

NAZARBAYEV INTELLECTUAL SCHOOLS Autonomous educational organisation

2021 ANNUAL REPORT

NAZARBAYEV INTELLECTUAL SCHOOLS AEO EXPERIENCE DISSEMINATION

Part 2

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ABBREVIATIONS

MES	Ministry of Education and Science of Kazakhstan
NIS	Nazarbayev Intellectual Schools Autonomous Educational Organisation
SCES	State Compulsory Education Standard
UNT	Unified National Testing
ED	Education Department
District/CityED	District/City Education Departments
JSC	Joint-stock Company
NGF	Non-governmental Foundation
LLP	Limited Liability Partnership
KhMAO	Khanty-Mansi Autonomous Okrug
CEFR	Common European Framework of Reference for Languages, a globally recognised standard used to describe achievements of learners of foreign languages
ISSN	an eight-digit code used to identify newspapers, magazines and any categories of periodicals, both printed and electronic
UNESCO	a specialised agency of the United Nations (UN) promoting international cooperation in education, science, and culture
WRO	World Robot Olympiad, competitions for schoolchildren aged 10 to 21 years
LEGO	is a line of construction toys, sets of pieces that can be assembled and connected in many ways to construct a variety of objects
ERP	Educational Resource Portal
MOOC	Massive open online course
MSA	Monitoring student achievements
Lesson Study	a joint reflexive school practice to ensure continuous improvement of teaching and learning
CEP	Centre for Educational Programmes
СРМ	Centre for Pedagogical Measurements
CoE	Centre of Excellence
CITS	NIS Information Technology and Service Centre
ICT	Information and Communication Technologies

INTRODUCTION

The global crisis associated with the COVID-19 pandemic has significantly affected many areas of society, including the education system of the absolute majority of countries. The changes taking place in public life pose new tasks for teachers, the solution of which requires development of new educational practices and dissemination of the most successful ones. Advanced pedagogical experience is the most important means of recording, storing and transferring information on the results of pedagogical activity, acts as an important tool for improving the quality of education.

The ability to disseminate own professional experience is a must for a modern teacher — it is not only a mandatory quality to prove professional competence and compliance with the position, but also a tool for self-development. It would be impossible to achieve this without broad dissemination of alternative forms and methods of conducting educational activities, improving approaches and methods of work into the educational process.

In accordance with the Instruction of N.A. Nazarbayev, the First President of the Republic of Kazakhstan dated April 8, 2011, one of the main strategic directions of the work of Nazarbayev Intellectual Schools Autonomous Educational Organisation is to ensure continuous experience dissemination in general educational schools. The experience dissemination is carried out in accordance with NIS 2030 Development Strategy (decision of the Supreme Board of Trustees dated December 1, 2018), Roadmap on education content renewal for 2014-2028 (approved by the Ministry of Education and Science of Kazakhstan on August 18, 2014), Work plan for 2014-2027 on transition to 12-year education (Order of the Ministry of Education and Science of Kazakhstan No. 358 dated August 21, 2014), NIS 2023 Plan on experience dissemination (NIS Board Decision No. 58 dated December 25, 2020).

The main results of experience dissemination in 2021:

In the period **from August 9 to August 17**, within the framework of the republican August conference of teachers on **Methodological support of teacher practice, for the first time, network sessions were held** online **on all major subjects for all teachers of the country.**

In total, teachers of Intellectual schools, leading and pilot schools delivered 84 webinars, master classes and presentations.

NIS Centres conducted webinars on the development of functional literacy of students in primary school subjects, Science, Music, Arts and Crafts, Physical Education, Kazakh Language, Kazakh Language and Literature, Russian Language, Russian Language and Literature, English



Language, Mathematics, Computer Science, Physics, Chemistry, Biology, Geography, History of Kazakhstan, World History.

Two studios worked in a "live" format in Kazakh and Russian languages for 9 days. Each day of the conference was devoted to a specific academic subject. During the day important topics for teachers were discussed, specific recommendations were given, tasks were solved, tasks for the formation of students' functional literacy were analysed.

