Nazarbayev
Intellectual
Schools

NIS

ANNUAL REPORT

NAZARBAYEV INTELLECTUAL SCHOOLS
Autonomous educational organisation

2017

PART 2

DISSEMINATION OF THE NIS EXPERIENCE

LIST OF ABBREVIATIONS

NIS	Nazarbayev Intellectual Schools Autonomous Educational Organization;
HEI	Higher educational institution;
SCES	State Compulsory Education Standard;
IAC	Information analytical centre;
LEA	Local executive authority;
MES	Ministry of Education and Science of the Republic of Kazakhstan;
MD	Ministry of Defense of the Republic of Kazakhstan;
MS	Multigraded school;
NAE	National Academy of Education named after Y.Altynsarin;
NDU	National Defense University of the Republic of Kazakhstan
NCPD	National Centre for Professional Development "Orleu";
NTC	National Testing Centre;
NDU	First President National Defense University;
ERC	Educational Resource Centre;
DE	Department of education;
AS	Academic staff;
RK	The Republic of Kazakhstan;
RPhMS	Republican Physics and Mathematics School;
MM	Mass media;
SCP	Standard course plan;
LEA	Local education authority;
DER	Digital educational resources;
CEP	Centre for Educational Programmes;
CPM	Centre of Pedagogical Measurement;
CoE	Centre of Excellence;
ZUS	Republican school "Zhas Ulan" named after S.Nurmagambetov;
BN	Broadband network;
Aktobe	Aktobe Region;
Aktau	Mangystau Region;
EKR	East Kazakhstan Region;
WKR	West Kazakhstan Region;
SKR	South Kazakhstan Region;

ORGANIZATIONS COVERED BY NIS WITHIN EXPERIENCE DISSEMINATION

1. Ministry of Education and Science
2. MES National Education Academy named after Altynsarin
3. National Centre for Professional Development "Orley"
4. MES National Testing Centre
5. MES "Dopolnitelnoe Obrazovanie" (Supplementary Education) National Learning and Methodology Centre
6. MES "Uchebnik" National Research and Practice Centre
7. MES "Doshkolnoe Detstvo" (Preschool Childhood) National Centre
8. MES Information Analysis Centre
9. Republican Physics and Mathematics Schools in Almaty and Astana
10. 19 universities (preparing teachers)
11. 25 regional colleges
12. First President National Defense University under the Ministry of Defense
13. 4 "Zhas Ulan" National Military Boarding Schools
14. Kazakh National Choreography Academy
15. 16 region education authorities
16. 201 district and city education authorities
17. Methodology offices across the country
18. 30 pilot schools
19. 35 basic schools
20. 46 innovative schools in Kyzylorda Region
21. Comprehensive schools in Astana
22. Comprehensive schools in Akmola Region
23. Comprehensive schools in Aktobe Region
24. Comprehensive schools in Mangystau Region
25. Comprehensive schools in West Kazakhstan Region
26. Comprehensive schools in South Kazakhstan Region
27. More than 7 thousand comprehensive schools

Disseminate the NIS experience to the national educational system by designating Nazarbayev Intellectual Schools to serve as regional methodology centres for curriculum reforms and teacher development…

Instruction of the President of Kazakhstan given at the 2017 Nazarbayev University graduation ceremony and corresponding meeting of the Supreme Board of Trustees of Nazarbayev Univesity, Nazarbayev Intellectual Schools, and Nazarbayev Foundation Autonomous Educational Organizations (27 May 2017, Astana)

The Country strives to achieve ambitious goals in social modernization through spiritual renovation. This is why all the new education standards are based on the national values system of Mangilik El.

The Head of State's policy essay 'The Course towards Future: Modernization of Public Conscience' (12 April 2017)

CONTENTS

INTRODUCTION

NIS disseminates its experience to the national education system by education content modernisation and advanced teacher development.

Thus, NIS disseminates experience, to introduce innovation and implement a new educational model. A process like that, large-scale and complex, leaves no school or educational organization unaffected. This is why it is not uncommon to use the 'experimental platform' or 'leading school' approach. For example, the countries that have leading schools include England, Singapore, and China. Such schools serve as a platform to promote innovation. In Kazakhstan, it is Nazarbayev Intellectual Schools that perform this function. In other words, NIS carries out a holistic, education system-level integration of education content and assessment with students' needs, learning methodology, and teacher development.

What makes Nazarbayev Intellectual Schools capable of solving complex problems is the broad scope of NIS analysis, embracing both a large body of national data and a wide variety of international ones; diverse activities; and, the ability to engage high-class specialists and effectively mobilize available resources.

On April 8, 2017, the President issues an instruction for Nazarbayev Intellectual Schools to carry out a system-level experience dissemination to the comprehensive schools of Kazakhstan under the 2027 Curriculum Reform Plan (MES order #358 dated 21.08.2014) and the NIS 2020 Experience Dissemination Plan (NIS Management Board decision dated 16.01.2014, minutes #2).

NIS performs experience dissemination in a complex manner, embracing several areas of strategic importance for the country:
I.   Education content modernisation.
II.   Teacher development.
III. Cooperation with national educational organizations.

The introduction of new content to the comprehensive school grades 1, 2, 5, and 7 started on September 1, 2017. Besides, NIS has 30 pilot schools testing the new primary standards in grade 3.

When a standard is introduced, one has to put a lot of effort into awareness-raising activities, local events, and country-wide cooperation with the stakeholders.

The Senate and Mazhilis of Kazakhstan were a great support in the introduction of the new MES SCES, providing feedback from the regions and raising educational issues at committee and government meetings.

The numerous meetings and opinion exchange were one of the factors to change the thinking of the majority of teachers and local community. People support the Education Content Modernisation, many newspapers, forums and blogs being a proof.

On May 27, 2017 was a meeting of the Supreme Board of Trustees of Nazarbayev University, Nazarbayev Intellectual Schools and Nazarbayev Foundation. At this meeting, the Head of State designated Nazarbayev Intellectual Schools regional methodology centres for curriculum reforms and teacher development. Thus, **NIS became a 16 region-wide network for curriculum reforms and teacher development** within the dissemination of NIS experience to the national education system.

Fulfilling the Head of State's instruction, NIS closely cooperates with local education authorities. This cooperation provides for dissemination of the NIS experience and increases the quality of national education.

As methodology centres for education modernization and teacher development, Nazarbayev Intellectual Schools will be building up the nation's intellectual capacity, raise and educate a functionally literate generation – a generation to possess universal skills, master several languages and be active patriots.

The NIS support of comprehensive schools mainly focuses on advanced teacher development, resulting in the teachers who master modern teaching and learning, able to analyze their practice, differentiate learning to suit learners' needs, and ready to work in a trilingual environment.

The new educational programmes are going to narrow the education quality gap between rural and urban schools, comprehensive and other schools, and ensure equal access to quality education all over the country.

Experience dissemination in 2017:
- September 1, 2017 a full-scale introduction of new content to the national education system for grades 2, 5, and 7.
- 20 NIS schools served as meeting platforms in the 16 regions of the country as part of the August Teacher Conference, with approximately 21 thousand teachers participating.
- Country-wide, NIS conducted 1767 master classes in 2 days, with 1019 sessions for grade 5 and 7 teachers conducted by NIS teachers and 748 trainings for grade 2 teachers conducted by pilot school teachers;
- Making the developed resources for grades 1, 2, 5, and 7 available to all Kazakhstani teachers;
- Performing an advanced training of Kazakhstani teachers;
- NIS began developing a database to contain scientifically proven information on the content of NIS-introduced curricula, concepts, methods, learning technologies, etc.

Thus, this Report presents information on the NIS experience dissemination and outlines Nazarbayev Intellectual Schools' goals in this area.

UNIT 1.
CONTENT OF EDUCATION

1.1. DEVELOPING THE CONTENT OF EDUCATION

Following the MES Education Content Modernisation Schedule, in 2016 NIS developed a number of primary and lower and upper secondary curricula for all subjects.

In 2017, NIS continued its endeavors in this area by:

◆ • developing primary, lower and upper secondary programmes (due to changes in the Contact Hours Schedules) and midterm plans;

◆ refining primary and secondary curricula (as a result of meetings between NIS and teacher community representatives and as sanctioned by the MES) and grade 2 midterm plans, to introduce changes requested by the 30 pilot schools).

A total of 112 workshops were conducted, with NAE experts, comprehensive schools and NIS teachers taking part.

The main result in this area in 2017 was the development and refining of **150 documents instead of the planned 88 ones.**
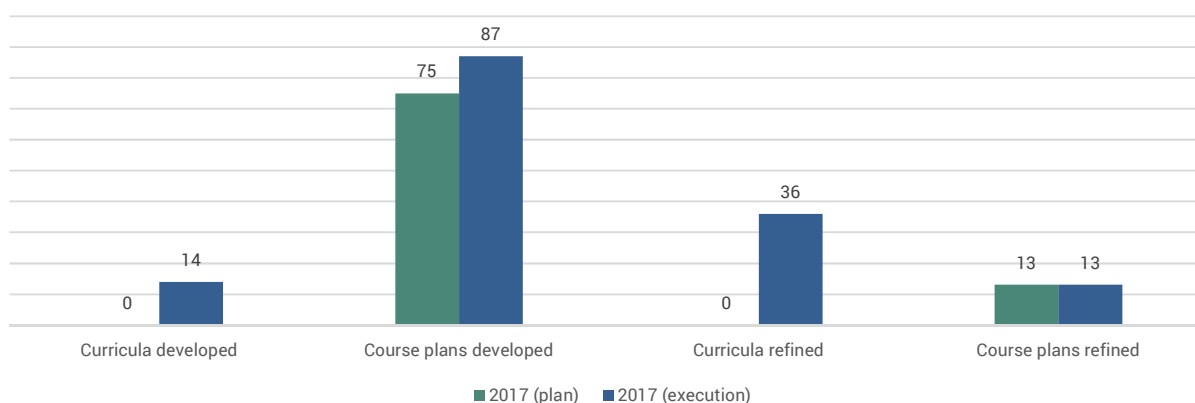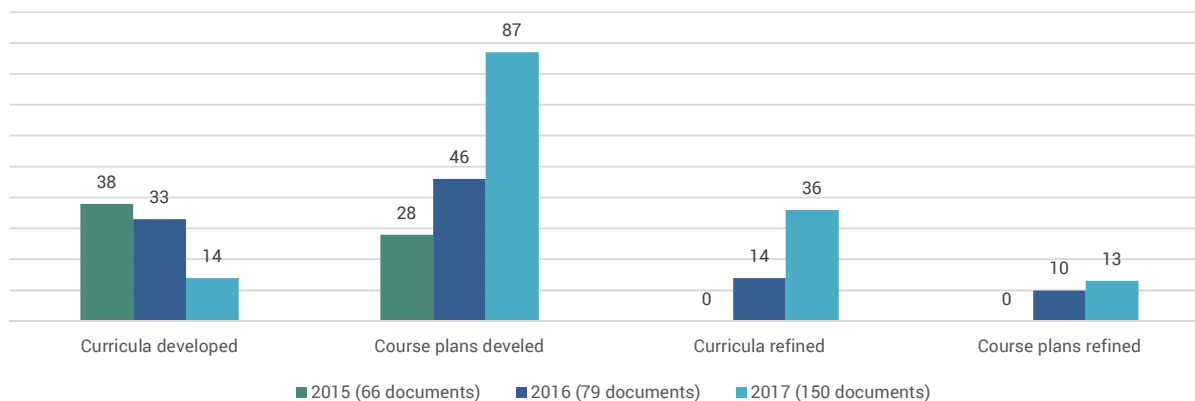
Charged by the MES, NIS collaborated with a number of university scholars and Baytursynov Linguistics Institute and Altynsarin National Academy of Education employees to develop a **Lexicogrammatical Kazakh Language Minimum** (hereinafter the LKLM) **for grades 1-11** based on frequency dictionaries.

The LKLM promotes the mastering of Kazakh by focusing on the most widespread words and enhancing the student's vocabulary in a step-by-step manner. The LKLM takes into account the lexical topics introduced under the Curriculum Reforms Initiative and reflects the vocabulary of modern Kazakh language.

The LKLM promotes the level-based learning of Kazakh in compliance with the age-specific features.

Besides, in 2016 NIS began to develop **Kazlingua, a mobile application** serving as a Kazakh language learning tool for non-Kazakh speakers. A total of **4 workshops** were held in the reporting period, resulting in **the grade 2 application content** based on the LKLM.

Development and refining of curricula and midterm plans in 2015-2017

	Curricula developed	Course plans develed	Curricula refined	Course plans refined
2015 (66 documents)	38	28	0	0
2016 (79 documents)	33	46	14	10
2017 (150 documents)	14	87	36	13

Plan and actual execution in 2017

	Curricula developed	Course plans developed	Curricula refined	Course plans refined
2017 (plan)	0	75	0	13
2017 (execution)	14	87	36	13

NIS renders support to comprehensive-school teachers under the Education Content Renewal. In particular, NIS developed the following grade 2, 5, and 7 methodology aids:
◆ Active learning methods to develop communicative skills;
◆ Grade 7 Chemistry Practice and Lab Work Guide;
◆ Grade 7 Physics Lab Work Recommendations;
◆ Graphic organizer usage in World History lessons;
◆ Active learning methods for primary Mathematics;
◆ Active learning methods for World Understanding;
◆ Scaffolding in CLIL;
◆ Grade 5 Music Anthology in Kazakh and Russian.

The methodology aids contain sample activities, learning resources, recommendations, and in-class learning organization techniques.

The key to the successful piloting and introduction of criteria-based assessment lies in the teacher receiving relevant assessment recommendations, quality assessment tools, and an electronic documentation and reporting system.

In 2017, NIS provided the pilot and comprehensive schools with the following assessment materials:
◆ **92** formative assessment activity anthologies for grades 1, 2, 5 and 7;
◆ **21** formative assessment activity anthologies for pilot school grade 3;
◆ **66** methodological recommendations in summative assessment for grades 1, 2, 5 and 7;
◆ **15** methodological recommendations in summative assessment for pilot school grade 3;
◆ **42** summative assessment recommendations for grades 5 and 7;
◆ a criteria-based assessment guide for primary and secondary teachers;
◆ **10** videos on criteria-based assessment, informational brochures, presentation materials, etc.

In 2018, NIS contributed to the introduction of a criteria-based assessment system by developing:
◆ **56** formative assessment activity anthologies;
◆ **42** methodological recommendations in summative assessment;
◆ **42** methodological recommendations in end-term summative assessment for grades 6 and 8.

1.2. PASTORAL WORK

The Head of State set a number of objectives for NIS to fulfil through pastoral work. Those lie in the implementation of the Mangilik El national idea and Rukhani Zhangyru spiritual development programme. Taking into account the current global changes, the NIS Pastoral Work System aims to cultivate patriotism towards Kazakhstan and civil responsibility, raise an independent, highly moral, devoted, and caring person that work to the benefit of the country and the whole world.

The NIS-developed educational standards reflect the seven Mangilik El values. Therefore, the NIS pastoral work is characterized by a focus on value-based learning.

NIS prepared projects for the comprehensive schools to implement. Those base on the projects of 'Motherland', 'Holy Places of Kazakhstan', 'Sacred Geography of Kazakhstan', 'Modern Kazakhstani Culture in the Modern World', '100 New Faces of Kazakhstan', etc. NIS is going to support the projects by training school teachers and leaders.

