for main school users (students, teachers, and school leaders) and allow to collect evidence on space usability at the school level. |
| **OECD Learning Environments Evaluation Programme (LEEP)** |  |
| **Post-Occupancy Evaluation** | The methodology, which consists of observation technics and interviews aimed to understand the building performance, usage, and user’s satisfaction. |
| **Horoshkola Demo POE** |  |
4. Capacity building activities for policy makers, school administrators, teachers, architects, engineers, and urban planners on school design

Under this thematic area the following key international workshops were organized:

- **March 16-17, 2017. Creation and Development of Educational Institutions in the 21st century (Moscow, World Bank);**
  The workshop brought together World Bank experts and project managers, as well as national representatives from the public authorities, project implementation unit for Russian federal program on school infrastructure “Shkola-2025”, education/construction industry, civil society and research think-tanks to explore and discuss the opportunities and challenges related to education facilities design. The speakers showcased best practices from Europe and Latin America regions (including some of the World Bank projects in Belarus and Uruguay), as well as from different Russian regions, focusing on the aspects of intergovernmental and interdisciplinary cooperation on education facilities design.
  The team continued to familiarize Russian experts with the international best-practices in school design and translated into the Russian language the “Guidelines of Effective School Construction in Germany” prepared by the Montag Foundation and German Union of Architects and the article on the impact of classroom design on pupils’ learning written by Prof. Peter Barrett and the team of the University of Salford (UK). These publications were approved by the authors and disseminated among the participants.

- **May 28, 2018. Current Aspects of Educational Infrastructure Development in the Russian Federation (Moscow, Analytical Centre under the Government);**
  This workshop was organized in cooperation with the Analytical Center of the Government of the Russian Federation. The agenda of the workshop was based on the priorities of the latest Presidential Decrees on improving educational infrastructure for general and early years education. Additionally, the workshop discussed the public-private partnerships and investments in school infrastructure in Russian Federation and the United States. The participants discussed the status of the regulatory framework for education facilities planning, design, and construction, current demands for the quality of new facilities, as well as familiarize themselves with the international best practices on educational facilities management and assessment. Representatives of federal agencies on education, construction and fire protection, education and school design experts, school planners and architects took part in the workshop. The recommendations from the workshop together with the materials were submitted to the Government of the Russian Federation.
  The team also translated into Russian and prepared for publication a Danish model program on school planning and design. This document is prepared by the Danish philanthropic organization “Realdania,” which specializes in preparing participatory guidelines for the educational, social and health facilities.
Additionally, within this technical assistance, the team arranged the participation of counterparts in the following conferences (different Russian regions included), where the team presented international best practices in kindergarten and school planning and design, and shared the analytical work of the World Bank in these areas:

- **May 11, 2017**, World Bank Section on “Learning Environments,” VI International Conference "Early Childhood Care and Education" (ECCE 2017), Moscow
- **July 7, 2017**, Expert Meeting on Technological Campus Design Concept; Ulyanovsk
- **September 26, 2017**, Build School 2017 Exhibition and Conference;
- **March- April 2018**, Jury membership in Martela EdDesign Awards (a national first award on education facilities design to promote best-practice among Russian regions);
- **May 18, 2018**, World Bank Section on “Investments and Efficiency in Early Childhood Development and Early Years,” VII International Conference "Early Childhood Care and Education" (ECCE 2018), Moscow

The events mentioned above had high participation rate. The ECCE conferences had the international and Russian presence of around one thousand participants every year. Other smaller workshops had the invitation lists and included policymakers, school infrastructure practitioners and experts from Moscow and Russian regions.

To reflect on the Russian experience in developing innovative learning environments the team prepared an article “Innovative learning environments: the role of efficient investments in Russian preschool education facilities (case of Khanty-Mansyisk region).” The article was submitted to the international journal “Intelligent Buildings international.” The text of the article is enclosed to the annex (in English).

To facilitate South-South cooperation, the World Bank team participated in the World Bank South-South Facility in May 2017. The main aim was to organize a knowledge exchange between federal agencies of Russian Federation and Belarus, involved in school infrastructure modernization, and federal agencies of Argentina and Uruguay to analyze lessons learned from planning, design, construction, operation, and maintenance of school facilities. Unfortunately, the following application was not selected for the funding; however, the team is planning to investigate other possible opportunities for organizing such cooperation. The application package is enclosed in the annex (in English). Also, the international workshop on March 17, 2017, in Moscow brought together Russian and Belarusian representatives of the educational ministries. During this seminar, the Bank team fostered the knowledge exchange on the Bank’s financed programs in Belarus, Uruguay, and Argentina, including school rehabilitation and full-time schools.