The opinions of international experts, recommendations of Y. Altynsarin National Academy of Education on the organisation of the educational process in the new academic year were presented at the network sessions.

The number of views on the YouTube channel of the conference in **Kazakh was 189 196, in Russian - 142 332.**

• Jointly with akimats of Karaganda, Kyzylorda, Akmola, East Kazakhstan, Zhambyl, North Kazakhstan regions, AitasKz JSC, and Bilim Foundation NIS continues the implementation of the Rural School project in 14 rural schools.

• The project on Support to the development of the secondary education system of Atyrau oblast has been implemented.

• Consolidated analytical report on the state of secondary education in Atyrau oblast has been prepared. It provides analytics on all aspects of the school educational process, identifies growth points and directions for the development of the region's education system.

• Together with Bilim Media Group LLP, NIS created Online Mektep digital educational platform, **24 000** lesson scenarios for Grades 1-11 in Kazakh and Russian languages, **550 000** criteria-based assessment tasks were developed. **4 621** schools nationwide are connected to the platform.

• An online platform "School Trainer" has been created to ensure exchange of experience between school trainers and coordinators. More than **12 800 users have registered**. 82 training materials are **available at the website**.

• An online platform "Shamshyrak" dedicated to the 180th anniversary of Y. Altynsarin has been developed to disseminate the best pedagogical experience of teachers awarded with Ybyray Altynsarin badge. 40 490 subscribers are **registered on the site**, **71** videos are **posted** including open lessons, master classes, podcasts, video portraits.

• The planned preparation of the school methodological asset for each school of Kazakhstan is underway. **59 326** school trainers have been trained: 17 517 - on teaching methods and technologies, 7 526 - on research, 9 056 - assessment coordinators, 25 227 - developers of assessment tasks.

NIS continued its work on international dissemination and commercialisation of experience. In 2021, the NIS staff held a series of educational events, meetings, dialogues in terms of professional cooperation and sharing experience with colleagues from Russia (KhMAO-YUGRA, Tatarstan), Kirgizstan, and Uzbekistan.

This report presents the materials on the work done within NIS experience dissemination to the education system of Kazakhstan and the international educational space.



CONTENT OF EDUCATION

1.1

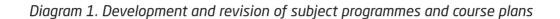
Development and revision of course plans

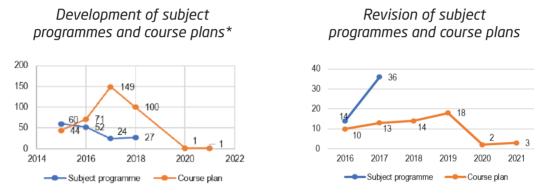
1.1. Development and revision of course plans

Dissemination of NIS experience into the national education system is carried out comprehensively through the renewed education content, the system of pastoral work, introduction of a new assessment system, teacher training and close cooperation with educational organisations of the country.

The process of education content renewal started in the 2015-2016 academic year with

pilot introduction of renewed subject programmes in 30 general educational schools nationwide and ended in the 2020-2021 academic year with the introduction of these programmes in all schools of the country. To understand the scale of disseminating the experience in education content renewal, we present a retrospective overview of the process of developing and improving subject programmes and course plans for the period of 2015-2021 (see Diagram 1).





*In 2015, 3 state compulsory education standards were developed.

In order to ensure effective implementation of subject programmes, methodological support was provided to teachers, methodologists, employees of city and regional education departments. Since 2015, more than 100 trainings on subject programmes have been conducted and attended by **9 000** teachers of the country.

Within the implementation of Digital Kazakhstan State Programme (clause 5.4. Human Capital Development) for 2018-2019, new subject programmes on Information and Communication Technologies for Grades 1-4, Computer Science for Grades 5-9 (MES Order No. 576 dated October 17, 2018), Computer Science for Grades 10-11 within social and human science strand and science and mathematics strand (MES Order No. 105 dated March 7, 2019) were revised and approved.