The NIS experience dissemination embraces the following areas:
◆ supporting family education;
◆ enhancing the educational capacity of informational resources;
◆ cultivating civil responsibility and patriotism towards Kazakhstan;
◆ introducing children to cultural heritage;
◆ physical development and health culture;
◆ labor education and career guidance;
◆ ecological education.

Under the 2016-2019 State Programme for Education and Science, in 2017 NIS conducted 630 events for the Shanyrak school community aiming to cultivate patriotism towards Kazakhstan in pilot and comprehensive schools. NIS embraced more than 3000 subject teachers, supervising teachers, deputy principals for pastoral work, and principals in the comprehensive schools all over the country.

> **!**
>
> *Background information: The Shanyrak community is intended to establish a positive cooperation between students of different ages and languages and encourage the older to take care of the younger. It promotes the idea of a united school community of students, teachers, and parents; the ability to think creatively; mutual respect and empathy; team work; and, sports and leisure events.*

In September, NIS Aktau took part in the implementation of the Head of State's policy essay 'The Course towards Future: Modernization of Public Conscience' by presenting a project, **'Nursultan Nazarbayev's Model: NIS Schools'**, at the Caspian Youth Forum, a meeting platform for young leaders from Azerbaijan, Russia, Turkmenistan, and Kazakhstan.

The most memorable event the Forum witnessed was visit of 300 Forum participants and 100 special guests to NIS Aktau. The Kazakhstani and foreign delegates received an insight into the operation of NIS, its curriculum, elective courses, social projects and practices, student research projects, and took part in the TEDx NIS conference.

A number of NIS students had a lot to show at the Robotics Stand. *Diyara Beyssembekova* from Almaty, a TechNovation Challenge gran-prix winner, presented the QamQare mobile application with a GPS receiver for the transmission of SOS-messages with the exact geographical position indicated. *Daniyar Turgambayev* from Almaty, the First Global Challenge Robot; *Galammadin Askaruly* from Aktau, the SMART Taqiyah for the Blind; *Assan Bekkaliyev* from Uralsk, a Robotised Mobile Water-power Plant; *Adil Ordayev* from Semey, the Robot Dance project; and, *Aynur Adaybayeva* from Atyrau, the Anti-desertisation Robot.

This was accompanied by the Artisan Street and a student arts and crafts exhibition (pottery, felt-making, carpet-making, etc.).

> The Deputy Minister of Youth and Sports of Azerbaijan has praised NIS as an educational project unique for the post-Soviet countries, and noted the potential and relevance of NIS students' creative works.

To spread the Rukhani Zhangyru national idea and the innovative NIS experience in social practices and projects, Nazarbayev Intellectual Schools conducted **246 events** in collaboration with parents to **cover 11,476 comprehensive-school leaders and teachers.**

ELECTIVE COURSES

In March 2017, NIS Shymkent PhM hosted the **VII Nauryz Meetings** themed 'Science Unlimited' for 80 comprehensive-school students from the South Kazakhstan Region.

During two days there were lectures by leading scholars from Hungary, South Korea, and Nazarbayev University.

The NIS Shymkent PhM students organized a scientific and creative exhibitions, with the works receiving praise from the guests. Another activity was the visit to local companies: Shymkent Agriculture College, EcoFarm International LLC, and the National Information Technology JSC branch KazAgroGreen.

Since 2014, NIS has been functioning as a national Robotics Olympiad organizer for Kazakhtan as part of the World Robot Olympiad.

In April 2017, NIS hosted the regional robotics Olympiad stage of WRO-2017, with **1210 students** aged 8 to 19 participating. 83 out of the 884 comprehensive-school students were prizewinners and received access to the national stage of the Olympiad. As a result, 300 students (150 teams) received access to the national stage.

July 2017 witnessed the national stage of the Robotics contest hosted by the EXPO 2017 Congress Centre.

> **At the WRO-2017** Olympiad, the Kazakhstani team successfully made it to the top twenty.

Under the dissemination of Robotics experience, NIS teachers held trainings in the regions. For instance, the 'Running the NAO Robot' training for the employees of the Mussin Kazakh Teacher College in Kokshetau and a travelling workshop for grade 11 ICT teachers in Zyryanovsk District, Ust-Kamenogorsk.

To develop the academic capacity and research and project skills of students, NIS **organized Summer School**, a set of courses for NIS and **comprehensive**-school students:

1. free course for 7554 students from socially vulnerable families: 6821 NIS students and 733 comprehensive-school ones;
2. free course for 433 students: 213 NIS students and 220 comprehensive-school ones;
3. mixed, free and fee-based, course for 341 students: 332 NIS ones and 9 comprehensive-school ones, led by 6 professors from Stanford University and The Johns Hopkins Center For Talented Youth embracing the programmes of:
   ◆ Creative Writing;
   ◆ Program Engineering and Videogame Design;
   ◆ Environmental Science;

◆ Entrepreneurship;
◆ Cryptology;
◆ English Language Communication in STEM.

In June 2017, NIS provided social support to rural students and students from needy families and encouraged them to take part in scientific and creative projects. This was done by having 100 Olympiad winners attend the **EXPO 2017 Young Ambassadors summer school**, sponsored from the funds NIS students had raised at charity fairs under the Doors Open Day event and by Khalyk Charitable Fund private entity.

The Summer School participants attended a number of clubs: aeromodelling, sewing, potting, TV studio, and robotics. They also visited EXPO 2017, where 115 states and 22 international organizations had their showrooms, the 'Astana Opera' State Opera and Ballet Theatre, Saken Seyfullin Museum, Astana Bayterek, Republic of Kazakhstan National Museum, Kazakh Eli Monument, Palace of Independence, Palace of Peace and Reconciliation, Khazret Sultan Cathedral Mosque, Kazakh National University of Arts, etc.

In June 2017, NIS Almaty ChB collaborated with the Kazakhstani Chess Federation to host **the Second 'Chess Planet' Summer School**, an event for 50 chess-playing students from rural schools and socially vulnerable strata, aiming to promote chess and logical problems, cultivate strong will, and have students develop basic strategy and tactics skills in chess.

The course resulted in the teams developing the following projects:

Project
Easy knowledge A website offering a grade 1-11 curriculum. It is a convenient means for home schooling of handicapped children. The literature made available online is a handy and effective learning tool.
EcoTime A scheduling application with the option of blocking social media for a set period of time.

The student selection was carried out by the local education departments.

The participants attended lectures and practical workshops: Analyzing Training Positions (Tactics); Analyzing Plays by Outstanding Chess-players; Double Strike, Pin, Discovered Attack; Solving Tactics Problems; Pawn End-game: Analysis; End-game Solutions for Third Class Sportspersons by Konotop; Opening Rules; Memory Development and Blind Play; Simultaneous Play; and, the Evolution of Chess from Morphy to Nowadays.

In the period from October to December 2017, NIS Astana PhM collaborated with the Tel Aviv University to carry out an elective course for **20 NIS and 10 comprehensive-school students**, Teaching Students Entrepreneurship, under the Momentum programme.

The Course consisted of two parts, theory and practice, ensuring:
◆ an immersion into entrepreneurship, supported by national and international experts;
◆ mastering of the basics of effective planning and the implementation and evaluation of one's own projects;
◆ a practical experience in leading one's own business project.

Participant
Toktybay Maslikhat – the team trainer, NIS PhM teacher
Mukhitdinova Aziza, comprehensive school #56
Begassilova Aygerim, comprehensive school #56
Tussupbekova Tomiris, comprehensive school #56
Kalash Adelya, comprehensive school #56
Bodenova Madina, comprehensive school #56
Smagulova Indira – the team trainer, Knowledge Innovation Lyceum
Demissenov Aldiyar, Knowledge Innovation Lyceum
Tokan Gulayim, comprehensive school #56
Kydyrbay Aman, comprehensive school #56
Imangazin Alimzhan, comprehensive school #56
Kuanyshbay Ibragim, comprehensive school #56

1.3. EDUCATIONAL RESOURCES

TEXTBOOKS
Developing textbooks under the SCES

With comprehensive schools undergoing curriculum reforms in the wake of Nazarbayev Intellectual Schools, NIS develops State Compulsory Education Standard-complying textbooks.

The content of NIS-developed textbooks complies with the latest research in education and best teaching methods and techniques and aims at developing functional literacy in students.

Following the current requirements in force in the global educational literature market, NIS-developed textbooks stand out from the competitors with its practice-oriented activities, brand new content and design, and highly informative quality theoretical material.

The Teacher's Guide is a methodology guide on lesson planning and execution. Teachers are advised to create such educational environment as to motivate students to learn to learn and take responsibility for their learning. To cultivate, nurture, and develop these qualities, teachers need to use interactive and active teaching methods and techniques.

Hence, the textbooks developed in accordance with the new primary and secondary standards streamline learning; enable students to receive a wealth of subject knowledge, develop research skills, and learn empirically; and cultivate the ability to think creatively and critically.

NIS-developed textbooks ensure achievement of curriculum objectives in every single lesson.

Textbooks for comprehensive schools

Grade	Begun	Finished	Number of subjects	Number of textbooks	Textbooks to enter the Textbook List
Grade 1	2015	2016	8	12	6
Grade 2	2016	2017	11	16	1
Grade 3	2016	2018	12	18	-
Grade 4	2017	2019	3	6	-
Grade 5	2016	2017	11	16	6
Grade 7	2016	2017	17	28	4
		TOTAL	**62**	**96**	**17**

In 2017, NIS developed grade 2, 5, and 7 textbooks to submit to the MES Uchebnik Centre for review.

Of which **11 textbooks:**

◆ (grade 2) **World Understanding** was adopted as the basic textbook;
◆ (grade 5) **Russian Language (L1)** and **Science** in Russian and **World History** and **History of Kazakhstan** in Kazakh and Russian;
◆ (grade 7) **Arts and Crafts (for girls) and Arts and Crafts (for boys)** in Kazakh and Russian made it to the MES-recommended Textbook List.

NIS textbooks development projects resulted in the development of an expert pool to embrace **249 authors, 80 editors, 37 scientific consultants, 24 designers and desktop publishers**. Besides, NIS created **1750 textbook illustrations** and entered into **49 contracts** to receive rights to **408 illustrations.**

The **grade 1, 2, 5, and 7** textbooks that did not make it to the MES-recommended Textbook List are being refined based on the Uchebnik centre review and feedback from NIS teachers. Later, these will be used as alternative and/or supplementary resources to support the country's teacher community.

Piloting grade 3 textbooks in 30 comprehensive schools

In July 2017, a total of 18 NIS textbooks were submitted to the Uchebnik centre (6 language subject textbooks and 12 textbooks in Russian and Kazakh, 96 items all in all), covering **Mathematics, World Understanding, Science, Arts and Crafts, Music, ICT, Kazakh Language, Russian Language, Russian Literature, and Kazakh Literature.** The piloting was launched in September 2017.

All 18 textbooks have passed the review and are being piloted. Charged by the MES Preschool and Secondary Education Department, NIS started a stage-by-stage rollout and delivery of the grade 3 textbooks to 30 pilot schools. The delivery was a success, with the quantity and time period requirements duly fulfilled.

DIGITAL EDUCATIONAL RESOURCES

To support teaching and learning under the Education Content Renewal, NIS has launched two online platforms, the Educational Resource Portal (www.smk.edu.kz) and NIS Play (www.play.nis.edu.kz).

The aim is to provide methodological support and ensure professional development of the educators involved in the implementation of the Curriculum Reforms.

NIS Play is an online platform to provide all Kazakhstani teachers with NIS-developed digital educational resources enabling them to effectively use modern digital teaching methodology and technology

A *Digital Educational Resource* (hereinafter DER) is an informational resource, a set of static and dynamic models, containing graphic, digital, three-dimensional, verbal, musical, video, photo, and other educational information.

DERs allow teachers to raise the quality of content, methods, and forms of learning. This results in better teaching tools and higher quality learning.

To support the learning process, the DERs are developed in Kazakh, Russian and English, covering both primary and secondary school subjects: Science, World understanding, Kazakh Language, Russian Language, English Language, Mathematics, Computer Science, History of Kazakhstan, World History, Biology, Chemistry, ICT, Geography, Physics.
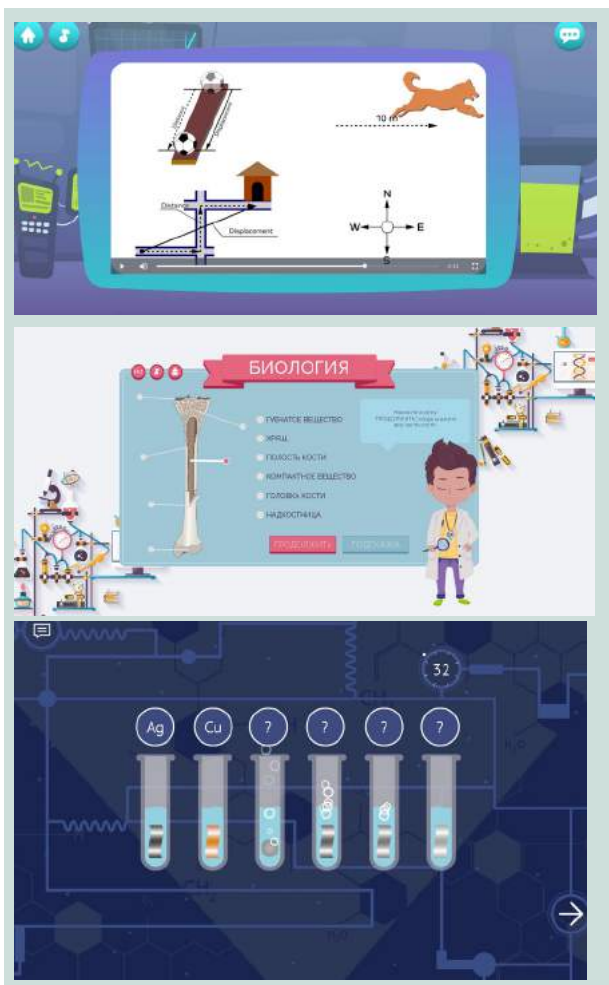
All the resources developed are freely available at www.play.nis.edu.kz.

EDUCATIONAL RESOURCE PORTAL (ERP)
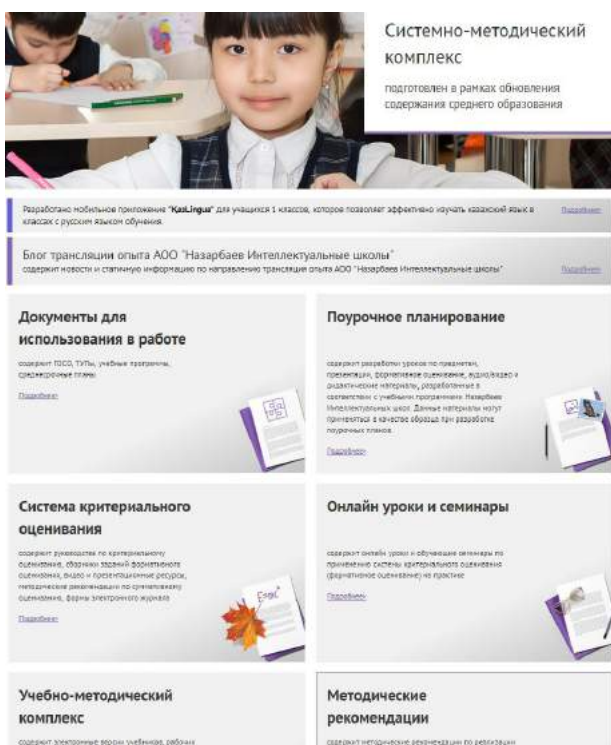
The Educational Resource Portal (hereinafter ERP) (www.smk.edu.kz) is an informational complex. This intellectual product was developed in 2015 to render support to the 30 pilot schools.