**5. Establishment of new partnerships in the area of school design to raise public awareness.**

The team established a partnership with the Analytical Center for the Government of the Russian Federation, a think-tank and a good platform to initiate inter-regional or inter-agency policy discussions on the education facilities infrastructure.
Additionally, the team is planning to participate in the next conference in the framework of the Build School exhibition, which is annually organized by the Russian Union of Architects and Moscow’s Union of Architects and serves as a platform for real estate developers, architects, regional and federal authorities involved in education facilities planning, design and construction.

The team also received a request from the partner organization All-Russian Research Institute of Fire Protection under the Ministry of Emergency Situation of Russian Federation. This institution is responsible for the development of new regulatory norms on fire protection and is currently developing a new regulatory framework for the Moscow city. New norms and standards should cover the design of transformable units/blocks for kindergartens and primary schools and ease the construction of the school buildings in the very dense urban district.

6. Cooperation with the OECD and Learning Environments Evaluation Programme Study (LEEP)

During the implementation of this work, the Bank team has been cooperating with the OECD Center for Effective Learning Environments. The Bank participated in two OECD official meetings events during this implementation period, namely in Italy and Norway. During these visits, the Bank shared the developments in educational facilities design projects undertaken in Russia and ECA, including the cooperation in research on learning environments. The OECD Centre for Effective Learning Environments (CELE) has shared with the Bank, the methodology of learning environments evaluation - Learning Environments Evaluation Program (LEEP), that was later translated into Russian.

The LEEP instrument is a tool developed by the OECD, which consists of three questionnaires for the pupils, teachers and school principals and allows to collect the information about the usage of school space, teaching and learning approached within learning environments, and user’s satisfaction with spatial arrangements of school. In 2018, the team has agreed with the Centre for Education Quality Monitoring, Russian Academy of Education, to review the Russian version of LEEP questionnaires.

The reviewed and piloted instrument will be potentially used for further research in Russia.
### 7. Conclusions and policy recommendations

#### I. School design-related recommendations:

<table>
<thead>
<tr>
<th>Conclusions</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. According to the experts, the quality of spatial organization and usability in Russian schools is estimated at average levels, and there are numerous areas for improvement.</strong> For example, the lowest scores on the School-Age Care Environment Rating Scale (SACERS) scale (2017) shows the following indicators at a 7-point scale: &quot;Space and furnishing&quot; - 4.07 points; &quot;Physical Activity and Time of Conduct&quot; - 3.86 points (the lowest in comparison with other scales); &quot;Special needs&quot; - the creation of conditions for students with special education needs (4.44 points). The experts identified the following key problems in developing contemporary educational infrastructure in Russia: the lack of educational spaces (lower than in OECD countries), the lack of relation between the design of specialized school premises and a specific curriculum, as well as the needs of users (students and teachers), uniformity of design and equipment, the lack of flexible and transformable spaces for the organization of a variety of forms of curricular and extracurricular activities.</td>
<td>It is important to continue the advocacy and knowledge exchange on school design in Russia and find the channels to transfer expert findings to the policymakers responsible for school planning, design, and construction. To better inform the quality of Russian school designs, the country would need to stimulate further research studies on quality of learning environments and develop evidence-based policy measures. Moreover, it is essential to include Russian researchers and practitioners in international dialogue on educational facilities planning. It will allow sharing the emerging practices from Russia as well as inform national policy with the best practical examples available.</td>
</tr>
<tr>
<td><strong>4. The experts also noted a missing connection between the social and pedagogical demands and already developed school designs.</strong> The development of design briefs and the design of new buildings often do not take into the account the needs of the pedagogical community, students, parents, the municipality. That hinders the development of contemporary learning environments and seriously affects the quality and comfort of modern schools. At the same time, the international best practices confirm that the key factor in creating learning environments is the participation of its main users in the design process. It is especially important to involve the school principal in the process.</td>
<td>Russia may follow some best practices from the OECD countries and increase social inclusion in school design and briefing process. This approach will help both to define the contemporary educational facilities and provide mechanisms for public discussion of educational infrastructure projects.</td>
</tr>
</tbody>
</table>
### II. School planning-related recommendations:

<table>
<thead>
<tr>
<th>Conclusions</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is growing demand for the additional and sustainable solutions for school infrastructure development financing both on federal and regional levels.</td>
<td>To maximize finance and provide diverse options for school infrastructure development, it is recommended to develop investment models including public-private partnerships.</td>
</tr>
<tr>
<td><strong>The outdated regulatory framework for schools planning, design and construction still hinder the mainstreaming of contemporary approaches of school design into practice across Russian regions.</strong> International experience suggests that new school design projects are increasingly starting to focus on the following criteria: openness, flexibility, multifunctionality, the ability to ensure the personal safety of students and teachers, as well as accessibility. According to the experts of the All-Russian Research Institute of Fire-Protection under the EMERCOM, the examples of such facilities do exist in Russia already. For example, these are the Sirius Education Center in Sochi, &quot;Khoroshevskaya school&quot; in Moscow, kindergarten in Beloyarsky city in the Khanty-Mansiysk Region, and preschools in the Republic of Sakha (Yakutia). However, special technical project documentation was prepared for each case, because although the design concepts did follow the international best-practices, at the same time contradicted with the federal regulations of the construction and provision of fire safety. To transfer these new designs principles to the mainstream practice and to make it easily applicable in different Russian regions, the harmonization of existing regulatory framework is needed.</td>
<td>To improve the regulatory requirements for schools and development of modern school design, the authorities may consider amending the legislation to eliminate unnecessarily &quot;stringent&quot; requirements and contradictions with between different type of legislative documents, including construction, sanitary and fire protection norms and standards. It is also recommended to conduct the analysis of newly designed schools, which followed the special technical conditions procedure, and to identify key design principles, which should be included into mainstream regulatory norms and standards on school design.</td>
</tr>
</tbody>
</table>

### III. School management-related recommendations:

<table>
<thead>
<tr>
<th>Conclusions</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The coordination between key federal ministries and agencies responsible for school infrastructure development remains weak in Russia.</strong> In 2015-2017 the Government and the MoES tried to introduce new mechanisms for interagency cooperation,</td>
<td>It is recommended to reinstate the work of the Inter-Agency Working Group on School Construction (IAWG) to discuss the optimal</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
namely working groups and functional requirements, which should have identified the appearance and content of new schools. However, both the activities of the working group and functional requirements have not been properly developed. Additionally, the implementation of regulations for the federal program on school infrastructure didn’t include the following measures such as risk management, monitoring, and evaluation of qualitative changes in the educational infrastructure. The system of interagency cooperation still requires strong attention and support at the governmental level to foster the development of contemporary learning environments and harmonization of regulations on school planning, design, and construction.

The current system on school infrastructure development and maintenance has other drawbacks, including its overall lack of flexibility, which has a particularly negative effect on the overall result regarding budgetary efficiency. Some specific limitations imposed on the general education system, as well as the mismatch of a large number of regulation determined by different controlling bodies, leads to an increase in construction costs without increasing the efficiency of using educational spaces. Various examples from the Russian database of school design show that, with reasonable planning, you can increase the efficiency of projects up to 30% (see Annex 4), while creating better conditions for learning and development.

Russian Federation may streamline resources to assess the effectiveness of school projects (including the standard modular designs). The assessment may focus on the cost and energy efficiency of educational spaces, its long-term sustainability based on the life-cycle approach. Additionally, the Russian scholars may develop and/or apply instruments for educational infrastructure evaluation (including the needs of students and teachers, the learning environment’s fit with the needs of the pedagogical process). It could be possible to carry out the research studies, taking into the account the features of the current educational standards.
Annex 1. Post-Occupancy Evaluation of Schools

This section offers an overview of workshop activities and materials on post-occupancy evaluation demonstration in Horoshkola School in Moscow. The post occupancy report is attached to the activity as a separate paper.

1.1 International Workshop “Post-Occupancy Evaluation in School Facilities Design: International Experience and Opportunities for Russia” (November 8, 2017)

AGENDA

November 8, 2017

Moscow, Horoshkola School

8.30 – 9.30 Registration of participants. Welcome-coffee

9.30 – 10.00 Opening session.