In 2021, **3 online seminars were held on revising medium-term plans** for Grades 3, 7, 8 in ICT, Computer Science, and 1 **seminar on developing medium-term plans** for Grades 2 in ICT for teachers of the country. Based on the results of the seminars, 1 document was developed and 3 documents were revised. They are available at the portal http://www.smk.edu. kz/Course/Type/30/190?redirectto=1002.

Criteria-based assessment system

To provide methodological support to teachers of secondary schools during the implementation of the assessment system, summative assessment specifications for the 2021-2022 academic year have been revised and updated.

The following materials of summative assessment for the term have been prepared in all subjects of Grades 3, 6, 8:

 1500 test tasks for summative assessment;

- 268 resources for summative assessment test tasks;

- 35 specifications of summative assessment for the term.

In addition, 214 resources have been developed to assess listening and speaking skills in language subjects. In total, during 2021,

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1 914 materials were posted in Criteria-based assessment section of Education Resource Portal.

Final attestation of students

According to the request of the Ministry of Education and Science of Kazakhstan, in the 2020-2021 academic year, 888 examination tasks and 150 resources were developed and reviewed for the final certification of students of Grades 9 (10) of republican schools.

Working meetings on review of examination materials were held, materials for the final

attestation of the 2021-2022 academic year were prepared:

- 64 test specifications;

- 1124 examination tasks, 230 resources for attestation of students of Grades 9 (10) of republican schools;

- 6 804 examination tasks, 1 392 resources for attestation of applicants for Altyn Belgi award - students of Grades 11 (12) of general education and republican schools.



EDUCATIONAL RESOURCES





Educational platforms Educational resource portal (www.smk.edu.kz) 2.3

Library



Publications

Textbooks



2.1. Textbooks

As a part of funding cycle 13 textbooks for Grade 1 in Mathematics, Science, World Understanding, Music, Arts and Crafts in the Kazakh and Russian languages have been revised, as well as Kazakh Language (L2), Russian Language (L2) and ABC Book, Literacy learning (Kazakh) following the changes in the renewed curriculum, particularly to include lexical and grammatical minimum, and to incorporate the Kazakhstani context and current challenges faced by the world.

The quality of textbooks was improved through crosscurricular integration, introduction of an extensive research approach, and involvement of scientific consultants and industry specialists, as suggested by international standards and Kazakhstani concepts (including CEFR, "The Concept of a modern textbook" of the Academy of Pedagogical Sciences, "Kazakh Theory of Music").





Figure 1. Grade 1 Music textbook covers

41 authors have successfully completed training on the platform of the Academy of Pedagogical Sciences as part of training for textbook developers. Special attention was paid to the peculiarities related to students' age and social backgrounds: age, language of instruction, place of residence (town-village), availability of resources,

inclusiveness, personal experience. Music textbook for Grade 1 in Russian was included in the List of textbooks recommended for the use in secondary education organisations, in preschool organisations, including electronic textbooks, according to the order of the Ministry of Education and Science dated June 10, 2021 No. 286 (see Figure 1).





In 2020-2021, in the framework of the renewed content of education in general educational schools, the following textbooks were revised: Kazakh Language (L1), Literary Language (Kazakh), Kazakh Language (L2), Russian Language (L2), World Understanding, Mathematics, Science, Music, Arts and Crafts for Grade 2 in the Kazakh and Russian languages; Mathematics, Science, History of

Kazakhstan, World History for Grade 5 in the Kazakh and Russian languages; Arts and Crafts, Kazakh Language and Literature for Grade 7 (see Table 1).



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Textbook revision	Grade 2	Grade 5	Grade 7	TOTAL			
Number of textbooks revised	15	8	5	28			

Table 1. Textbook revision

At the initiative of the Ministry of Education and Science of Kazakhstan, 75 authors involved in the textbook revision were trained online (72 academic hours) on Methodology of textbook development and improvement of author professional skills at the Academy of Pedagogical Sciences.