The ERP is one of the effective tools used to provide teachers with methodological support in renewing the content of education. It has been available for all Kazakhstani teachers since August 18, 2016.

The portal has more than **168,000** registered users, with **12,975,943** file downloads and **3,813,053** page views.

The ERP is divided into thematic sections, each containing a separate set of informative and communicative services including:

◆ **general guidance documents:** the State Compulsory Education Standard, standard course plans, subject programmes and medium-term plan, event-based lesson plans;

◆ **lesson plans** for 12 primary subjects, 20 lower secondary subjects and 27 upper secondary subjects (developed according to themes/subunits of the subject programme and include presentations, audio/video and didactic materials);

◆ **criteria-based assessment** materials: teacher guides, formative assessment activity books, summative assessment guidelines, video materials, and presentations;

◆ **textbooks**: electronic versions of textbooks, workbooks and teacher guides and teaching aids for speech development;

◆ **video clips** explaining new units and themes;

◆ **online courses and workshops:** online courses and workshops in the form of videos on learning methodology and technology.

The portal contains more than **29,000 materials**, which include:

◆ more than **27,000 files** to support the curricula for grades 1, 2, 5, and 7;

◆ **123 video materials** explaining new learning objectives, themes and units;

◆ **289 materials** on criteria-based assessment system.
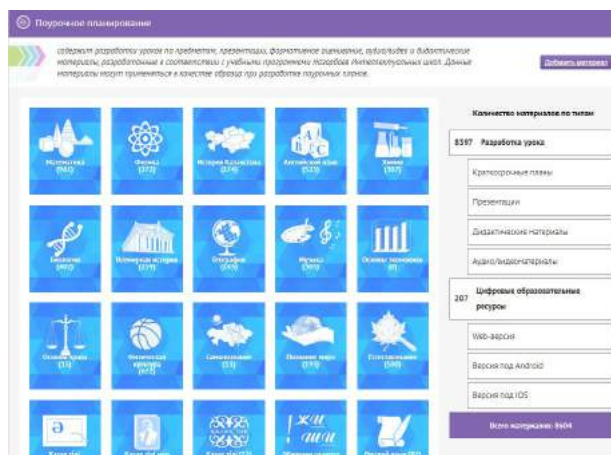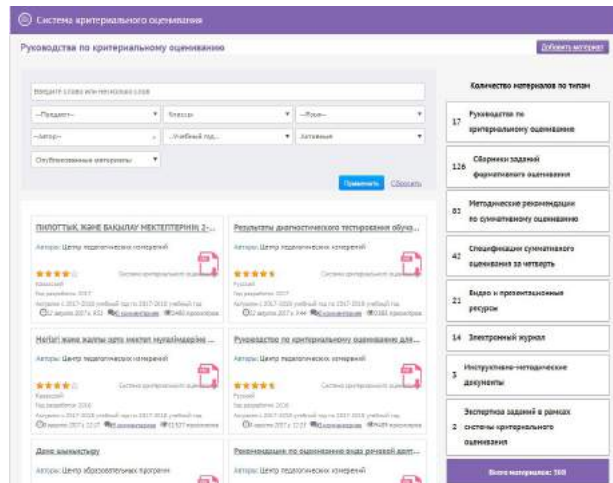
To provide teacher with methodological support, the ERP was enhanced with a special new tab, **'Guidelines'**, offering materials on the **subtle aspects of using the communication approach**, teaching grammar through lexical themes, developing four types of skills, etc.

In 2017-2018, NIS teachers started to develop and upload materials for grades 6, 8 and 10, in order to provide methodological support to comprehensive-school teachers in the 2018-2019 academic year.

ERP users have the ability to assess, comment, and give feedback on the materials provided, with the gathered information considered by the developers when creating new materials. This also allows for monitoring the interests of teachers, defining the most demanded kind of materials and methodological support.

The ERP forum has a special Q&A section for teachers to ask questions online and receive answers from qualified NIS specialists. This section is an effective tool used to monitor the implementation of the Curriculum Reforms, share experience, and receive feedback on the related issues. The portal received almost **4000 questions** on a variety of topics: assessment, learning methods and techniques, subject programmes, etc.

Analysis of the questions has shown that teachers mostly need methodological support in implementing the criteria-based assessment system and filling in the school registers.

ERC employees have conducted training workshops in the regions, presenting the main components of the **ERP** and **NIS Play** to comprehensive-schools teachers:

◆ introducing the features;
◆ searching for and downloading the necessary resource;
◆ creating and managing a personal account;
◆ uploading materials, commenting/giving feedback;
◆ filling in the feedback form, etc.

ERC specialists provided training to educators all over the country, explaining the main components and functions of the system and providing technical recommendations on the use of resources. These actions supported the launch of ERP, with more than 7 thousand comprehensive-school teachers trained in 2016−2017 and more than 9 thousand in 2017−2018.

The meetings with the teacher community and analysis of frequently asked questions at the ERP discussion platform have shown that teachers struggle to teach new themes and achieve the relevant learning objectives. To support them, NIS has developed video materials explaining the approaches and techniques to be used to achieve and assess the learning objectives.

Having made a total of **123 videos** on all grade 2, 5 and 7 subjects, NIS is currently working on videos explaining the new grade 3, 6, 8, and 10 themes and learning objectives.

The ERP is continuously developing to meet the needs of the teacher community under the Curriculum Reforms.

Summarizing the above, the main tasks of the ERP system are:

◆ to provide methodological support and ensure creative and professional development of teachers in the context of NIS educational practice;
◆ to create conditions for cooperation and experience exchange;
◆ to create a unified educational and informational platform to consult pilot school teachers;
◆ to establish network cooperation between educators;
◆ to disseminate innovative curricula, learning resources, and teaching techniques;
◆ to provide opportunities for effective online teacher cooperation and experience exchange;
◆ to ensure the development and effective application of ICT skills among teachers and learners.

In addition, ERP users have access to Centre of Excellence materials via its educational portal www.cpm.kz. The portal develops and shapes the country's teacher community by enabling teachers to network, share experience, get consulting and methodological aid from trainers, provide post-course support to their colleagues upon completion of professional development courses, share ideas on the forum and in blogs, and receive access to the Lesson Bank, covering a variety of subjects, and webinars.

LIBRARIES

NIS Libraries explore and introduce new methods and forms of work and the innovative experience gained at workshops held by international library science experts, to disseminate this experience to comprehensive schools of the Republic of Kazakhstan.

NIS libraries have conducted a total of 121 training workshops for 4972 participants: librarians, teachers, and school leaders.

NIS librarians possess a knowledge of the modern methods and approaches to school library management and international experience and best practice in working with students of different ages (Finland, USA, Russia, South Korea, Singapore, as well as the international experience gained at IFLA and IASL conferences). Not only do they employ modern theory but also scrutinize their practice in reading promotion and functional reading literacy development in terms of PISA.

The experience dissemination resulted in comprehensive-school librarians introducing:

◆ gaming reading-development techniques (Find That Book, Name That Book, BookBingo, Shaded poetry, BookDingo);
◆ innovative projects (100 Books, Bookcrossing, 123) and reading clubs;
◆ gaming reading-promotion techniques (Name That Book, Comparative Analysis, Shaded Poetry, Book Conquers the World, Keyword Hexagon);
◆ Team-teaching of integrated lessons and adviser hours.

PUBLICATIONS
Pedagogical Dialogue

Centre of Excellence disseminates its experience through a variety of means. Its collaboration with Cambridge Faculty of Education resulted in Pedagogical Dialogue, a teaching methodology journal published in Kazakh, Russian and English. The journal is registered with the Ministry of Culture and Information of the Republic of Kazakhstan (Certification No.12804-ZH) and ISSN International Centre (UNESCO, Paris, France) (ISSN 2308 – 7668).

2017 witnessed four issues of the journal, addressing relevant learning and teaching issues in the context of the Curriculum Reforms.

Issue No.1 (19), **Criteria-based Assessment under Curriculum Reforms**, presents the ins and outs of student assessment in the context of curriculum reforms and describes criteria-based assessment as practiced by pilot and comprehensive schools.
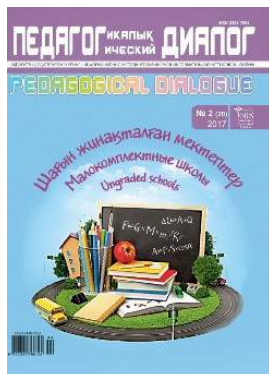
Issue No.2 (20) **Teaching in a Multi-graded School**, portrays the practice and methodology of teaching in multi-graded schools, with the low student population, joined grades, and non-standard learning.

Issue No.3 (21), **IX NIS International Research-to-Practice Conference 'Values, Wellbeing and Innovation for the Future Education'**, is centered around the experience of national and international education experts and the best Kazakhstani teaching practices.
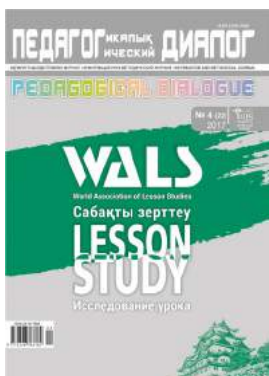
Issue No.4 (22) **Theory and Practice of the Lesson Study Technique in Kazakhstani Schools**, contains materials reflecting international experience, a review of the WALS international conference written by participants from Kazakhstan, and the practical results of Lesson Study.

A total of 22 issues were published in the period 2012 to 2017 (**44,000** copies).

Published copies of Pedagogical Dialogue
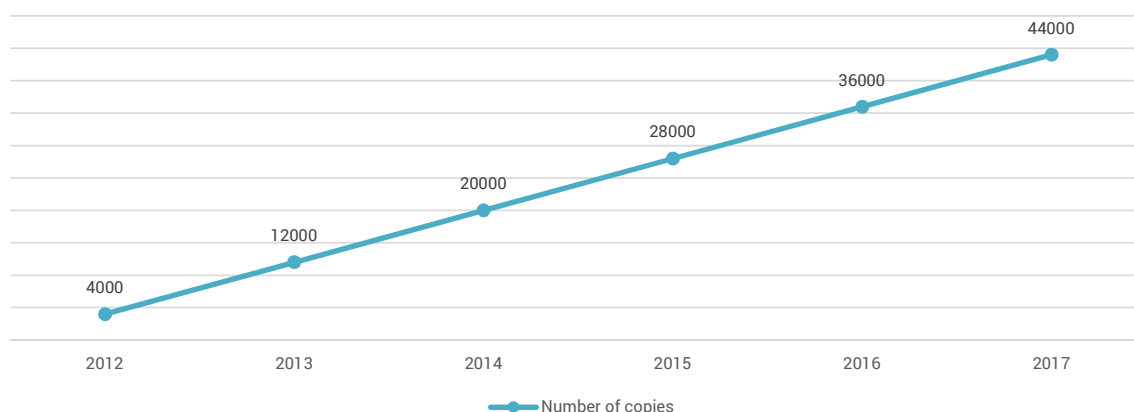
Over its lifetime, the Journal published works by representatives of many educational community: Australia, Azerbaijan, Armenia, United Kingdom, Israel, Indonesia, Spain, Canada, Kyrgyzstan, Malaysia, Netherlands, New Zealand, Portugal, Russia, USA, Finland, Republic of South Africa, Jamaica, and Japan. In the period 2012 to 2017, the Journal has had 308 authors including 103 foreign scholars, international experts, and consultants.

The Journal presents the best practice of teachers, NIS employees, NIS and comprehensive-school principals, as well as recommendations derived from national and international research in the area of teaching.

Authors whose articles were published in the Journal in the period of 2012-2017

Category of author	2012	2013	2014	2015	2016	2017	Total	
							Number	%
Foreign experts	13	18	20	20	15	20	**106**	**34,5**
NIS teachers	6	7	12	18	12	15	**70**	**22,7**
Comprehensive-school teachers	2	-	8	2	5	5	**22**	**7,1**
NIS AEO employees	2	11	2	1	7	10	**33**	**10,7**
CoE employees	-	8	7	12	13	14	**54**	**17,5**
University employees (Kazakhstan)	4	1	-	4	-	-	**9**	**3,0**
Educational organisation employees (Kazakhstan)	2	1	-	2	5	4	**14**	**4,5**
TOTAL:	**29**	**46**	**49**	**59**	**57**	**68**	**308**	**100**

Total number of authors: 308

Total number of articles: 245

Methodological literature

Since 2012, CoE has been developing and publishing methodical, informational, and analytical literature, continuously supporting teachers and school leaders.

A total of **70 books** were published in 2017.

Printed products by area in 2017

№	Area	Number of books
Methodical literature		
1	Methodical guidelines:	61
	teacher aids	38
	collections (practical activities and lesson plans)	10
	curriculum reforms-specific literature	13
Informational and analytical literature		
2	monitoring studies	5
3	essay collections	4
	TOTAL:	70

CoE has developed:

◆ **33 methodical publications** on the Curriculum Reforms including 16 collections reflecting the best teacher practice in 30 pilot schools. These grade 1 and 2 collections contain short-term lesson plans and methodology advice for Kazakh Language, Russian Language, English Language, Mathematics, Science, Literacy Learning, World Understanding, Literature, Arts and Crafts, Physical Education, Music, Self-cognition.

◆ **5 methodical guidelines** on the new approaches to teaching and learning, criteria-based assessment, and lesson planning.

In the period of 2012 to 2017, the CoE Methodical Library has grown as to comprise **274 methodological resources.**

Publications of the CoE Methodical Library in the period of 2012-2017

№	Areas	2012	2013	2014	2015	2016	2017	Total
	Methodical guidelines							
1	International experience	-	2	9	5	-	-	16
2	Teacher aids	2	4	24	35	34	38	137
3	Leader aids	-	-	-	2	6	-	8
4	Universities providing teacher education	-	-	-	4	-	-	4
5	Collections (practical activities and lesson plans)	-	-	5	2	-	10	17
6	Curriculum reforms					20	13	33
	Analytical literature							
7	Monitoring studies	4	7	8	9	6	5	39
8	Essay collections	2	1	5	4	4	4	20
Total:		**8**	**14**	**51**	**61**	**70**	**70**	**274**

UNIT 2.
TEACHER DEVELOPMENT AND IN-SERVICE TRAINING

2.1. PRODUCING TEACHER DEVELOPMENT PROGRAMMES

In 2017, Center of Excellence (hereinafter CoE) produced 6 teacher development programmes to support the Curriculum Reforms:
1. Action Research In-school Professional Development Course (approved by the NIS Management Board decision dated April 13, 2017, minutes No.16) (for trainers and teachers).
2. Professional Development Course for Deputy Directors of NIS branches (approved by the NIS Management Board decision dated August 17, 2017, minutes No. 42).
3. Professional Development Course for Arts and Crafts Teachers (approved by the NIS Management Board decision dated October 25, 2017, minutes No. 55) (for trainers and teachers).
4. Professional Development Course for Principals of Multi-graded Schools (approved by the NIS Management Board decision dated October 25, 2017, minutes No. 55).

Besides, CoE updated a total of 34 professional development programmes for lower and upper secondary teachers and trainers (17 in the Kazakh language and 17 in the Russian language; see the Appendix).