- Elena Bulin-Sokolova, Principal of the Horoshkola school
- Tigran Shmis, Senior Education Specialist, World Bank

10.00 – 10.30 Siv Marit Stavem, School planner, briefing specialist, Norconsult, Norway

How can good school design contribute to better learning?

10.30 – 11.00 Christopher Watson, Architect, Watson Consultancy Limited, New Zealand


11.00 – 11.15 Coffee-Break

11.15 – 12.15 Q&A session

12.15 – 13.15 Discussion “How POE methodology can support high quality design of educational facilities in Russia?”

13.15 – 14.00 Lunch

14.00 – 15.00 4-7 Horoshkola pupils in walk through interview on ground floor with Chris and 2 World Bank observers

4-7 Horoshkola pupils in walk through interview on ground floor with Siv and 2 World Bank observers

15.00 – 16.00 Up to 7 Horoshkola administrators and technicians in walk through interview on ground floor with Chris and 2 World

3-7 Horoshkola teachers in walk through interview on ground floor with Siv and 2 World Bank observers
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.00 – 17.00</td>
<td>Participatory workshop of all to consolidate and exchange group</td>
</tr>
<tr>
<td>17.00 – 17.30</td>
<td>Review and reflection discussion</td>
</tr>
</tbody>
</table>
Annex 2. Workshops on Education Infrastructure Design

This annex provides collection of workshop’s agenda and materials.

3.1 Creation and Development of Educational Institutions in the 21st century
(March 16-17, 2017, Moscow, World Bank)

International Workshop
“Creation and Development of Educational Institutions in the 21-st Century”
March 16-17, 2017, Moscow, The World Bank

WORKSHOP AGENDA

Thursday, March 16

09.30 – 10.00 Registration and welcome coffee

10.00 – 10.30 Welcome addresses:
Sylvie Bosoutrot, Program Leader for Russia
Cristian Aedo, Manager, Education Global Practice

10.30 – 11.00 Roman Gusev, Head of Federal State Public Enterprise “Directorate “School-2025”
National Program on New School Places per Child Creation in the Russian Federation as the Effective Policy Instrument in the Education Sector

11.00 – 11.30 Tumun Tsydypov, Head of Institutional Development Department, Analytical Center under the Government of Russia
Priority Areas of Reforming the Regulatory Oversight and Supervision System

11.30 – 12.00 Q&A

12.00 – 12.15 Coffee-break

12.15 – 13.00 Diego Ambasz, Senior Education Specialist, World Bank
Role of School Infrastructure in Improving Education Outcomes: School Infrastructure Overview – World Bank Contribution in Latin America – Uruguay Case Study – Full Time School Model
13.00 – 13.15  Q&A

13.15 – 14.00  Lunch

14.00 – 14.30  Tigran Shmis, Senior Education Specialist, World Bank

To Do More with Less: Interagency Cooperation as the Key Condition for the Efficient School Construction Projects

14.30 – 15.00  Q&A

15.00 – 16.15  Discussion

16.15 – 16.30  Wrap-up and Conclusions

Friday, March 17

10.00 – 10.05  Presentation of agenda for Day 2

10.05 – 10.35  Alastair Blyth, Department of Architecture and Built Environment, Westminster University, OECD expert

Creating Effective Learning Environments: International Experience

10.35 – 10.50  Q&A

10.50 – 11.20  Barbara Pampe, Head of Pedagogical Architecture Section, Montag Foundation

Implementation of Schools Construction and Rehabilitation Programs in Germany

11.20 – 11.35  Q&A
11.35 – 11.55  Dmitrii Shalukho, Deputy Head of Technological Resources Department, Ministry of Education of the Republic of Belarus

_Educational Infrastructure Development: A Case of the Republic of Belarus_

11.55 – 12.05  Q&A

12.05 – 13.00  Discussion

13.00 – 13.15  Wrap-up and Conclusions

13.15 – 14.00  Coffee-break
3.2 Agenda and Materials of International Workshop “Current Aspects of Educational Infrastructure Development in the Russian Federation” (May 28, 2018, Moscow, Analytical Centre under the Government)

AGENDA

9.50 – 10.10  Registration of participants. Welcome coffee.