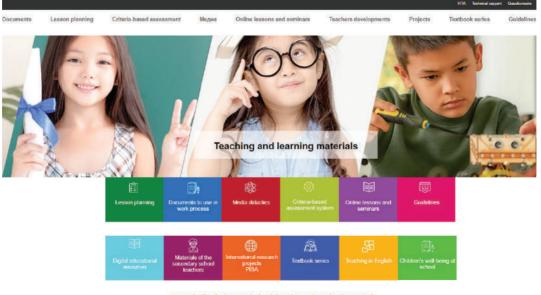
Due to changes in the thematic plan of the Republican Research-to-Practice Centre for Textbook Review of the Ministry of Education and Science for 2021, the revision of textbooks for Grades 5 and 7 was suspended and, consequently, textbooks were not submitted for review.

Textbooks for Grade 2 have passed two stages of subject-specific review. Textbooks in Mathematics, World Understanding, Science, Arts and Crafts in Kazakh and Russian languages, Music in Russian, Literary Reading in Kazakh and Russian Language L2 were submitted for final review, consideration by subject expert commissions. Publication of results is scheduled for February 2022.

2.2. Educational platforms Educational resource portal (www.smk. edu.kz)

In accordance with the instructions of the Chairperson of NIS Board, in 2016, Information Technology and Service Centre (hereinafter - CITS) developed Educational Resource Portal information system http://smk.edu.kz (hereinafter - ERP) to provide methodological support for state school teachers within the framework of secondary education content renewal. All materials available at ERP website are free.

In 2021, due to the completion of phased transition to the renewed content of education, the design of the website main page was updated (see Figure 2). As part of the ERP website maintenance and refinement, the data on visits, views and downloads, and the number of registered users is automatically generated.



prepared within the framework of updating of secondary education content

The system-methodical complex (SMC) was developed to provide methodological support and broadcast the pedagogical experience of the AOE "Nazarbayev Intellectual Schools" to teachers of secondary schools in the country.

Figure 2. New ERP design

As a result of the above improvements, users were provided with the opportunity to monitor the actual ERP statistics online, it is automatically updated every 15 minutes. The system shows the total number of registered users, regardless of the availability of information by region. The output of statistics on the main page allows tracking the dynamics of user visits to monitor the state of the system in a period of high load (see Figure 3). NIS CITS specialists have provided different access levels to users to post and view the materials in various sections of ERP. These functions allowed establishing separate access rights for the corresponding functional roles to publish and view materials in each section. This helped minimise the risks of posting materials in a wrong section.

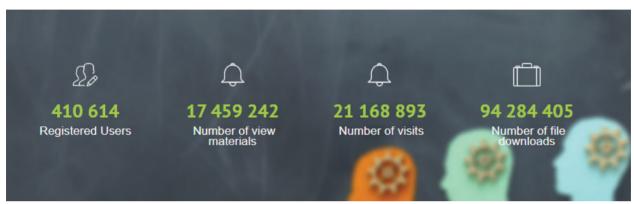


Figure 3. Display of statistical data

The section "Children's well-being at school" was added to the ERP website with integration of appropriate types of materials and a table of filters for quick search (see Figure 4).

arning modules						Add
Type in one word or sever	al words					Count by type
Subject	~	Grades	~	Language	~	Learning modules
School year	~	Active	~	Public	~	Standard operational procedures
					Apply <u>Reset</u>	Reports
An Early Warning system	n forpreventir	<u>g School drop</u>	Система раннего	предупреждения выб	бытия учащи	
Authors: Colleen McLaugh Благополучие детей в шки		avets and Liz Wi	Authors: Коллин Ма Благополучие дете	акЛафлин, Наталья Якове й в школе	щ и Лиз Винтер	

Figure 4. Children's well-being at school

Employees responsible for uploading materials have received the right to publish and edit materials. Viewing, downloading, rating and comments on materials are available for this section. To provide the right to add materials, a new role of Section Editor was introduced. In accordance with this role, users were given the right to publish, edit and replace materials in the section. This role was assigned to the accounts of the employees responsible for content development of the section. The choice of subject and grade of the material is optional.