2.2. PREPARING TRAINERS UNDER THE RENEWED CONTENT OF EDUCATION REFORMS

In 2017, CoE ran 9 teacher development programmes to prepare 450 trainers under the Curriculum Reforms: 177 for Orleu, 140 for general education organizations, and 133 for CoE.

Trainers prepared in 2017

№	Programme	Trainers prepared(people)	including those from		
			Orleu	General educational organisations	CoE
1	Professional development course in the History of Kazakhstan and Basics of Law, under the Curriculum Reforms	26	12	11	3
2	Professional development course in World History and Basics of Law, under the Curriculum Reforms	44	21	16	7
3	Professional development course in Arts and Crafts, under the Curriculum Reforms	64	21	43	-
4	Professional development course in Graphics and Design, under the Curriculum Reforms	79	43	35	1
5	Professional development course for deputy principals for pastoral work, under the Curriculum Reforms	50	-	35	15
6	Action Research in-school professional development course	101	-	-	101
7	Professional development course in Russian Language, under the Curriculum Reforms	24	21	-	3
8	Professional development course in Kazakh Language, under the Curriculum Reforms	41	39	-	2
9	Professional development course in Russian Language, under the Curriculum Reforms	21	20	-	1
	TOTAL:	**450**	**177**	**140**	**133**

The trainers were taught to pass their knowledge to primary and secondary teachers and principals under the Curriculum Reforms.

They were selected from the leading staff of CoE, NIS AEO, NAE, Orleu, and the first and highest category teachers who completed the second (main) and first (advanced) development programme levels.

In 2015-2017, CoE prepared 2149 trainers (768 in 2015, 931 in 2016, and 450 in 2017) under the Curriculum Reforms.

Trainers prepared in 2015-2017

Educational organization	Trainers prapared			
	Total	2015	2016	2017
CoE and its branches	522	185	204	133
Nazarbayev Intellectual Schools	119	49	70	-
NAE	19	19	-	-
Orleu and its branches	789	262	350	177
Other educational organizations (*including general education organizations*)	700	253	307	140
TOTAL:	2149	768	931	450

Preparing trainers from the staff of universities and colleges that provide teacher education

CoE started preparing trainers from university and college staff in 2015, to embrace two components:
◆ primary teacher development under the Curriculum Reforms;
◆ level-based/updated teacher development programmes.

2017 resulted in 305 university and college staff members trained.

In the period of 2015-2017, CoE prepared 1137 trainers: 737 university employees and 400 college employees.

University and college staff members prepared in 2017

№	Programme	Number of people
1	Primary teacher development under the Curriculum Reforms	104
2	Level-based/updated teacher development programmes	201
	TOTAL:	305

University and college staff members prepared

■ 2017 ■ 2016 ■ 2015
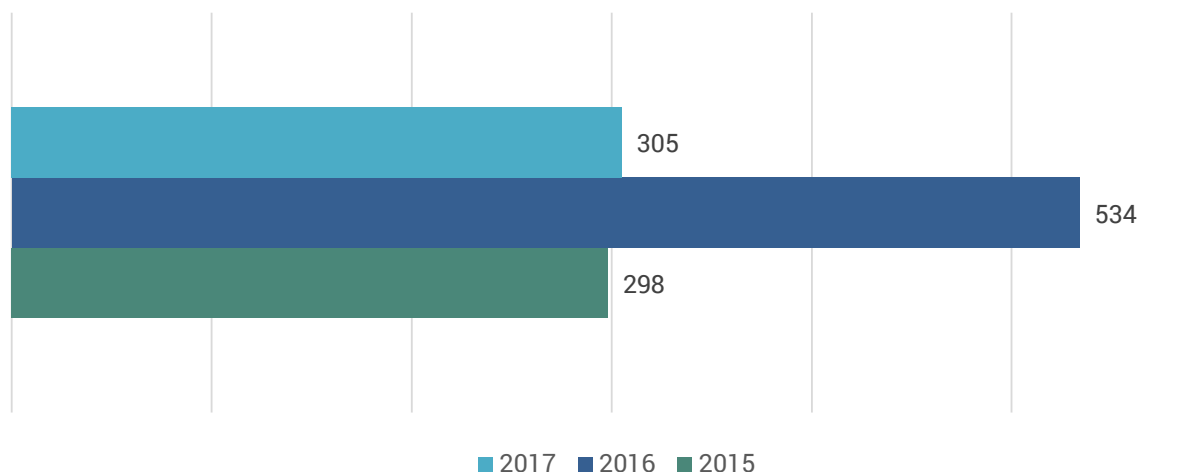
2.3. TEACHER DEVELOPMENT

School leader development under the Curriculum Reforms

Under the Curriculum Reforms, CoE and its branches have trained 29,276 teachers:

- **18,023 subject teachers: 4342** primary school teachers, **1254** Kazakh language teachers, **2002** English language teachers, **1550** Mathematics teachers, **1350** ICT teachers, **1425** Chemistry teachers, **1400** Biology teachers, **1525** Physics teachers, **1425** Geography teachers, **1083** teachers of the History of Kazakhstan, **417** World History teachers, and **250** Physical Education teachers;
- **10,709 educators: 3564 principals, 3564 deputy principals** for academic work, and **3581 deputy principals** for pastoral work;

- **544 methodologists and experts** of local, regional, and Almaty and Astana education authorities and methodology offices.

In 2015-2017, CoE and Orleu trained 159,145 teachers, which is 57.9% of the total number of teachers (274,757). Of these, 107,874 subject teachers were recommended for certification.

Educators trained under the Curriculum Reforms

#	Teachers	2017								
		TOTAL			CoE			Orleu		
		trained	certified	%	trained	certified	%	trained	certified	%
1	Primary subjects	18385	18349	99,80	4342	4333	99,79	14043	14016	99,81
2	Kazakh Language	8841	8824	99,81	1254	1253	99,92	7587	7571	99,79
3	Russian Language	5580	5551	99,48	5580	5551	99,48	5580	5551	99,48
4	English Language	4771	4745	99,46	2002	1996	99,70	2769	2749	99,28
5	Mathematics	6376	6365	99,83	1550	1545	99,68	4826	4820	99,88
6	ICT	2959	2948	99,63	1350	1347	99,78	1609	1601	99,50
7	Physics	2860	2854	99,79	1525	1521	99,74	1335	1333	99,85
8	Chemistry	2355	2346	99,62	1425	1420	99,65	930	926	99,57
9	Biology	2994	2986	99,73	1400	1395	99,64	1594	1591	99,81
10	Geography	2955	2953	99,93	1425	1423	99,86	1530	1530	100,00
11	History of Kazakhstan	3426	3417	99,74	1083	1081	99,82	2343	2336	99,70
12	World History	1962	1956	99,69	417	417	100,00	1545	1539	99,61
13	Physical Education	7200	7115	98,82	250	220	88,00	6950	6895	99,21
14	Music	91						91	90	98,90
15	Art	261						261	247	94,64
	Total	71016	70409	99,15	18023	17951	99,60	52993	52795	99,63
courses without testing										
16	principals	3564			3564					
17	deputy principals for academic work	3564			3564					
18	deputy principals for pastoral work	3581			3581					
19	methodologists	544			544					
	Total	11253			11253					
	TOTAL:	82269	70409		29276	17951		52993	52795	

Educators trained under the Curriculum Reforms in 2015-2017

Years	Total number of educators trained (*people*)	Share of the total number of educators (%)	Number of educators trained	
			CoE	Orleu
2015	2 727	0,9	2 727	-
2016	74 149	27,0	30 135	44 014
2017	82 269	28,6	29 276	52 993
TOTAL:	159 145	57,9	62 168	97 007

MES letter No. 13459/11-4/22 dated January 9, 2017 required that CoE should provide additional training for **30 teachers of the Republican Physics and Mathematics School** and Republican Higher School, with the training based the Development Programme for Regional and School Criteria-based Assessment Coordinators under the Curriculum Reforms. The demographics of the teachers trained are as follows: 4 RPhMS Almaty teachers; 3 RPhMS Astana teachers; 11 RHS Astana teachers; 4 RHS Almaty teachers; 4 RHS Karaganda teachers; and, 4 RHS Shymkent teachers.

'Reflection in Practice' comprehensive-school teacher development programme
Following MES order No. 11-4/633-vn dated April 3, 2017, CoE and its branches trained **8737 school trainers** in 2017 based on the Reflection in Practice programme.
In 2016-2017, CoE and its branches prepared **17,517 school trainers** for comprehensive schools, RPhMS, and RHS.

School trainers prepared in 2016-2017

№	Region	Total number of teachers in the region	Share of trained teachers (%)	People trained		
				total	2016	2017
1	Akmola	13485	11,15	1504	752	752
2	Aktobe	13973	7,17	1002	501	501
3	Almaty	32998	6,12	2018	1009	1009
4	Atyrau	9237	5,20	480	240	240
5	East Kazakhstan	19546	8,27	1616	808	808
6	Zhambyl	20692	5,37	1112	556	556
7	West Kazakhstan	11605	7,10	824	412	412
8	Karaganda	17394	7,68	1336	668	668
9	Kostanay	11757	9,83	1156	578	578
10	Kyzylorda	16946	3,68	624	312	312
11	Mangistau	8967	3,30	296	148	148
12	Pavlodar	11507	9,23	1062	531	531
13	North Kazakhstan	10247	11,38	1166	583	583
14	South Kazakhstan	55630	4,50	2504	1252	1252
15	Almaty	6706	8,02	538	269	269
16	Astana	14067	1,68	236	118	118
17	RPhMS	225	3,0	7		7
18	RMS	213	16,9	36		36
	TOTAL:	274757	6,38	17 517	8737	8780

'Efficient Learning' and 'Teacher Leadership in School' programmes

MES letter No. 11-4/2488-vn dated December 30, 2016 required that CoE should carry out the courses of 'Efficient learning', 'Teacher Leadership in School', and 'Leadership in the Teacher Community' (hereinafter the 'Training Courses) for teachers of comprehensive schools, RPhMS Astana, and NIS.

In 2017, a total of **5615 teachers** were trained under the Training Courses: 1312 in 'Efficient Learning', 1363 in 'Teacher Leadership in School', and 2940 in 'Leadership in the Teacher Community'.

The participant demographics was as follows:
◆ 5092 comprehensive-school teachers (1005 in 'Efficient learning', 1197 in 'Teacher Leadership in School', and 2890 in 'Leadership in the Teacher Community');
◆ 29 RPhMS Astana teachers;
◆ 494 NIS teachers (278 in 'Efficient Learning', 166 in 'Teacher Leadership in School', and 50 in 'Leadership in the Teacher Community').

In 2012-2017, the CoE Training Courses covered a total of 28,198 teachers.

In 2013-2017, a total of 2985 NIS teachers were covered by level-based programmes and the Training Courses.

Teachers covered by level-based programmes and Training Courses in 2012-2017

№	Programme	Number of teachers trained						
			including					
		total	2012	2013	2014	2015	2016	2017
1	Third (basic)/ 'Efficient Learning'	8 246	1 053	1 147	1 004	1 949	1 781	1 312
2	Second (main)/ 'Teacher Leadership in School'	4 952	-	997	999	173	1 420	1 363
3	First (advanced)/ 'Leadership in the Teacher Community'	15 000	-	3 093	3 101	2 871	2 995	2 940
	TOTAL:	**28 198**	**1 053**	**5 237**	**5 104**	**4 993**	**6 196**	**5 615**

NIS teachers trained in 2013-2017

№	Programme	Number of teachers trained					
			including				
		total	2013	2014	2015	2016	2017
1	Third (basic)/ 'Efficient Learning'	2 204	223	-	1 000	703	278
2	Second (main)/ 'Teacher Leadership in School'	548	-	-	155	227	166
3	First (advanced)/ 'Leadership in the Teacher Community'	233	-	-	88	95	50
	TOTAL:	**2 985**	**223**	**-**	**1 243**	**1 025**	**494**

Development Programme for Kazakhstani General Education Organization Leaders

This Leader Development Programme resulted in **1535 principals** prepared including **538** ones who started the Programme in 2016.

A separate course, carried out for NIS deputy principals, resulted in another **20 experts** prepared.

The total number of leaders trained under the Leader Development Programme in 2014-2017 amounts to **4211**

Principals trained in 2014-2017

Principal category	Number of people trained *(people)*				
	total	including			
		2014	2015	2016	2017
Comprehensive schools	4 174	583	660	1 396	1 535
NIS schools	37	-	-	17	20
TOTAL:	4 211	583	660	1 413	1 555

Language courses in ICT, Physics, Chemistry, and Biology for comprehensive-school teachers, language and professional development courses for comprehensive-school English language teachers *(English courses)**

A phased transition to English as the language of instruction in education being part of the '100 Concrete Steps' national plan, NIS has been delivering English courses for comprehensive-schools teachers since April 2017:

◆ Language course in ICT, Physics, Chemistry, and Biology for comprehensive-school teachers, with the *duration of 1600 academic hours (10 months).*

◆ Language and professional development courses for comprehensive-school English language teachers, with the *duration of 2 to 5 months depending on the initial level of English.*

The courses are conducted by the Consortium of Language Schools comprised of Professional Development Center LLP, Interpress International House LLP, Caspian Training Group LLP, and 'New Generation' International Educational Center LLP (hereinafter the Consortium).

CoE and the Consortium entered into a Services Agreement to teach teachers English, provide teaching and methodical materials, invite trainers, perform independent evaluation and certification of the participants upon completion of the course.

The participants received scholarships, provided by CoE and its branches.

In 2017, a total of **1624 English teachers** took the courses (with the courses varying in duration from two to four months). **1975 teachers** are continuing to receive training, including **1070** English language teachers and **905** subject teachers. **Eight teachers** were expelled due to various circumstances (see the Appendix).

Electronic participant registration system

In 2015, CoE launched the Electronic Participant Registration System www.db.cpm.kz (the EPRS), allowing to register course participants and track their progress. The number of participants registered in 2017 amounted to **41,874.** The total number for 2015-2017 amounts to **97,501.**

Participants registered in 2015-2017

№	Programme	Total number of participants registered			
		2015	2016	2017	total
1	First (advanced)/ 'Leadership in the Teacher Community'	2 756	2 936	2 884	8 576
2	Second (main)/ 'Teacher Leadership in School'	156	1 262	1 240	2 658
3	Third (basic)/ 'Efficient Learning'	1 417	1 344	1 179	3 940
4	Leader Development Programme	731	1 019	1 091	2 841
5	Programmes under the Curriculum Reforms	1 121	42 885	35 480	79 486
	TOTAL:	6 181	49 446	41 874	97 501

Course quality monitoring

A number of measures ensure the quality of curriculum implementation in the Kazakhstani school system: preliminary diagnostics of target audience, course quality monitoring, and CoE post-course monitoring.

In 2017 **30,999 people** took part in the monitoring surveys:
- comprehensive-school principals (513);
- NIS teachers and deputy principals (552);
- comprehensive school teachers (29,276);
- trainers (413);
- certified comprehensive-school teachers from Astana and Akmola and Karaganda regions (245).

The monitoring provides information on:
- CoE trainers' effectiveness;
- relevance and practical significance of programmes;
- goals and objectives of programmes;
- comprehensiveness and sufficiency of theory and methodology.

Performed in two stages, input and output, the monitoring provides comparative data on the knowledge of the programme content and on mastering modern teaching methods and techniques. The input/output ratio for knowledge and skills amounts to a positive average of 40/60

Moreover, the participants noted that the format and duration of CoE training enables them to:
- share experience with colleagues and choose the most effective strategy for planning and school development;
- test new methods and approaches in-class;
- refine their quality control approaches to teaching and learning.