10.10 – 10.20  Workshop Opening. Welcoming words.
Andras Horvai, Country Director for Russia
Gleb Pokatovich, Deputy Head of Analytical Center for the Government of Russian Federation
Inna Karakchieva, Lead Adviser of Analytical Center for the Government of Russian Federation
Dorota Agata Novak, Russia Program Coordinator, World Bank

10.20 – 11.30  Efficient Investments in Educational Infrastructure
Tigran Shmis, Senior Education Specialist, World Bank
Aleksey Baranovkyi, Head of Department, VNIIPO EMERCOM Russia

Analyzing Existing Educational Infrastructure: Approaches and Practices in Norway
Siv Stavem Marit, School Planner, Norconsult

11.30 – 12.00  Discussion
Elena Odoevskaya, Analyst, Institute of Education, National Research Institute Higher School of Economics
Tatiana Volosovets, Director of Institute of Childhood, Family and Upbringing Research
Irina Komarova, Lead Expert, All-Russian Academy for Export Trade, Ministry of Economic Development

12.40 – 13.10  Coffee-break

13.10 – 15.00  Discussion
Feodosia Gabysheva, Deputy Minister of Education and Science, Republic of Sakha (Yakutia)
Natalia Semenova, Minister of Education and Science, Ulyanovskaya Oblast
Viktor Panin, Head of the Committee of Education Services Consumer Protection
15.00 – 15.20  *Investments in School Infrastructure in USA and Role of Public-Private Partnerships in School Infrastructure*

Mary Fillardo, Executive Director of 21st Century School Fund

15.20 – 15.50  Discussing the Recommendations on Educational Infrastructure Development in Russian Federation

15.50 – 16.00  Workshop Closure
Annex 3. Application Form for Stand alone South-South Knowledge Exchange Proposals

The following document can be used as a guide to the applicant on the type of information to be filled in the Stand alone Application Form.

In order to apply for funding under the Stand alone window of the South-South Facility, the applicants must complete this application form and send it to southsouthfacility@worldbank.org together with all required documents, no later than Monday 15 May 2017.

If you have any questions, please send an email to southsouthfacility@worldbank.org

For a valid Stand alone South-South Knowledge Exchange proposal submission, please:

1. Review the Guidelines and Operating Procedures for the South-South Facility
2. Complete this Stand alone SSKE Application Form (also available on the SSF Spark page). Please note that all fields are mandatory unless indicated otherwise.
3. Send your completed application form to southsouthfacility@worldbank.org with subject: “SSF Stand alone application: [title of the Knowledge Exchange]”
4. In case you feel the need to edit your proposal after you already submitted it, please forward the revised version building on your previous email and make sure the subject line indicates: “Cancels and replaces the previous proposal”
5. Attach in the email with the application:
   - An endorsement from the CMU of (all) the country(ies) involved in your proposal;
   - A statement from your Practice Manager endorsing that (i) the proposal is technically sound (e.g., the countries selected for learning have something to offer in the technical area); and that (ii) the proposed Knowledge Exchange, if selected, will be included in your unit’s work program.
   - Any other supporting documentation
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Title of South-South Knowledge Exchange</strong></td>
<td>Exchanging Regional Experiences on Learning Environments and Education Infrastructure between Argentina, Uruguay, Belarus and Russia</td>
</tr>
<tr>
<td>2. <strong>Region(s)</strong></td>
<td>ECA, LAC</td>
</tr>
<tr>
<td>3. <strong>GPs or CCSAs</strong></td>
<td>EDU</td>
</tr>
<tr>
<td>4. <strong>Primary GP or CCSA</strong></td>
<td>EDU</td>
</tr>
<tr>
<td>5. <strong>Managing Unit of Applicant</strong></td>
<td>GED03</td>
</tr>
<tr>
<td>6. <strong>Amount</strong></td>
<td>25,000</td>
</tr>
<tr>
<td>7. <strong>Staff week for GGELI services</strong></td>
<td>How much do you have available to finance GGELI staff time? Enter the details in the budget table below.</td>
</tr>
<tr>
<td>8. <strong>Applicant</strong></td>
<td>Diego Ambasz, Tigran Shmis</td>
</tr>
<tr>
<td>9. <strong>Team Members</strong></td>
<td>Maria Ustinova</td>
</tr>
<tr>
<td>10. <strong>Sector</strong></td>
<td>Education, Public Administration</td>
</tr>
<tr>
<td>11. <strong>Estimated Start Date</strong></td>
<td>June 10, 2017</td>
</tr>
<tr>
<td>12. <strong>Estimated End Date</strong></td>
<td>March 20, 2018</td>
</tr>
<tr>
<td>13. <strong>Countries Receiving Knowledge</strong></td>
<td>Republic of Belarus, Russian Federation</td>
</tr>
<tr>
<td>14. <strong>Countries providing knowledge</strong></td>
<td>Argentina, Uruguay</td>
</tr>
<tr>
<td>15. <strong>Type of stakeholders</strong></td>
<td>Employee of a Ministry, Ministerial Department or Implementation Agency; Local Government Office or Staff; Academic/training/research institution</td>
</tr>
<tr>
<td>16. <strong>Project ID</strong></td>
<td>P148181, P161005, P159771, P133195</td>
</tr>
<tr>
<td>17. <strong>Project Name</strong></td>
<td>Belarus Education Modernization Project; Education Infrastructure Support for Russia; Uruguay Improving the Quality of Initial and Primary Education Project; and Argentina Second Rural Education Improvement Project (PROMER II).</td>
</tr>
<tr>
<td>18. Development Challenge</td>
<td>Middle-income countries that are World Bank clients implement large education projects with significant components of education infrastructure. Countries struggle to improve the efficiency of the investment and at the same time are trying to innovate on how to make the learning environment conducive to learning. While the Bank is making a lot of the infrastructure investments – $USD 1 billion in LAC for education infrastructure and almost $USD 0.8 billion in ECA – those activities are lacking interaction and exchange of experiences. The proposed exchange would help countries learn from best practices gained in each region, increase the efficiency of the investment operations, and release more funds for teacher training, curriculum development, and soft-side innovations. For both Belarus and Russia, the exchange would help better implement CPF/SCD as this activity targets current operations in these countries.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>19. Capacity Development Goal</td>
<td>The country representatives will gain more expertise in planning and implementing coherent education development and infrastructure projects, including design, construction, maintenance, property management, energy and cost efficiency. They will also better understand practices of using learning environments, and research related to the connection between learning environments and student outcomes.</td>
</tr>
</tbody>
</table>
| 20. Outputs and intermediate capacity outcomes | The outputs would include:  
  - The exchange of the four participating countries’ notes describing the projects, their bottlenecks and best practices as well as major projects documents; these notes and documents would be translated into Spanish and Russian.  
  - A review and feedback on the exchange visits by the participants;  
  - A synthesis report on the visits summarizing the feedback of participants and recommendations by the Bank staff;  
  - Presentations, and a blog article on the visit with lessons learned. Participants from ECA and LAC are expected to learn best practices from four projects and apply the best matching solutions to their own projects. |
| 21. Country Ownership | What evidence do you have that the country (countries) requesting the knowledge exchange is/are committed to the stated goal? |
All four countries are delivering projects in the area of education infrastructure; all countries are participating actively in international exchanges within their regions.

**What evidence is there that the country (countries) have political and financial support to catalyze change?**

All countries are active borrowers of the Bank for education infrastructure (or users of the TA in that area including RAS).

**What evidence do you have that the countries targeted by your proposal are interested in engaging in KE activities over a period of time?**

All countries’ representatives have confirmed their interest in participation and the implementation of the gained relevant experience in the ongoing project.

### 22. Participant Profile

**Describe the role of the participants who will be receiving knowledge and why they are in a position to play an active role in bringing about change.**

Belarus has recently announced a set of reforms in the social sector of the country. While the government is willing to provide quality and efficient educational services, experts and education practitioners would need to address several basic tasks. The Belarus Education Modernization Project (BEMP) is an investment operation of the World Bank that is supporting the improvement of learning environments in Belarussian schools. The schools of Belarus targeted in the project are accommodating more students after school network optimization. The project also includes several improvements in the management of education systems and quality assurance (including the participation of Belarus in PISA 2018). Representatives of Belarussian government and the project implementation unit will be open to sharing their experiences and learning from LAC regional experiences as well.

The participants from the Republic of Belarus will include:
- Dmitry Shalukho, Deputy Director of the Department, Ministry of Education;
- Pavel Malyschenko, Director of the BEMP PIU;
- and representatives of project organizations and municipalities.

In 2012 the Russian education system started to reform its school infrastructure. In the initial period the government invested heavily in the expansion of ECD infrastructure. From 2015 the government
developed a plan to invest approximately $50 billion (USD) to establish a national program of full-time schools until 2025. During the implementation of this program, Russia gained a lot of experience, but needs an exchange on best international practices. Representatives from think tanks and government are willing to participate in this exchange program.