According to the growth rate in the number of ERP, since January 1, 2021, there has been an increase in the number of registered users (see Diagram 2).

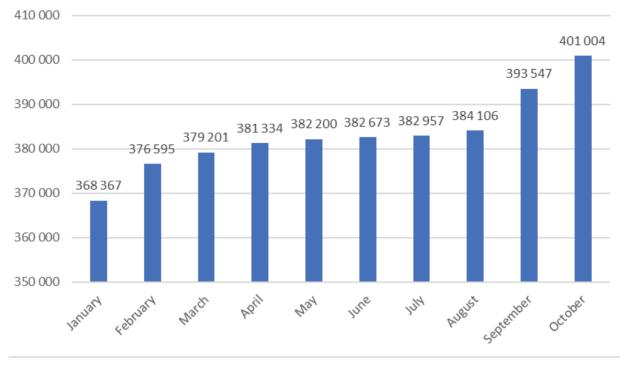


Diagram 2. The growth rate in the number of ERP users over 2021.

In preparation for the new academic year, the cards of the material in the Lesson Planning section were edited due to the change of the academic year. In the result of this work, the current academic year was changed in more than 23 000 resource cards of the above section. Centres responsible for the content development were sent notifications on the need to prepare for the change of academic year and to update ERP materials. Instruction on editing cards with materials was provided.

A call centre and a system for recording user requests to implement technical maintenance of ERP website. According to 2021 reporting statistics, over 800 user requests on access, account activation and password recovery issues were recorded. Since the launch of ERP, specialists have recorded and processed more than 13 000 requests.

So far, more than 400 000 users from among state schools teachers have registered in ERP. 32 637 active users registered in 2021. The number of visits was 20 080 068, views: 16 694 703, downloaded files: 88 198 038, comments on materials: 6 026 (see Table 2).

N₽	Oblast	Visits	Views	Downloaded files	Comments
1	Akmola oblast	1 228 209	1 099 688	5 931 666	229
2	Aktobe oblast	1 110 312	897 643	4 983 877	296
З	Almaty oblast	2 634 223	2 308 612	10 747 494	1 060
4	Almaty	1 230 741	1 071 858	5 324 191	295
5	Nur-Sultan	580 395	475 814	2 756 195	170

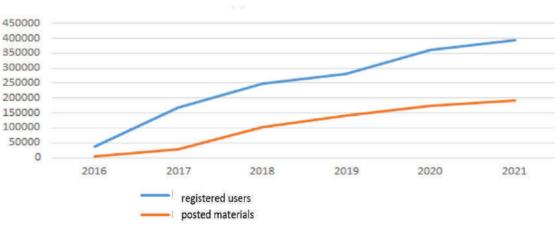
Table 2. Statistics on user activity by regions of the Republic of Kazakhstan

	PART 2	
D	ISSIMINATION OF THE NIS EXPERIENCE	

	TOTAL:	20 080 068	16 694 703	88 198 038	6 026
17	Shymkent	759 125	545 317	2 939 524	185
16	Turkestan oblast	1 843 397	1 469 514	7 420 165	550
15	North Kazakhstan oblast	962 040	887 633	5 069 776	222
14	Pavlodar oblast	784 950	757 592	3 826 781	399
13	Mangystau oblast	648 999	569 615	2 318 701	281
12	Kyzylorda oblast	1 193 313	817 288	4 542 212	360
11	Kostanay oblast	1 075 164	858 723	5 268 680	247
10	Karagandy oblast	1 332 895	1 174 257	6 022 867	474
9	West Kazakhstan oblast	917 305	670 719	4 330 406	307
8	Zhambyl oblast	1 505 857	1 182 618	6 313 601	444
7	East Kazakhstan oblast	1 305 829	1 174 002	6 668 177	391
6	Atyrau oblast	967 314	733 810	3 733 725	116

Total number of registered users – 401 004.