According to the survey, the expectations in regards to professional development were met, with 52% of the respondents' expectations having been exceeded.

Post-course monitoring intends to identify:
- the quality of curricula implementation in Kazakhstani schools;
- the participants' professional problems and needs;
- the quality and nature of classroom and school transformations through the eyes of teachers;
- the dynamics of qualitative and quantitative indicators of student attainment.

Overall, the dominant majority of the respondents **(89.8%)** view their teaching of the new curriculum as successful.

The vast majority **(83.8%)** evaluated the effectiveness of their teaching of the new content using the new criteria developed earlier in the year. This criteria-based assessment of teaching shows a positive dynamics both in teaching and learning.

Survey results: changes in teaching and learning brought about by the new curriculum

№	Survey content	Opinion	Share of the total number of respondents *(%)*
1	Changes to teaching	Teaching has generally improved	55,0
		Teaching has improved in several separate aspects (assessment; teaching and learning methods; lesson planning principles)	92,8
2	Changes to learning	Students are now more confident	54,5
		Students are now more interested in learning	53,3
		Parents have more trust in the assessment system	51,7
		Students are now happier and friendlier towards one another	47,3
		Students eagerly talk to the teacher	43,3
		Students are less anxious	42,1

2.4. POST-COURSE SUPPORT

Methodical support for teachers of the Leading Schools

Each Leading School partners with its neighbouring schools. As of 2017-2018, a total of 763 schools have the Leading School status *(see the Appendix).*

Leading Schools in 2015-2017
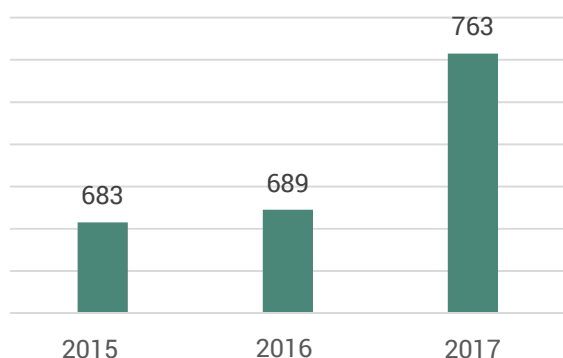
Leading School teachers receive post-course support through:
◆ school visits to provide consultation to coordinators, school trainers, and principals, and help resolve issues related to learning and assessment;
◆ lesson observations to improve teaching practice;
◆ teacher mentoring;
◆ training workshops for teachers from the region to disseminate their experience and promote curriculum reforms.

2017 saw trainers focus on the post-course support of grade 1, 2, 5, and 7 teachers, those teachers who implement the renewed content.

Leading Schools have conducted 2046 lesson observations, 4960 teacher consultations in teaching and assessment, 308 workshops, 347 roundtables, 300 master classes, 211 coaching sessions, and 44 online workshops *(see the Appendix).*

Post-course support through Leading Schools
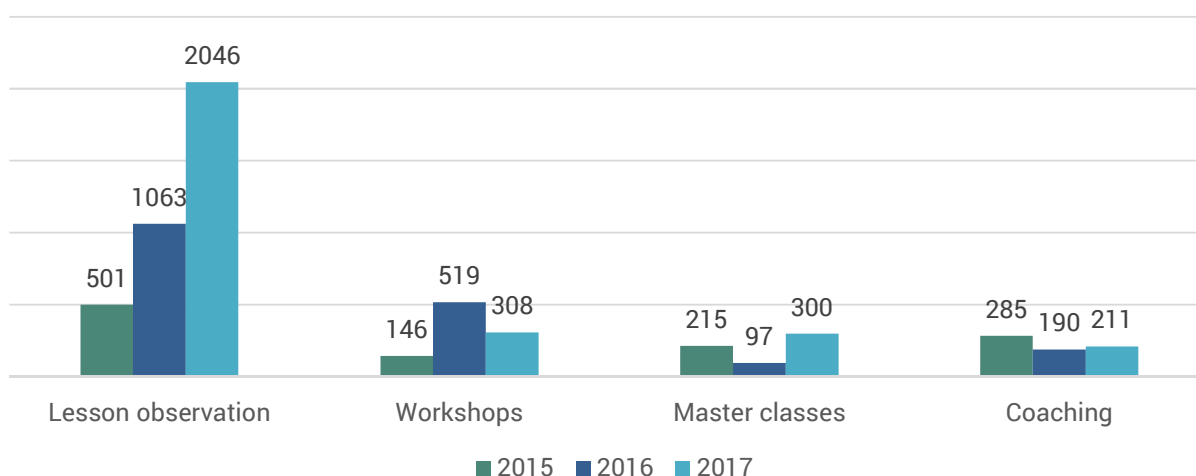
2017 brought about 232 activities of regional level, including 109 workshops, 9 master classes, 70 conferences, meeting sessions and roundtables, and 10 forums and festivals (Appendix 5).

Within the annual August meeting, trainers from mainstream schools gave presentations on the features of the new curriculum, criteria-based assessment, implementation of Lesson Study, etc.

The 'Best Constructivist Lesson' national contest was held for a second time to synthesise the best teaching practice and enhance professional competence in introducing new approaches to teaching and learning. The regional and national contests saw more than 300 participating teachers.

The 'Damu' contest took place for the first time to identify and broadcast the best comprehensive-school principal practice. The competition witnessed more than 100 principals.

Damu prizewinners in 2017

№	Name	Place of employment	Place
1	Birmanova Kymbat Islanbekovna	Gymnasium #7, Rudny, Kostanay Region	1st
2	Smanova Lazzat Umerkanovna	School #6, Taraz	2nd
3	Turebekova Zhamila Mavletovna	Gymnasium #41, Taraz	2nd
4	Koyshimanova Nurila Seysembayeva	School #5, Merkensky district, Zhambyl Region	3rd
5	Klimenko Yelena Alexandrovna	School #1, Arshalynsky district, Akmola Region	3rd
6	Inkarbekova Lazzat Tastanbayevna	1 May School, Karasaysky district, Almata Region	3rd

Methodical support for universities and colleges that prepare teachers

CoE trainers provided post-course support to the teachers who had received training under the Teacher Development and Primary School Programmes.

In 2017, CoE conducted a total of 60 activities: 31 workshops, 7 roundtables, 4 conferences and forums, 5 master classes, 13 professional conversations (see the Appendix).

Lesson Study

CoE carried out two research projects to monitor the implementation of Lesson Study in comprehensive schools.

March 2017 saw the **first survey** conducted, with the participation of **1482 teachers** from **676 schools:**

◆ 92% teachers understand the meaning, goal, and practice of Lesson Study;

◆ 90% respondents consider Lesson Study necessary;

◆ 85% teachers are interested in performing research and convinced it can improve their teaching.

Teachers find it hard using this approach to full efficiency. They state they lack methodological support, have a hard time identifying research objectives, and are unable to collaborate with external experts.

June 2017 saw the **second survey** with **998 participating teachers from Leading and partner schools**. The survey showed that 96.5% (963) schools had Lesson Study teams of 3 to 20 people. Of greatest relevancy were the topics of assessment questions, pair and teamwork efficiency, and critical thinking. The results were processed as follows: 62.2% at teacher councils, 42.6% school conferences, 12.8% published in the media, and 12.6% served as the basis for guidelines development.

The study indicates the need to continue the focused introduction of Lesson Study into the practice of Kazakhstani teachers, with methodological support from CoE.

NIS has enhanced the participating teachers' capacity in experience dissemination by launching a special website: http://www.lessonstudy.kz.

In **November 2017** CoE staff took part in the World Association of Lesson Studies XI International Conference in Nagoya, Japan. This year's conference was themed 'Combining Research and Practice through Lesson Study' and served as a platform for COE to present the Kazakhstani Lesson Study experience and studies conducted in Astana, Almaty, Kostanay, Uralsk and Aktobe.

2.5. METHODOLOGICAL SUPPORT

NIS continues to encourage networking among the training course participants via the www.cpm.kz **educational website**. The website hosts a total of **2521 educator communities**, with trainers providing methodological support to pilot, leading, and partner-school teachers.
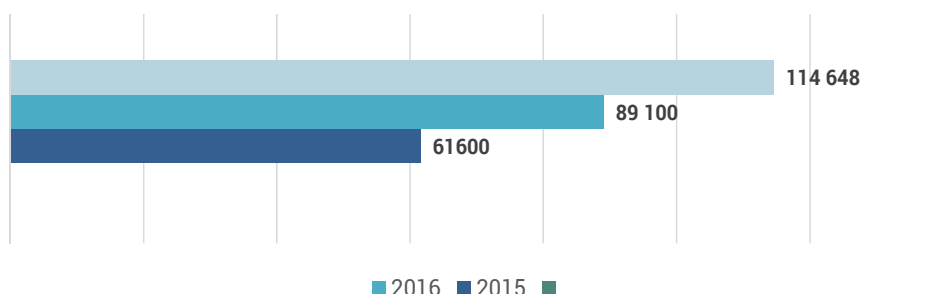
The registered use count amounts to **114,648.**

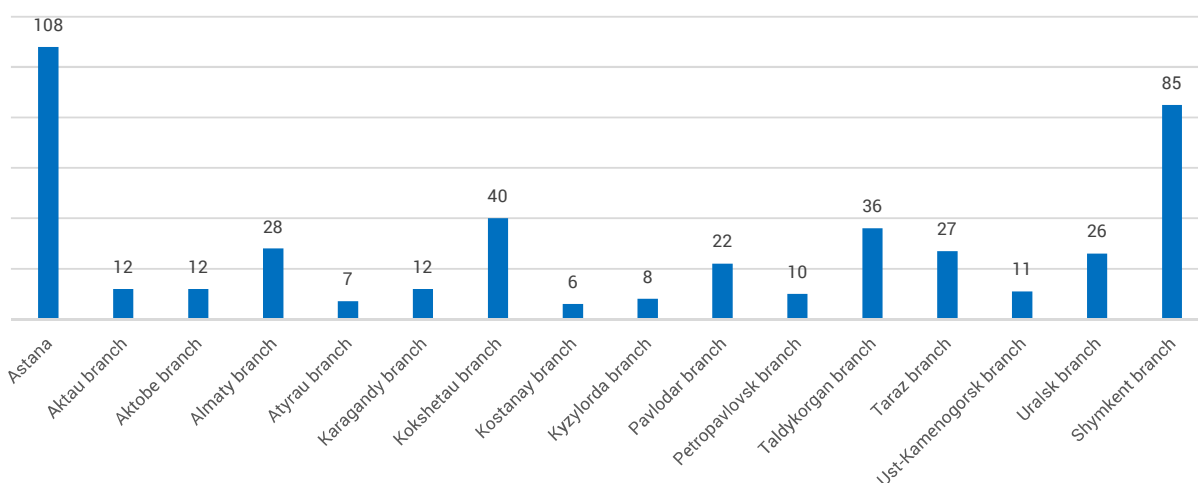According to Yandex Metrica, the visit count in 2017 amounted to 2,537,969.

To promote continuous teacher development, provide opportunities for professional dialogue on training and teaching, and render trainer consultation, NIS has crafted a new tool, the **Kazakhstani Teacher Online Community.** The Online Community website section has been steadily growing ever since. In 2017, the visit count amounted to **659,675 (277,518** visits in 2015 and **397,340** in 2016).

CoE Trainers continue to engage teachers in the discussing of relevant issues in education via forums and blogs. In 2017, the forum saw **over 2000 posts.**

Users in 2015–2017

■ 2016 ■ 2015 ■

- 114 648
- 89 100
- 61600

Active groups in the online community in 2017

Astana	Aktau branch	Aktobe branch	Almaty branch	Atyrau branch	Karagandy branch	Kokshetau branch	Kostanay branch	Kyzylorda branch	Pavlodar branch	Petropavlovsk branch	Taldykorgan branch	Taraz branch	Ust-Kamenogorsk branch	Uralsk branch	Shymkent branch
108	12	12	28	7	12	40	6	8	22	10	36	27	11	26	85

The **Online Methodology Bank** is annually growing, now having **909 projects** assorted by subjects. All *www.cpm.kz* users have access to the Bank. The website serves as a platform for online workshops. In 2017, NIS trainers conducted **42 online workshops** for trainers and teachers.

2.6. PUBLICATIONS

The modernization of Kazakhstani education has been the topic of many articles published in the regional and national media in Kazakh and Russian languages. These mainly covered professional development courses under the Curriculum Reforms.

A media monitoring was conducted to find out the **number of relevant articles** published in 2017 amounted to **51**, including 6 videos on the national TV channels, 18 articles in regional media, 16 articles in international and national education journals, and 12 articles in the 'Pedagogic Dialogue' journal.

Feedback from the professional development course participants has been in the spotlight of more than **75 publications** of the national and regional significance *(see the Appendix).*

Publications indicate that course participants are positive about the content and format of the professional development courses held under the Curriculum Reforms.

UNIT 3.
EXPERIENCE DISSEMINATION TO THE COMPREHENSIVE SCHOOLS

3.1. 30 PILOT SCHOOLS

PILOTING AND IMPLEMENTATION OF EDUCATION CONTENT

The MES plan has the new content piloted by 30 schools in urban (18) and rural (12) areas, including multi-graded schools (4) since 1 September 2015.

2017-2018 saw grade 3 programmes piloted and renewed content implemented in comprehensive school grades 2, 5, and 7.

NIS supports the implementation of updated curricula through:

◆ A consulting group consisting of developers of curricula, textbooks, criteria-based assessment system, and digital educational resources.
◆ Educational Resource Portal www.smk.edu. kz, with all Kazakhstani teachers having free access to the website since 2016.
◆ A discussion platform/forum for pilot schools teachers to share experience and best practice in lesson and resource planning and discuss issues with teachers and curriculum developers.
◆ Experiment Library, whose **132 categories embrace more than 63 thousand copies** of academic materials, with new methodical literature added every 3 months.
◆ Having each pilot school assigned to the local NIS school. The collaboration resulted in joint action plans in providing methodological and resource support to teachers and principals.
◆ Creative groups of teacher development-course certificate holders. Those are the main facilitators of curriculum reforms in regions.
◆ 32 CoE trainers providing hands-on assistance to pilot schools in teaching and learning methodology. The trainers take part in joint planning of lessons and activities; lesson observations; master classes; training courses; workshops and tutorials; discussions with teachers, school leaders, and parents; and, post-course monitoring with feedback and recommendations.

◆ A teacher online community, with trainers providing extensive methodological and consulting assistance to teachers of pilot, leading, and partner schools. The community enables school leaders and teachers to improve their teaching through experience dissemination, cooperation, and in-person and online discussion.

PROVIDING METHODOLOGICAL SUPPORT AND TRAINING TO PILOT-SCHOOL TEACHERS

Methodological support covered several areas:
◆ workshops and trainings explaining the features of grade 3 curricula;
◆ methodological guides and recommendations;
◆ educational resources;
◆ Educational Resource Portal content.

To oversee the piloting of updated content and provide methodological support, NIS held two-day seminars, in February and August respectively. The latter was part of the National August Teacher Meeting, an event to bring together primary school teachers from 30 pilot schools. Trained by subject coordinators, 143 pilot-school teachers moved on to conduct workshops for grade 2 teachers in the regions

Compared to the two previous academic years, pilot-school teachers acted more independently in solving methodological issues and demonstrated a desire to master new teaching technologies.