The participants from the Russian Federation will include:
- Irina Petrunina, Deputy Director of the Department, Ministry of Education and Science;
- Pavel Sergomanov, Director of the Center for Education Leadership, Higher School of Economics;
- Oleg Rubtsov, Director of the Laboratory of Design and Construction, Moscow State Construction University;
- And researchers from the school architecture and quality learning environments.

### 23. Institutions providing knowledge

<table>
<thead>
<tr>
<th>List on a separate line the name of the institutions providing knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Uruguay:</strong></td>
</tr>
<tr>
<td>1. Ministry of Education and Culture of Uruguay;</td>
</tr>
<tr>
<td>2. ANEP – Administración Nacional de Educación Pública;</td>
</tr>
<tr>
<td>3. Full-time school project PIU (PAEPU);</td>
</tr>
<tr>
<td><strong>Argentina:</strong></td>
</tr>
<tr>
<td>1. Ministry of Education and Sport (Argentina) – DGUFI (General Directorate of the Unit for International Financing);</td>
</tr>
<tr>
<td>2. PIU PROMER;</td>
</tr>
<tr>
<td>3. Ministries of Education at the sub-national level.</td>
</tr>
</tbody>
</table>

### 24. Knowledge Provider Experience

**Describe the type of knowledge that will be shared by participants and how this experience is relevant to other countries**

**Argentina:**
In recent years, the federal government of Argentina managed projects ranging from kindergartens to high schools in 24 provinces. The legislation that is used, and the administrative and technical procedures put in place for these programs, are very valuable and should be studied further.

The participant's list:
- Silvia Candegabe, architect;
- Augusto Araoz (Infrastructure Unit);
- Government officials;
And two professionals from the provinces to be designated, government officials and educations specialists.

Uruguay: The PAEPU projects got perfected and enhanced over the years with one important constant: the quality and appropriateness of the architectural response to educational needs at very well controlled construction costs. The other unique contribution of PAEPU is the maintenance program with community participation designed to extend the useful life of the recently built schools on a cost-sharing basis.

The participant's list:
Pedro Barran, architect;
Pablo Etcheverry, architect;
Walter Gurruchaga (Infrastructure Unit);
And government officials and education authorities, educations specialists.

### 25. Knowledge Provider Sharing Capacity

For each of the knowledge providing countries, provide evidence that the knowledge providing country is well-positioned to provide the knowledge and experience for the recipient country(ies) to achieve their capacity development objectives.

Over a decade Argentina and Uruguay have been receiving the delegations from the middle-income countries to share experiences on educational challenges including school infrastructure as part of the South-South experience: Brazil, Dominican Republic, Armenia, etc. The following projects and initiatives were presented to international participants: (i) Full-time Schools Model, and (ii) Ceibal Plan (“one laptop per child” project)

### 26. OKS Engagement?

No, none of the participating countries have OKS arrangement. Is the institution providing knowledge an OKS engagement? Select the following link to view the list of [OKS engagements](#).

### 27. Activities

**Activities and duration**

Activity 1- Exchange of information. 4 weeks, starting in June - July 2017

Key project documents will be identified, translated and circulated among all participants. It is very important that all participants be familiar with each other’s projects regarding objectives, accomplishments, designs, systems, procedures, costs, geographical and cultural conditions, etc. Such information will be structured to
highlight the educational objectives of each of these objectives and the programs devised to implement them.

Activity 2- Direct discussions, project tours. 1.5 weeks.

Professional teams from Belarus and Russia will travel to Argentina and Uruguay to have direct discussions with the local teams and to visit ongoing projects.

On the first and second day of the week, teams will be exposed to a larger spectrum of stakeholders including government officials, professionals of different areas, the private sector and civil society representatives. The visiting teams will come with the presentations of the projects and activities in Russia and Belarus, presenting the scope, issues, and tasks to be implemented in the coming years.

On the third (and fourth) day, teams will tour school buildings in different geographical locations that have been in operation for at least one year. They will be able to interact with teachers, students and community representatives.

The last day of each country visit will be dedicated to highlighting the achievements and areas for development for each project and to draw conclusions that could be of mutual value to either or all participating parties.

Activity 3- Sharing and broadcasting. 4 weeks.