The materials posted on the platform are constantly updated in the light of changes to subject programmes and medium-term plans, and current trends in education (see Diagram 3).



6-years statistics on the use of Educational Resource Portal

ERP provides free access to programmes of renewed education content for Grades 1-11, over **192 771** thousand educational materials in the following sections: Lesson planning, Criteria-based assessment, Textbooks, etc. (see Figure 5).

Diagram 3. Statistics on the use of ERP

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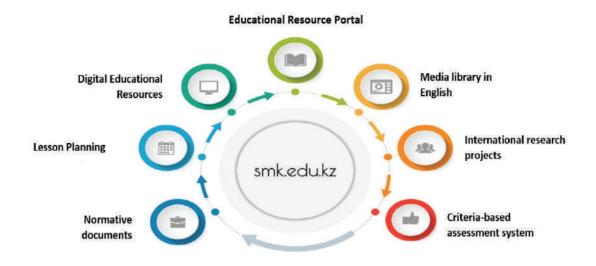


Figure 5. Materials available on the ERP website



There is a discussion platform actively functioning at the ERP website. It allows exchanging experiences, discussing ideas and receiving consulting support.

To develop functional literacy of students, tasks are developed to form reading, mathematical and scientific literacy of students in Grades **7**, **8**, **9**.

Methodological recommendations and videos are available in the section "International and research projects" at http://www.smk.edu. kz/Course/Type/40/1221?redirectto=1212

In the "Media Didactics" section, at http://www.smk.edu.kz/Course/Type/42/ 1272?redirectto=1237, video recordings of 27 webinars on the development of functional literacy of schoolchildren are posted.

In terms of providing methodological and consulting support to teachers and school coordinators at the ERP website http://www.smk. edu.kz moderation of the forum on assessment issues by Grades 1-11 subjects was continued, more than 10 training seminars, master classes, etc. were held.

ONLINE MEKTEP (HTTPS://ONLINEMEKTEP.ORG/LOGIN)

In June 2020, NIS AEO together with **Bilim Media Group** (an innovative company creating new Kazakhstani market of digital learning through the development, localisation and dissemination of educational content, and related technologies and services) launched a joint project to develop digital content for Online Mektep educational platform designed for state schools students (hereinafter – the Project).

The main objectives of this project include ensuring equal access to high quality education, building a trajectory for individual development and monitoring student performance. According to the platform concept, theoretical material has been developed for each lesson in the form of abstracts, diagrams, mind maps, etc. The practical part of the lesson is given in the form of level-based tasks, 9 tasks for primary school and 18 tasks for basic and general secondary school. 3-level tasks (A-basic level, B-advanced level, C-high level) allows consistently and systematically developing the skills required for functional literacy formation.

The website gives detailed information on the level-based lesson management system. Lessons were designed on the task-based learning approach. While performing a task of a certain level a student gets involved in an active learning process. Each task includes such features as "It's important to know" and "Explanation" given in the form of brief theoretical materials that help students to consolidate knowledge and perform the task.

Online Mektep includes a digital educational content in all Grade 1-11 subjects designed according to model course plans in primary, basic and general secondary education for general educational school students. The online platform for state school students was launched on 1 September 2020. In 2020, 24 074 lessons in Kazakh and Russian were developed for Grades 1-11.

On May 19, 2021, NIS together with Bilim Media Group LLP organised an online conference to sum up the results of the work carried out, and to determine development prospects (see Figure 6).



Figure 6. Joint online conference with Bilim Media Group LLP

Further work within the Online Mektep project is aimed at updating the lessons content in the light of changes to the State Compulsory Education Standard, to subject programmes. For example, revised subject programmes ABC Book (Kazakh/Russian), Literacy learning (Kazakh/Russian), ICT are implemented since 2021-2022. In this regard, a number of lesson plans in these subjects have been revised and updated on the Online Mektep platform.