> Each NIS school has a demanding mission to fulfill–to provide continuous methodological support and advice to teachers of pilot and comprehensive schools in the region.

According to the action plans in 2015 – 2017 Intellectual school teachers carried out more than **8 thousand** methodical, consulting and practical activities to support teachers in pilot schools.

The MES content implementation plan

Academic year	Pre-prep	1	2	3	4	5	6	7	8	9	10	11
2015-2016	A+E	A+E										
2016-2017		1	A+E									
2017-2018		1	2	A+E		5(6)		7(8)				
2018-2019		1	2	3	A+E	5(6)	6(7)	7(8)	8(9)		10(11)	
2019-2020 (renumbering)	1	2(1)	3(2)	4(3)	5(4)	6		8	9	10	11	12

A – Approbation; E- Experiment;

- learning based on existing curricula

- piloting of updated curricula

- implementation of updated curricula

Consulting the teachers of 30 pilot schools

CoE trainers continued to deliver post-course support to the teachers of 30 pilot schools piloting the State Compulsory Primary Education.

A total of 389 teachers piloted the updated content: **155** primary school teachers, **48** Kazakh language teachers, **34** Russian language teachers, **72** English language teachers, **48** Visual Arts teachers, and **32** Music teachers. **113** teachers (29%) of the **389** teachers of pilot schools took level courses, and **308** teachers (79.1%) programmes under the Curriculum Reforms.

CoE attended **388 lessons**, conducted **133 conversations** with project coordinators in schools and **382 professional conversations** with teachers, organized **139 training events**, took part in the joint planning of **279 lessons**, and published **34 methodological** guides.

Methodological support provided in 2016-2017 under the Curriculum Reforms

№	Activity	Number of participants	
		2016	**2017**
1	Lesson observation	1 037	388
2	Conversations with project coordinators in school	360	133
3	Professional conversations with teachers	988	382
4	Training events	375	139
5	Joint lesson planning	388	279

Compared to the previous year, there was a decrease in the number of methodological support activities. This was due to CoE supervising in-school teacher development in pilot schools.

MONITORING THE PILOTING OF UPDATED CONTENT

The MES curriculum piloting methodology (dated 21 July 2015) caters for **continuous monitoring** of updated education content, including diagnostic student testing in 30 pilot and 16 control schools.

There were three stages to diagnostic testing: grade 1 **input diagnostics** at the beginning of 2015-2016 academic year; grade 1 **output diagnostics** at the end of 2015-2016 academic year; and, grade 2 **output diagnostics** at the end of 2016-2017 academic year.

The testing assessed students' knowledge and skills in World Understanding, Science, Literacy, and Mathematics.

The 2017 testing covered **5023** grade 2 students of 30 pilot and 16 control schools from 14 regions and 2 cities of national importance.

> **!** *For reference: The data processing bases on the Item Response Theory (IRT) and the OPLM one-parameter model, which calculates **students' ability score based on the discriminative properties and complexity of tests**. Obtained through input and output assessment of knowledge and skills, the preliminary score then converts into an ability score of 50 to 150 to ensure comparability of the results.*

The NIS diagnostic testing algorithm is as follows:
- developing tasks and test specifications for Science and World Understanding, Kazakh Language, Russian Language, Uyghur Language, and Mathematics in Kazakh, Russian and Uighur languages;
- developing testing instructions;
- briefing the school coordinators and test administrators;
- testing grade 2 students in 30 pilot and 16 control schools;
- performing statistical and psychometric analysis of the results.

The testing resulted in analytical and summary reports for each grade, more than 3000 individual student reports overall.
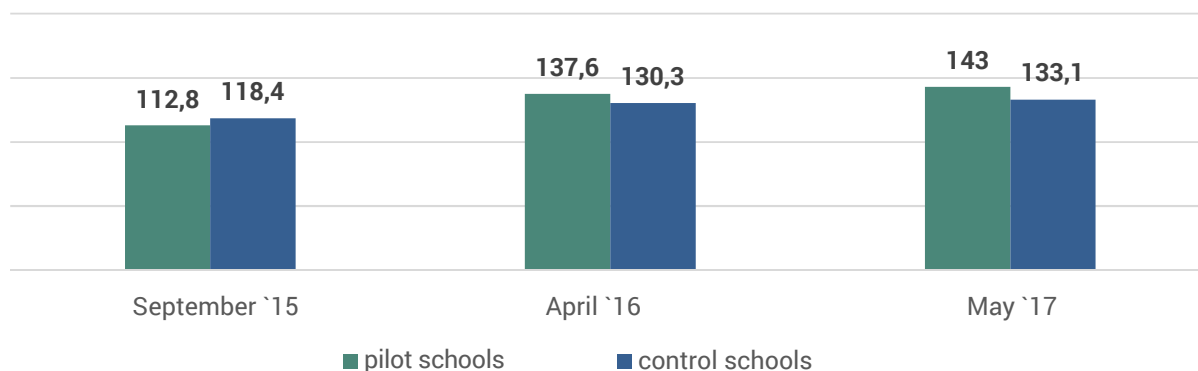
The principals and teachers of pilot schools received all reporting information to further update and improve the teaching and learning process in the 2017-2018 academic year.

The pilot schools showed a great increase in learning results. The grade 2 output testing proved the pilot schools to have made a **remarkable progress** in the average score, from 112.8 to 143 points (+30.2), which is twice higher that the progress made by the control schools, from 118.4 to 133.1 points (+ 14.7).
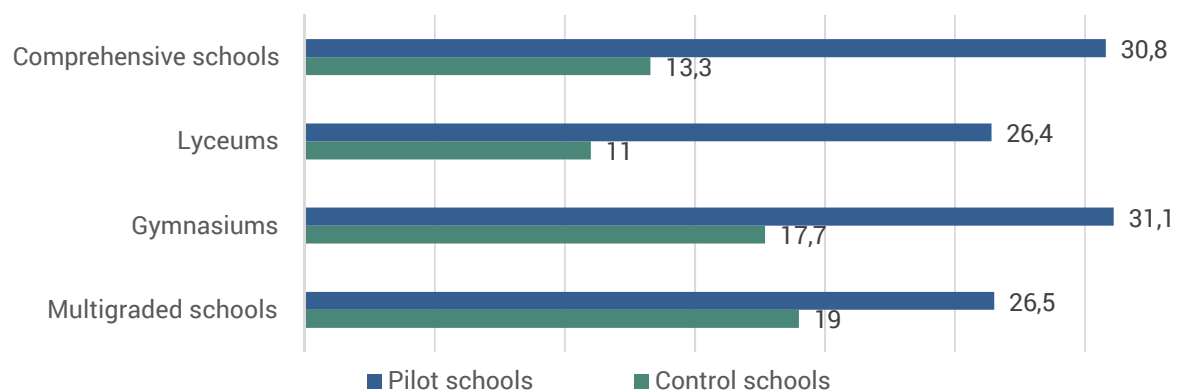
Despite the pilot schools scoring 5.9 points lower than the control schools in the grade 1 input testing (112.6 as opposed to 118.5 points), the second and third testing showed the difference in average scores increase from 7.3 to 9.9 in favor of the pilot schools (Figure 1).
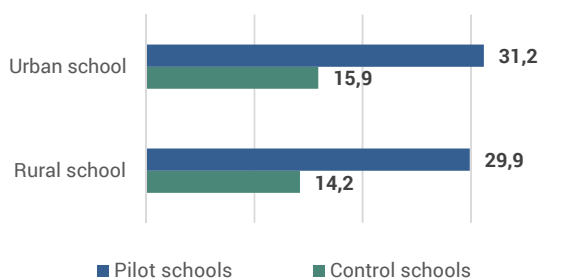
Difference in the average score between pilot and control schools

Diagnostic testing

September `15: pilot schools 112,8 — control schools 118,4
April `16: pilot schools 137,6 — control schools 130,3
May `17: pilot schools 143 — control schools 133,1

■ pilot schools   ■ control schools

The progress in average score from September 2015 to May 2017 proves the updated curricula beneficial regardless of language and school location and type.

Progress in average score by school type, September 2015 – May 2017

Comprehensive schools: Pilot schools 30,8 — Control schools 13,3
Lyceums: Pilot schools 26,4 — Control schools 11
Gymnasiums: Pilot schools 31,1 — Control schools 17,7
Multigraded schools: Pilot schools 26,5 — Control schools 19

■ Pilot schools   ■ Control schools

Progress in average score by school location, September 2015 – May 2017

Progress in the average scores broken down by the type of locality

Urban school: Pilot schools 31,2 — Control schools 15,9
Rural school: Pilot schools 29,9 — Control schools 14,2

■ Pilot schools   ■ Control schools

Progress in average score by language, September 2015 – May 2017

Progress in the average scores broken down by the language

The Russian language: Pilot schools 31 — Control schools 17,4
The Kazakh language: Pilot schools 29,9 — Control schools 14,1
The Uyghur language: Pilot schools 14,2 — Control schools 5,2

■ Pilot schools   ■ Control schools
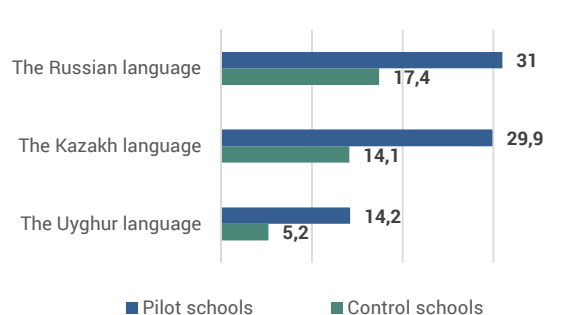
These three testings resulted in a student trajectory map (Figure 5).

Student trajectory map by results in the three tests

Pilot schools

Control schools

The map distributes students into four groups:

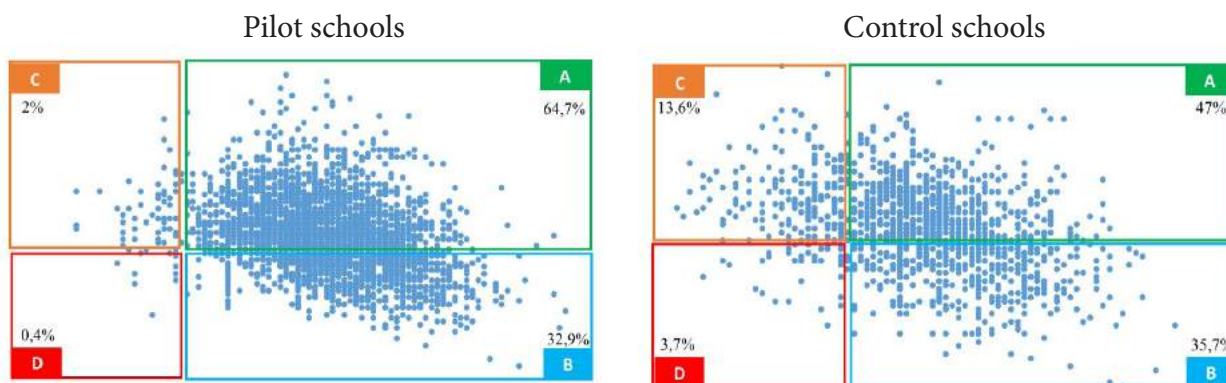◆ **Group A:** constant growth (64.7% for pilot schools, 47% for control schools), i.e. performance improved from testing to testing;

◆ **Group B:** growth in the second and decline in the third testing (32.9% for pilot schools, 35.7% for control schools), i.e. no performance growth in the last test;

◆ **Group C**, decline in the second and growth the third testing (2% for pilot schools, 13.6% for control schools), i.e. performance growth only in the last test;

◆ **Group D,** constant decline (0.4% for pilot schools, 3.7% for control schools), i.e. performance declined from testing to testing.

Groups **B** and **C** require further research to draw conclusion regarding the learning trajectory. **Group D** is the risk group; it should be provided with individual support and fine-tuned teaching. Such students account for 10 out of 2902 students in pilot schools and 51 out of 1378 students in control schools.

In addition, the testing showed an increase in the minimum score, with the pilot schools advancing from a score of 64 to 107 (+43) and the control ones from 81 to 100 (+19). Therefore, the new education content provided the less able with a more favorable environment and growth opportunities by encouraging commitment and involvement.

The data proves the pilot school highly efficient. The Curriculum Reforms allowed for gradual alignment of school efficiency by type and location (urban/rural). Consequently, transition to the updated content proves to be reasonable and effective.

3.2. NIS SCHOOLS AS REGIONAL METHODOLOGY CENTRES

With the national education system undergoing modernization, the **Head of State** has placed a special emphasis on disseminating the NIS experience into the national education system.

The **2017 Nazarbayev University Graduation Ceremony** and the corresponding meeting of the Supreme Board of Trustees of Nazarbayev University, Nazarbayev Intellectual Schools, and Nazarbayev Autonomous Educational Organisations saw the **Head of State** *'designate NIS schools as regional methodology centres for curriculum reforms and teacher development, under the dissemination of the NIS experience into the national education system'.*

To fulfil this instruction, NIS and the MES developed a **Joint Action Plan** coordinating the efforts of NIS and regional education authorities in curriculum reforms and teacher development.

METHODOLOGICAL SUPPORT OF THE RENEWED CONTENT OF EDUCATION

Since 2015, NIS has been developing and refining regulatory documents and training resources for the Curriculum Reforms.

In particular, NIS has provided the MES with the draft versions of the State Compulsory Education Standards and **136 curricula** for primary and lower and upper secondary in two languages.

In implementing the updated curricula, teachers have NIS-support in the form of **254 methodological recommendations** (medium-term plans) for primary school and grades 5 and 7.

To support **grades 1, 2, 5, and 7 in 2017-2018**, Nazarbayev Intellectual Schools has developed, in Kazakh and Russian, a series of recommendations on formative and summative assessment; teacher guides for grades 2, 5, and 7; summative assessment specifications for grades 5 and 7 **(179 documents)**; and, a number of videos and information leaflets. Another means of support lies in the daily moderation of ERP forums for teachers and regional and school coordinators for criteria-based assessment.

Preparing teachers to work with the updated curricula, CoE has developed **78 professional development programmes** for teachers, principals, methodologists of education departments, school trainers, etc., including **66 programmes** for subject teachers of comprehensive schools.

RAISING AWARENESS OF TEACHERS AND PRINCIPALS

NIS has a consulting group consisting of methodology and technology trainers and developers of curricula, textbooks, criteria-based assessment, and digital educational resources.

It has done the following:
- **338 on-site** professional subject-specific consultations;
- **37 workshops on the content of curricula:**
  - methodical workshops to explain the updated grade 6 and 8 curricula and present the concept of grade 3 textbooks. The workshops included master classes on the content and implementation of curricula for grades 2, 5, and 7 and resulted in the preparation of 1000 school teachers in the city of Astana and regions of Akmola, Mangystau, and Kyzylorda;
  - meetings with textbook authors and curriculum developers to explain the updated curricula;
  - methodical workshops for the teachers of 30 pilot schools;
  - meetings with the teacher community to discuss the amendments made to the curricula.

As a regional methodology and consulting centre, each NIS school has carried out the following:
- **1979** workshops;
- **964** trainings;
- **6021** master classes across all the primary school subjects;
- **338** on-site consultations;
- **1036** lesson observation in pilot schools, with feedback provided to the teachers;
- **303** language courses for 1222 English language **teachers** of pilot schools;
- **46** educational lectures for parents;
- **3044** online lessons for students and **299** online workshops for primary teachers;
- All-country Kazakh Language Teacher Forum (since 2013).