All lessons learned during Activities 1 and 2 will be organized in a summary publication oriented to enrich Bank knowledge and expertise, support other projects that could have similar objectives and working conditions, as well as to promote solutions worked out during the visits at the national level of each participating country.

28. Attachments

Attach the following documents to your application form
- Endorsements from CMUs and Practice managers
- Any supporting documentation relevant to application (optional)

Tigran Shmis and Dmitry Chugunov, Maria Ustinova, Jure Kotnik

Innovative learning environments: the role of efficient investments in Russian preschool education facilities (case of Khanty-Mansyisk region)

This article describes an example of early childhood development (ECD) facilities intervention in the Khanty-Mansyisk region of Russia and its possible effects on efficiency gains in that region and the country overall. The government of this region is introducing changes to the built environment of the ECD centers. The proposed modern design is based on a concept of the learning environment as a third teacher. The smaller footprint of the new building allows us not only to increase active space per child but also to apply energy efficiency measures. The economic impact of such measures, by reducing operating costs throughout the lifecycle of the building help provide a strong argument to the region to promote a child-centered ECD infrastructure.

Keywords: early childhood development, innovative learning environment, preschool education facilities, child-centered design, energy efficiency, efficient investments, cost-benefit analysis
Annex 5. Criteria for learning spaces in a modern school

1. Functional criteria, defining teaching practice and specific uses of school spaces:

- **Openness.** Open spaces create a pleasant and comfortable atmosphere, encourage learning and active communication of children with teachers and among school children. At the same time, such spaces enable teachers to go beyond the format of classroom teaching. Quite standard places where school staff and students routinely meet may be transformed into key places for communication both among students of different ages and teachers: these include tearooms, refectories, common spaces, recreation areas. Visual connection between different spaces gives the impression of integrity of the building and all processes therein. Open use of various IT tools in any part of the building improves access to them for individual, group and classroom work, while encouraging students to work on their own and independently.

| Recreation areas on the roof above the classrooms, Ørestad upper secondary school, Copenhagen, Denmark | Common space as the school centre Ørestad upper secondary school, Copenhagen, Denmark |
| Open school refectory, High School, Booker T. Washington STEM Academy, Chicago, USA | Refectory as the heart of the school (a place for meetings and talking), Kunskapsskolan school, Sweden |
• **Flexibility.** Spaces should readily modifiable as required, depending on the structure and needs of an educational program, students’ and teachers’ needs and the fast pace of ICT development. Flexible, modifiable spaces also enable to reduce the costs of creation and use of the space. Such spaces may be rapidly transformed and combine various functions: those of traditional classrooms and rooms for lectures, spaces for group sessions and events, spaces for students’ studies on their own. Such environments may include modifiable spaces for laboratories, sports and creative activities.
2. Social criteria, defining the space arrangement, depending on needs of its users (students, teachers, parents, local communities):

- **Multifunctional spaces.** Such spaces are designated for various uses, depending on needs, arising from the learning process. They enable students, teachers and even local residents to use the spaces effectively when the building is not used for core educational activities.

![A transformable library and common space for meetings, Munkegaard School in Gentofte, Denmark](image1)

![A library in the Saunalahti school, which is may be used by residents of the municipality in the evenings, Saunalahti school, Espoo, Finland](image2)

- **Personal safety and public access.** Shared spaces in schools should assure safety and respect to the student’s or the teacher’s personal space. Such spaces should also enable people with disabilities to be active participants of the learning process.

![Individual storing boxes, Ørestad upper secondary school in Copenhagen, Denmark](image3)

![Toilets, Munkegaard School in Gentofte, Denmark](image4)

3. Infrastructural criteria, defining technological aspects of school space arrangement:
• **Efficiency.** Created spaces should be so designed as to enable to reduce energy consumption and maintenance costs. Currently, energy- and resource-saving technology and standards for buildings and structures are well developed in the OECD countries. Coordinated efforts are needed for their localization and/or harmonization with the Russian systems of technical regulation and management.

• **Crisis and disaster resilience.** Modern educational spaces should be resilient to natural calamities, technical accidents or malevolent crises, caused by human activities. In other words, in the case of any contingency/emergency, they should resume their functions within a reasonably short time and with minimum losses. This very ability of new Russian schools would help to follow up and promote – at a new technology level - the old tradition to use schools as shelters, assembly stations or command posts in emergency situations.