In the 2021-2022 academic year, 608 lessons were developed for Terms 1-4 including ABC Book in Kazakh and Russian, ICT, Computer Science, History of Kazakhstan, World History.

According to the development schedule, as of December 2021, the development of **150** lessons has been completed, and **134** lessons for **Terms 1-2** have been reviewed. By the end of the academic year, **288** lessons will be developed for **Terms 3-4** and **36** lessons in the above subjects will be reviewed.

The online platform for state school students was launched on 1 September, 2020. At the moment, the number of schools connected to Online Mektep is **4 621**, the number of teachers using the platform is **287 121**, the number of students using the **platform is 2 301 130**. According to zero.kz, Online Mektep is one of the most visited sites.

To provide methodological support to teachers, NIS plans to create a separate module in Ustaz section of Online Mektep. It will include in-depth level tasks that will help align the degree of teacher proficiency in techniques and methods of solving standard and non-standard tasks. This will also help create a bank of tasks for further use in the learning process and in preparation for subject Olympiads.

SHAMSHYRAK

As part of experience dissemination, in 2021, Shamshyrak online platform dedicated to the 180th anniversary of Y.Altynsarin was launched in Facebook social network.

In 2021, 71 informational and methodological materials were posted: open lessons, master classes, posts and podcasts about the life and work of Y.Altynsarin.

The online platform allowed broadcasting the best practices of NIS teachers and Kazakhstani mainstream school teachers awarded with the Ybray Altynsarin badge.

More than 40 490 subscribers have been registered, 71 videos have been posted: open lessons, master classes, podcasts, video portraits and live broadcasts.

The online platform made it possible to broadcast the best pedagogical experience of the owners of the badge named Y.Altynsarin among NIS and mainstream school teachers. The website features an online guiz "Experts of the great Teacher's work", an online contest "Top subscriber". To ensure "live communication", the online platform provides live broadcasting, which increases the interest of subscribers and motivates them to keep further cooperation. In Success Stories section, for the first time, there was a live broadcast of interview with Ospan Suleimenov, a teacher awarded by many state awards: Excellent Worker of Public Education of the Kazakh SSR, Honorary Worker of Education of the Republic of Kazakhstan, a badge of Y.Altynsarin, Excellent Worker of Culture of the Republic of Kazakhstan (Nur-Sultan). Shamshyrak online platform will continue its work next year with a wider range of themes aimed at professional development and improvement of educational and training practices of teachers.

2.3 Library

- In the period from February to December 2021, CoE library organised three book exhibitions on the following topics:

- "Ult Ustazy - Ybyray Altynsarin", dedicated to the 180th anniversary of Ybyray Altynsarin. It presented books about the life and work of Y.Altynsarin, selected works, films, archive

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photos and links available through QR codes to "Shamshyrak" online platform.

- "Rukhani zhangyru", consisting of books published within the framework of the project "100 new textbooks in the Kazakh language" on history, sociology, philosophy, psychology, cultural studies, religion, linguistics, media, economics, management, entrepreneurship, innovation.

2.4 Publications

Publication of informational and methodological journal «Pedagogical Dialogue»

Centre of Excellence, in cooperation with experts from the Faculty of Education, Cambridge University, has been publishing informational and methodological journal "Pedagogical Dialogue" (hereinafter – the Journal) in Kazakh, Russian and English since 2012. The Journal registered with the Ministry of Culture and Information of Kazakhstan (Certificate No.12804-Ж) and the International Centre for the Registration of Serials (UNESCO, Paris, France) (ISSN 2308 - 7668).

The Journal aims to highlight the best practices of Nazarbayev Intellectual Schools AEO, the best national and world educational practices, the results of researchers' and teachers' work. CoE provides up-to-date methodological products to NIS employees and its structural divisions, teachers of Intellectual schools and educational organisations of the country. Publishing activities are aimed at promoting the results of research projects, methodological and resource support for teacher training courses and post-course support for teaching staff, information and advertising support for events.