The August Teacher Meeting included a major NIS-organized event, **the section 'The Main Priority of Modernization 3.0: Updating the Content of Primary and Lower Secondary Education'**, involving **about 21 thousand** teachers in the 16 regions.

NIS schools served as a platform for comprehensive-school teachers to examine the features of the 17 lower secondary subjects and criteria-based assessment of the updated grade 5 and 7 curricula.

NIS teachers carried out 1019 master classes for grade 5 and 7 teachers, and pilot-school teachers 748 master classes for grade 2 teachers. In total, the country saw 1767 master classes in two days.

The master classes were a joint effort of 1100 NIS teachers, 41 CoE trainers, 131 pilot-school teachers, and 40 teaching methodology and technology trainers.

A total of 37 download zones were organized in the schools of 16 regions, with the teachers receiving the opportunity to download methodological materials from the ERP to personal data storage devices.

To provide methodological support and disseminate the best teaching practice, NIS has published 273 items of methodical, informational, and analytical literature.

In 2015-2017, NIS carried out more than 8 thousand methodical, consulting, and practical activities to support the teachers of 2831 pilot and comprehensive schools (40% of the total number of schools in Kazakhstan).

International research-to-practice conference

October 2017 saw the IX annual International Research-to-Practice Conference 'Values, Wellbeing and Innovation for the Future of Education', an event that brought together teachers from all over the country.

The conference totaled to 60 breakout sessions and workshops and 171 presentations on relevant curriculum reform issues: Criteria-based Assessment in Simple Words, Teaching English: Using the Communicative Approach to Develop Grade 7 Students' Speaking, 100 Formative Assessment Ideas, A School Project in Multilingualism, Modern Methodology for Mathematics Teachers, Solving Real-life Problems, etc.

The Conference materials are available at http://conferences.nis.edu.kz/?competitions=ix-nis-international-conference&lang=en. Currently, NIS is preparing the 2018 Conference.

3.3. COOPERATION WITH NATIONAL-SIGNIFICANCE ORGANISATIONS

In 2017, NIS continued collaborating with special-status educational organisations and regional and Astana akimats.

SPECIAL-STATUS EDUCATIONAL ORGANISATIONS
Republican Physics and Mathematics Schools in Astana and Almaty

As part of experience dissemination, NIS introduced its curriculum to Republican Physics and Mathematics Schools through:

◆ reinforcing the schools' curricula with NIS Programme components, that is:
  – introducing the NIS Algebra, Geometry, Physics and Programming curricula, with the other subjects instructed against the new State Compulsory Education Standard;
  – introducing the NIS Physics, Mathematics, and Computer Science curricula in grades 8–11;
◆ a step-by-step transition to trilingual education by teaching Physics, Chemistry, Biology, Computer Science and Programming in English in upper secondary school.

Starting from the 2017–2018 academic year, grades 1, 2, 3, 5, and 7 use **criteria-based assessment** for all subjects (as part of the Curriculum Reforms).

September 2017 brought about the launch of an online portal (available at www.kundelik.kz), which now has a user base of 1307 learners, 232 staff members, and 522 parents.

NIS held **38 events:**
◆ 4 professional development courses;
◆ 22 workshops;
◆ 11 practical workshops;
◆ and a round table.

CoE rendered post-course support and mentored RPhMS by attending **58 lessons** and providing feedback to the teachers,.

Below are **the eight activities that NIS will continue** in 2018:
◆ in-school professional development courses Reflection in Practice and Research in Teacher Practice;
◆ vacation language courses for English teachers at RPhMS, with the involvement of foreign teachers;
◆ making the best RPhMS lesson practices in teaching and methodology available for download;
◆ lesson observation and feedback (100 lessons at each school);
◆ training deputy principals to perform lesson observation;
◆ advisory, methodological, and practical assistance to teachers based on the results of lesson observations;
◆ transforming school premises into educational zones and enhancing the use of furniture arrangement;
◆ sharing the schools' best practices on city and national levels.

Zhas Ulan National Military Schools in Astana, Almaty, Karaganda, Shymkent

Each ZUS school receives support from CoE and NIS trainers, who have carried out the following:

◆ internships in NIS for the principals of all four ZUS schools;
◆ professional development courses in methodology, technology, and criteria-based assessment for teachers and school leaders, with all subjects covered;
◆ professional development courses: learning methodology and technology for school trainers, criteria-based assessment for school coordinators;
◆ 'Effective Teaching' professional development courses for teachers and school leaders (standard and basic levels);
◆ master classes, workshops, research-to-practice conferences for teachers, librarians, education officers, and school leaders.
◆ workshops: 'Functional Literacy in Pastoral Work Management', 'Criteria-based Assessment as Part of the Curriculum Reforms', etc.

To share experience, the Schools have had an online platform set up for them.

In September 2017, NIS carried out an input monitoring of student performance in Kazakh, Russian, and English to identify the current Reading capacity.

NIS school psychologists established close cooperation with their colleagues from the ZUS schools.

NIS hosted a 10-day Robotics course for the ZUS schools' students, who later took the 3rd place at the regional Robotics competition.

In November 2017, the ZUS and NIS schools began to develop the collection of essays titled 'Motherland Is…'

NIS and ZUS jointly hosted a variety of sports competitions, patriotically themed training games, interactive workshops, and military field trainings.

ZUS students took an active part in TEDx NIS, Serving the Society, Bowing to the Motherland, and other projects.

ZUS libraries re-structured their facilities and introduced new formats for the events and lessons held for students and teachers.

Throughout the year, CoE provided the ZUS schools with methodological literature and new issues of the Pedagogichesky Vestnik magazine.

As a result of collaboration with NIS, the ZUS schools re-built their educational process to meet the demands posed by modern methodology and technology.

Teachers and parents indicate that students now have more enthusiasm towards school, are engaged in projects, take an active part in the educational process, etc.

3.4 COOPERATION WITH REGIONAL AND ASTANA AKIMATS

2017 brought about the Curriculum Reforms to 7 regions: Astana (20), Aktobe region (64), Akmola region (57), Western Kazakhstan region (68), Kyzylorda region (46), Mangystau region (26), Southern Kazakhstan region (100).

Astana

Under experience dissemination, NIS collaborated with the Astana Education Authority to:
- develop the management and leadership qualities of 20 leading schools principals;
- transform the educational environment in School No 76;
- develop the staff capacity in Schools No 66 and No 73;
- provide methodological support to subject teachers;
- hold consulting sessions with school teachers;
- implement the best innovative library practice.

The NIS experience dissemination did not leave comprehensive-school teachers unattended:
- School No 76: 5 professional development courses, 16 workshops, 3 trainings, and 30 methodological support events;
- Schools No 73 and No 66: 13 two-to-three-day workshops on all grade 5 and 7 subjects and 11 methodological support events;
- 84 comprehensive urban schools: 15 events to provide consulting, practical, and methodological support.

The NIS teacher training was as follows:
- 732 people trained in teaching methodology and technology:
  - 461 teachers (level programmes);
  - 69 school leaders (principals and deputy principals);
  - 118 school trainers in methodology and technology;
  - 84 school librarians.
- 734 people trained under the Curriculum Reforms:
  - 76 principals and vice principals;
  - 398 primary and subject teachers;
  - 81 assessment coordinators;
  - 158 ICT teachers;
  - 9 methodology experts from the Astana Education Authority;
  - 12 teachers from the Arts College.

Under the August Conference, a total of 1600 teachers received training (workshops and master classes) in the classroom usage of ICT.

Astana primary teachers have been granted access to the smk.edu.kz Educational Resource Portal and play.nis.edu.kz Digital Educational Resources Bank. The ERP has had an additional 5.2 thousand registered teachers, with 95.8 thousand page views and 310.7 file downloads.

Akmola region

2296 multigraded-school teachers underwent a short-term training under the Curriculum Reforms:
- 1066 primary and subject teachers;
- 590 principals and vice principals;
- 70 methodology experts of regional and city educational authorities;
- 38 regional assessment coordinators;
- 532 school assessment coordinators.

NIS conducted workshops and trainings for 330 principals and teachers of multigraded schools to introduce them to the NIS innovative platform.

NIS principals took part in **travelling workshops** for Arnasay school, Arshalyn district, to share experience and promote student/teacher research and projects in the area of Green Technology. This collaboration resulted in *project teams* for teacher development.

Located in the village of Arnasay, the Centre of Green Technologies hosted EXPO CAMP, a summer camp for NIS students from Astana, visited by heads of public bodies (Ministry of Argiculture; Ministry of Investment and Development; Ministry of Education and Science) and a delegation from Mangystau region.

As part of post-course support, CoE provided practical assistance to multigraded schools through 49 travelling seminars for 1960 teachers.

Educational Resource Centre ran trainings on the use of the Educational Resource Portal, with 11 thousand teachers registered, 280.5 thousand page views and 985.7 thousand file downloads.

Kyzylorda region

The experience dissemination in this region was one of the most successful projects, resulting in the number of innovative schools growing from 22 to 46.

For reference: 34 lyceums, 9 gymnasiums, 1 school for gifted children, and 2 innovative education schools.

The project has led to significant changes to the innovative schools practice.
- special Lesson Study research groups to enhance teaching and learning in 25 innovative schools;
- a trainer pool, consisting of the best school teachers, to deliver the Reflection in Practice internal teacher development courses;
- a coach leader community, consolidating principals, teachers, methodologists, and trainers, to help those seeking consultation and advice;
- mobile creative teacher groups to coordinate experience dissemination through workshops and conferences in cities and rural areas;
- trainer preparation courses for innovative-school teachers to deliver training for subject teachers under the Curriculum Reforms.
- Curriculum Reforms Resource Centres on the premises of 46 innovative schools to integrate the best NIS social projects and practices: the

'Shanyrak' school community and Tugan Elgy Tagzym expeditions.

The Kyzylorda Region Akimat upgraded the infrastructure of all schools in the region.

46 innovative schools have received new physics lab equipment, interactive blackboards, computers, and broadband internet connection. Additionally, 30 schools have received robotics labs.

2018 is scheduled to equip Chemistry and Biology classrooms in 46 schools.

Innovative schools in seven districts and the city of Kyzylorda served as the basis for **Methodological Caravan – 2017**, an online community to provide methodological support.

Methodological Caravan covers five areas of teaching and learning:
◆ criteria-based assessment;
◆ teaching the talented and gifted;
◆ planning and developing differentiated activities;
◆ lesson planning and reflection;
◆ interactive teaching methods.

The Lesson Study approach has been introduced to innovative schools and is being introduced to other comprehensive schools in the region.

Those having questions about comprehensive schools and criteria-based assessment can discuss them online on special forums dedicated to 'effective change management under curriculum reforms'.

The platform has provided 46 innovative schools with the opportunity to perform communication via a special page.

Another project, the 'Working with the smk.edu. kz Educational Portal' online-conference serves as a place to meet for 581 teachers from 38 innovative schools.

NIS teachers and CoE trainers have performed 764 events in the region:
◆ 149 workshops;
◆ 77 trainings;
◆ 502 master classes;
◆ 19 language courses for teachers of the English language;
◆ 11 travelling consultation meetings;
◆ 5 regional workshops on effective learning and criteria-based assessment under the Curriculum Reforms, participated by school teachers and university and college professors;
◆ Regional contest for the best constructivist lesson.

The innovative school curriculum has introduced additional weekly hours: 4 hours for in-depth training in Mathematics and Natural Sciences, 44 hours for projects and research supervised by university lecturers, and 4.5 hours for extracurricular work. English is gradually making its way as the language of instruction, with 5 hours per week for in-depth

learning of English.

The post-course support of primary teachers in regions (46 innovative and 252 magnet schools) comprised 332 activities conducted for 3790 teachers:
◆ 58 lesson observation visits in grade 1;
◆ 150 teacher consultations;
◆ 12 master classes;
◆ 25 practical workshops;
◆ 55 briefings;
◆ 2 lectures for parents.

The ERP sees active use, with 9.4 thousand teachers registered, 184.9 thousand page views, and 656.4 file downloads.

Aktobe region

May 2017 witnessed 'Ensuring Sustainable Transformation: the Leading School Communiy', the first regional forum of leading schools in Aktobe and Western Kazakhstan regions.

The forum served as an experience dissemination platform for 54 Aktobe leading schools and 44 West Kazakhstan ones, with participation from 76 leading school principals and 83 coordinators, 39 employees of regional and district (municipal) methodological services and education authorities, and representatives of Mangystau and Atyrau Education Departments.

The forum comprised **6 panel discussions, 3 principal trainings, 8 discussion platforms, and 4 master classes**, where leading school coordinators from the two regions shared their best practice.

CoE carried out professional development courses for a total of 367 people:
◆ 58 methodologists of district and municipal education departments;
◆ 34 leading-school principals;
◆ 185 subject teachers;
◆ 90 comprehensive-school principals.

Out of all the CoE training participants in 2017, 62.7% were leading-school teachers (compared to 36% in 2016).

The post-course support comprised 285 lessons observations in 56 schools. These activities served as the basis for 75 workshops and 6 webinars, with 2715 teachers receiving feedback.

Besides, NIS monitored the efficiency of teaching and pastoral work in 35 leading schools. The monitoring embraced 70 lesson observations with feedback provided afterwards.

CoE rendered leading schools methodological by providing 68 methodology guides and teacher aids.

The in-school capacity building was as follows:
◆ Workshops and trainings on criteria-based assessment, lesson study, education content, innovative libraries, methodology and technology for 1.53 thousand teachers;
◆ 28 training workshops on formative assessment, 933 teachers;

◆ vacation school on new methodology and technology, 900 teachers;
◆ 16 travelling teacher-consultations;
◆ 27 demonstration lessons by NIS teachers, with the subjects varying.

The ERP sees active use, with 9.2 thousand teachers registered, 192.1 thousand page views, and 706.6 thousand file downloads.

The number of leading school increased from 53 to 64.

Subject-teacher communities were created, amounting to 64 professional communities.

Mangystau region

August 2017 saw the start of a collaboration between NIS and 26 leading schools in the region.

CoE carried out courses for **235 principals and deputy principals**, which included master classes and practical workshops held at the NIS premises. These courses introduced participants to the work of advisers, school libraries, pastoral work and demonstration lesson assessment.

CoE prepared 296 methodology and technology trainers and 143 assessment coordinators to provide consultancy in their schools and to teachers of other schools.

A total of 74 lesson observations were conducted to result in 17 meeting for teachers and assessment coordinators, 45 joint lesson-planning sessions, and 61 professional conversations.

With CoE having established five professional communities, the region enjoys the networking of 3.2 thousand teachers and school leaders (principals, subject and primary teachers, etc.).

The ERP sees active use, with 5.9 thousand teachers registered, 120.3 thousand page views, 330.7 thousand file downloads, and 117 posts.

West Kazakhstan region

In November 2017, NIS started a collaboration with 68 leading schools in the region.

The region akimat set a clear objective for the district and municipal education authorities and leading schools: help forward the Curriculum Reforms.

CoE prepared 824 school trainers and 353 assessment coordinators.

NIS carried out 275 events: 68 training workshops, 165 master classes, and 42 training sessions, with 8115 people trained in total.

The ERP sees active use, with 7.9 thousand teachers registered, 142.3 thousand page views, and 648.4 thousand file downloads.

South Kazakhstan region

NIS started collaborating with 100 leading schools in November 2017.

The region akimat held a meeting to set a clear objective for the district and municipal education authorities and leading schools: help forward the Curriculum Reforms.

At the meeting, the akim noted that 'the education system is moving in a new direction; now its main goal is to bring up an all-round, smart, and patriotic generation ready to develop the country. All schools in the region need follow NIS schools' lead.

The NIS Chairperson Kulyash Shamshidinova visited the meeting to present a report, 'Curriculum Reforms: The Rationale', emphasizing the importance of implementing the new teaching methodology.

The principals of NIS and pilot schools shared their experience in criteria-based assessment, pastoral work, and learning management.

CoE trained 2504 school trainers and 1060 assessment coordinators.

NIS teachers carried out 944 events including 167 training workshops, 318 master classes, 111 training sessions, etc., with 13,130 teachers trained in total.

The ERP sees active use, with 21.4 thousand teachers registered, 463.9 thousand page views, and 1586 thousand file downloads.

FEEDBACK

In my experience and analysis of implementation of curriculum innovation in many nations, there are few examples of significant success, and many more examples of failure to achieve objectives.

Having had the privilege of having access to the current research and implementation work between NIS staff and pilot schools, the current work has strong signs of successful implementation and dissemination.

It is clear that the various lines of work put in place by NIS have resulted in excellent, high trust relationships with pilot schools.

The work indicates (i) the high quality of the curriculum and assessment tools prepared by NIS. This derives from the use of effective theory and evidence in the initial work in NIS, and effective work in turning aims and strategy into practice; (ii) well-designed evaluation work, combined with good relationship-building with pilot schools.

The joint work shows a high level of professional confidence in the schools, and a common commitment to evidence-based improvements of didactics, pedagogy and school management.

Many attempts at large-scale improvement fail due to poor commitment by the wider population of schools.

Here, there are impressive signs of all teachers and leaders taking responsibility for improvement strategy. This is significant and positive.

The various presentations include analyses which suggest a significant improvement in pupil attainment. This is impressive, particularly in the short timeframes of the work.

The findings demonstrate the importance of well-designed evaluation - something which I know NIS has been strongly committed to. This rivals the kind of evaluation work which I have seen in place in Singapore and Finland. Knowing how and why things are working is essential to effective implementation and improvement strategy.

I believe that the approach to curriculum development and to wider implementation is of high quality in Kazakhstan, and the evaluation studies suggest that impressive progress has been made in a short period of time.

One important addition to the discussion is the importance of dissemination more widely than the NIS schools and the set of schools with which they are working.

To help support wider understanding of the curriculum and assessment approaches being developed and disseminated by NIS, I strongly suggest that greater use is made of media channels: radio, television, newspaper, internet, and professional press.

The results of evaluation to date are impressive, and underpinned by a commitment to very high quality in the design and management of research and evaluation approaches.

Opening up wider public understanding of the work and discussion of progress and challenges would, I believe, be important and helpful.

Where this has been done systematically and carefully - in Finland, England, Canada, and Singapore - it has helped greatly with effective national improvement strategy.

Tim Oats
Group Director of Assessment research and Development at
Cambridge Assessment

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For reference: *Cambridge Assessment nonprofit organization is a local syndicate and department of Cambridge University.*

APPENDICES

Methodological Literature published under CoE Methodological Library in 2017

No	Name	Language
1	Student's Psychological Readiness to Learn	Russian
2	Time Management in Primary School	Russian
3	Developing Reflection through Analytical Writing	Russian
4	Developing Communication Skills through Interactive Learning	Russian
5	Robotics: Developing Students' 21st Century Skills	Russian
6	Functional Literacy: Developing Listening and Speaking in Primary School	Kazakh/ Russian
7	Methodology for School Trainers	Kazakh / Russian
8	Active Learning: Comprehension, Interpretation, Application	Russian
9	Teacher Self-assessment	Kazakh
10	Lesson Study: Analysing One's Own Practice	Kazakh
11	Developing Pedagogical Excellence in Future Teachers	Kazakh
12	Coaching Effectively: Theory And Practice	Kazakh
13	Developing Self-Regulated Learning through Formative Assessment	Kazakh
14	How to Conduct a Good Lesson Study	Russian
15	Lesson Study: From A to Z	Kazakh
16	Trainer Development Model	Russian
17	How to Work with Text Effectively	Russian
18	Unified Teaching Methodology	Kazakh
19	Collection of Lesson Plans for the 'Robotics' Elective Course	Kazakh / Russian
20	Using Probability Distribution to Solve Practical Problems.	Kazakh
21	Mathematical Jigsaw Puzzle: An Elective Mathematics Course	English.
22	Preparing Parents and Students for Criteria-Based Assessment	Kazakh
23	Successful Biology Lesson Plan: Algorithm for Grades 7-10	Russian
24	Practical Guide on 'Russian Language'	Russian
25	Formulating a Research Question	Russian
26	Collection of Creative Biology Problems	Russian
27	I'd Like to Ask, or How to Develop Questioning Skills	Russian
28	Developing Reading Literacy: Methods and Techniques	Russian
29	Methodological Recommendations on Lesson Study in Practice	Kazakh
30	Developing Creative Abilities: Theory and Techniques	Russian
31	Building Students' Reflective Skills	Russian
32	Engaging Students through Differentiation	Russian
33	Multigraded Schools: Cross-curricular Topics in Biology	Russian
34	Multigraded Schools: The Lesson Plan Constructor	Russian
35	Enhancing Teachers' Operational Efficiency and Responsibility through Lesson Evaluation	Kazakh
36	Effective Differentiation Techniques	Kazakh
37	Internet Resources in Learning	Kazakh
38	Sample Short-term Plans	Kazakh
39	Collection of Problems on Movement and Work	Kazakh
40	Reflection Methods and Their Effectiveness	Kazakh
41	Effective Lesson Planning	Russian
42	Functional Online Community	Russian
43	Differentiated Approach in Biology and Physics	Russian

44	Formative Assessment of Listening and Speaking	Kazakh / Russian
45	Emotional Intelligence as Part of Teacher's Excellence	Russian
46	The CoE Website 'Reading Together' Project	Russian
47	Effective Formative Assessment in Russian Language Lessons	Russian
48	Identifying the Outcomes of Classroom Activities	Kazakh
49	Cross-curricular Links in Mathematics	Kazakh
50	100 Active Learning Techniques	Russian
51	Graphic Teaching Methods	Russian
52	Multigraded Schools: Effective Pair- and Teamwork in	Russian
53	Building Problem-solving Skills through a Second Language	Russian
54	Developing Language Skills: Problems and Solutions	Kazakh
55	Methodology of Conflict Management Training	Russian
56	Creative Thinking: Effective Development Techniques	Kazakh
57	University Student Research in Pedagogy	Russian
58	Reflection: Improving Teaching Practice and Teacher Training	Russian
59	Using Lesson Study to Improve Teaching	Kazakh
60	Differentiated Teaching Methods	Kazakh
61	Guide to the Curriculum Reforms	Russian
62	Short-term Plans by 30 Pilot Schools' Teachers: English Language G2	Kazakh/ Russian
63	Short-term Plans by 30 Pilot Schools' Teachers: Science G2	Kazakh/ Russian
64	Short-term Plans by 30 Pilot Schools' Teachers: Kazakh Language G2	Kazakh/ Russian
65	Short-term Plans by 30 Pilot Schools' Teachers: Literature G2	Kazakh / Russian
66	Short-term Plans by 30 Pilot Schools' Teachers: Mathematics G2	Kazakh / Russian
67	Short-term Plans by 30 Pilot Schools' Teachers: World Understanding G2	Kazakh / Russian
68	Short-term Plans by 30 Pilot Schools' Teachers: Russian Language G2	Kazakh/ Russian
69	Short-term Plans by 30 Pilot Schools' Teachers: Arts and Crafts, Physical Education, Music, Self-Cognition G2	Kazakh / Russian
70	CoE Methodological Support for 30 Pilot Schools	Russian

**Amended and Updated Teacher Development Programmes: Lower and Upper Secondary
(for trainers and teachers)**

1. Development Programme for 'Kazakh Language' and 'Kazakh Literature' Teachers Working in Kazakh Schools;
2. Development Programme for 'Kazakh Language and Literature' Teachers Working in non-Kazakh Schools;
3. Development Programme for 'Russian Language' and 'Russian Literature' Teachers Working in Russian schools;
4. Development Programme for 'Russian Language and Literature' Teachers Working in non-Russian schools;
5. Development Programme for 'Mathematics' Teachers;
6. Development Programme for 'ICT' Teachers;
7. Development Programme for 'Chemistry' and 'Science' Teachers;
8. Development Programme for 'Biology' and 'Science' Teachers;
9. Development Programme for 'Physics' Teachers;
10. Development Programme for 'Geography' and 'Science' Teachers;
11. Development Programme for 'History of Kazakhstan' and 'Basic Law' Teachers;
12. Development Programme for 'World History' and 'Basic Law' Teachers;
13. Development Programme for 'Economics and Fundamentals of Entrepreneurship' Teachers;
14. Development Programme for 'Graphics and Design' Teachers;
15. Development Programme for 'Kazakhstan in the Modern World' Teachers;
16. Development Programme for 'Physical Education' Teachers;
17. Development Programme for Regional and School Assessment Coordinators.

Teachers taking the English language course in 2017

Nº	Region	PLAN			FACT			TRAINING									
		Overall	English teachers	Subject teachers	Overall	English teachers	Subject teachers	Overall	Trained	Being trained	Dropped out	English teachers Trained	English teachers Being trained	English teachers Dropped out	Subject teachers Trained	Subject teachers Being trained	Subject teachers Dropped out
1	Astana	108	88	20	108	88	20	108	64	44	0	64	24	0	0	20	0
2	Almaty	209	169	40	204	164	40	204	113	91	0	113	51	0	0	40	0
3	Aktau	135	106	29	135	106	29	133	66	67	2	66	39	1	0	28	1
4	Aktobe	195	144	51	265	207	58	264	101	163	1	101	105	1	0	58	0
5	Atyrau	155	121	34	151	120	31	151	59	92	0	59	61	0	0	31	0
6	Karaganda	229	169	60	212	160	52	212	98	114	0	98	62	0	0	52	0
7	Kokshetau	162	119	43	154	114	40	154	76	78	0	76	38	0	0	40	0
8	Kostanay	151	111	40	149	111	38	148	90	58	1	90	21	0	0	37	1
9	Kyzylorda	254	195	59	274	215	59	274	143	131	0	143	72	0	0	59	0
10	Pavlodar	132	95	37	132	95	37	132	71	61	0	71	24	0	0	37	0
11	Petropavlovsk	129	93	36	128	92	36	128	69	59	0	69	23	0	0	36	0
12	Taldykorgan	428	318	110	428	318	110	426	157	269	2	157	161	0	0	108	2
13	Taraz	278	215	63	278	215	63	278	144	134	0	144	71	0	0	63	0
14	Uralsk	159	121	38	159	123	36	157	72	85	2	72	50	1	0	35	1
15	Ust-Kamenogorsk	273	198	75	75	0	75	75	0	75	0	0	0	0	0	75	0
16	Shymkent	763	578	185	755	569	186	755	301	454	0	301	268	0	0	186	0
	TOTAL:	3760	2840	920	3607	2697	910	3599	1624	1975	8	1624	1070	3	0	905	5

Schools supporting the Curriculum Reforms (Leading Schools) in 2017

№	Centre of Excellence branches	Total number			Leading schools	Number of supporting schools		
		City/region	NIS	Comprehensive schools *		Partner schools	Pilot schools	Basic schools
1	Astana	3	2	84	20	64	1	2
2	Almaty	8	2	201	18	183	1	2
3	Akmola region	19	1	572	57	515	2	2
4	Aktobe region	13	1	416	64	352	2	3
5	Almaty region	19	1	741	74	667	2	3
6	Atyrau region	8	1	192	21	171	2	2
7	East Kazakhstan region	19	2	658	71	587	2	2
8	Jambyl region	11	1	450	33	417	2	3
9	West Kazakhstan region	13	1	384	68	316	2	2
10	Karaganda region	19	1	522	39	483	2	2
11	Kostanay region	20	1	529	49	480	2	2
12	Kyzylorda region	8	1	293	42	251	2	2
13	Mangystau region	7	1	134	26	108	2	2
14	Pavlodar region	13	1	387	19	368	2	2
15	North Kazakhstan region	14	1	517	62	455	2	2
16	South Kazakhstan region	15	2	1020	100	920	2	2
	TOTAL:	**209**	**20**	**7100**	**763**	**6337**	**30**	**35**

Post-course support events by the schools supporting the Curriculum Reforms (Leading schools) in 2017

№	Centre of Excellence branches	lesson observation	consultancy	Training events held by trainers					
				workshops	round tables	master classes	coaching sessions	webinars
1	Astana	198	53	49	31	3	6	1
2	Almaty	146	215	11	43	31	14	
3	Aktau	35	33	5		4		1
4	Atyrau	248	119	24	13	34	40	4
5	Aktobe	285	575	56	33	26	6	6
6	Karaganda	44	263	8	12	17	59	6
7	Kyzylorda	143	223	13	14	31	12	4
8	Kokshetau	117	1795	50	52	8	17	6
9	Kostanay	44	137	5	8	11		7
10	Pavlodar	10	37	17	13	32	14	
11	Petropavlovsk	99	118	9	12	10	9	2
12	Taraz	154	308	4	7	24	18	2
13	Taldykorgan	233	530	12	18	11	7	2
14	Uralsk	52	57	11	21	14	5	1
15	Ust - Kamenogorsk	16	152	11	16	12	4	2
16	Shymkent	222	345	23	54	32		
	TOTAL:	**2046**	**4960**	**308**	**347**	**300**	**211**	**44**

Experience dissemination and popularization events for teachers (regional, national) in 2017

Nº	CoE branch	Event					Events on popularization and dissemination of teachers experience		
		workshops, practicums	master classes, trainings	conferences, online conferences	webinars	online discussion platform, round tables, breakout sessions	forums, festivals	regional contexts	national contexts
1	Astana	5				8		1	2
2	Almaty	8	1			6	1		
3	Aktau	1		1				2	
4	Atyrau	6						1	
5	Aktobe	21	1	2	1	19	2		
6	Karaganda	1		1		5			
7	Kyzylorda	7		2	2	10	1	2	
8	Kokshetau	3				3		1	
9	Kostanay	2		1		4		1	
10	Pavlodar	2	2			5		2	
11	Petropavlovsk	3	1			2	1	1	
12	Taraz	8		1				1	
13	Taldykorgan	5	2			1	1	4	
14	Uralsk	24	1		1	2	3	1	
15	Ust - Kamenogorsk	3	1			3	1	1	1
16	Shymkent	10				2		1	
	TOTAL:	109	9	8	4	70	10	19	3

Methodological and consultancy support events for the Kazakhstani universities and colleges in Kazakhstan that train teachers, 2017.

№	CoE branch	Workshops	Master classes	Forums	Round tables	Conferences	Meetings
1	Astana	3	1		1	1	
2	Almaty	2	2	1	1		1
3	Aktau	2		1			
4	Atyrau	2				1	1
5	Aktobe				1		1
6	Karaganda	2					
7	Kyzylorda	1					2
8	Kokshetau	7					
9	Kostanay	1	2				3
10	Pavlodar	2					1
11	Petropavlovsk						1
12	Taraz				2		
13	Taldykorgan	3					
14	Uralsk	3			1		1
15	Ust - Kamenogorsk	1			1		1
16	Shymkent	2					1
	TOTAL:	**31**	**5**	**2**	**7**	**2**	**13**