Thematic areas:

- international experience in education;
- school management;
- digital education;
- teaching methods and technology;
- criteria-based assessment;
- education content renewal;
- research in teacher practice



In 2021, CoE published 4 issues of the Journal and an appendix dedicated to the 10th anniversary of the Centre. They focused on the topical issues of school education develop-

ment: Leadership in Education, Values and School Culture, NIS: School of Leadership and Well-being, and the appendix on Leadership in Teacher Professional Development.



The Journal discusses relevant issues including key skills of leaders of the 21th century, the role of teacher-leader in the classroom and outside school, the leader and the team, the qualities of a successful leader, leadership in rural schools. In addition to theoretical studies of national researchers, the Journal presents the review of international research (USA, New Zealand, Israel, Egypt, China, Lithuania and the UK). The authors discuss the peculiarities of the concepts of "management" and "leadership", the specifics of inclusive education, and the ability of teachers to cope with the modern challenges.



The Journal published articles about the work of Y. Altynsarin as the first educator, the first founder of schools in Kazakhstan and the first pedagogical theorist. The issues of values, meant to be life guidelines, are of relevance and contribute to the maintenance of self-learning, self-education and selfdevelopment, the development of professional opportunities, the improvement of personal, social, and moral qualities, are considered. The research conducted by researchers and teachers of Kazakhstan, Great Britain, Russia, India, Egypt, New Zealand present a new perspective on the development of education, the fundamental values and culture of the school of the future.



The appendix to the Journal No. 3 (37) includes articles by NIS teachers and heads on students' research and creative work, the peculiarities of physical and intellectual development of children through hobby clubs, scientific and social projects. Also, it discusses the experience in implementing NIS projects in the educational process of other educational organisations of the country.

Presents the experience of Shanyrak school community, regional research expedition Tugan Elge Tagzym (Bow to the Motherland), project "100 books recommended to NIS students for reading", "2 weeks in the village", "10 days in the company of a parent", "TEDx", "Wikipedia", "Serving the society", "Kazakh songs", "Leadership lessons", etc.



The issue of the Journal is dedicated to the 10th anniversary of Centre of Excellence. It includes articles by the First Vice-Minister of Education and Science, employees of Centre of Excellence, foreign partners and experts, the school director and invited trainer. The results of the Centre's work over the past ten years have been summed up.



The fourth issue of the Journal presents the materials of the XII International Research-to-Practice Conference of Nazarbayev Intellectual Schools AEO "Family, school and community: think and acting for a child". It considers the issue of the future of secondary education in Kazakhstan and Central Asia. Presents the articles of national and foreign experts in education.

In 2021, articles by 106 authors were published in the Journal including 26 articles by foreign practitioners, international experts and consultants, 43 by NIS teachers, 8 by CoE employees, 12 by mainstream school teachers, 4 by representatives of NIS AEO, 1 by a representative of the Ministry of Education and Science, 4 by former CoE employees, heads, 4 by representatives of Nazarbayev University, 2 by representatives of Information and Analytical Centre, 1 by the rector of Y. Altynsarin Arkalyk Pedagogical Institute, 1 by a professor of Kostanay State University.

Articles by scientists and education experts from the following countries have been

published: Great Britain, USA, Russia, Finland, Japan, Colombia, India, Egypt, New Zealand, Canada.

Dissemination of experience in the development of preschool and school education systems through the Journal provides for the formation of a holistic picture of the interrelation between the levels of education, the continuity of the content and methods of teaching and learning, the positive experience of changing pedagogical practice, current problems and ways to solve them.

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Country	Specialist	Master's Degree	PhD	Professor	Candidate of Pedagogical Sciences	Total
Great Britain			З	2	1	6
Finland			1			1
Russia	2			1	2	5
USA	6		2			8
Columbia	2					2
Egypt	1					1
India			1			1
Canada			1	1		2
New Zealand			1			1
Israel			1			1
China	1					1
Lithuania	1					1
Singapore					1	1
Sweden	1					1
France	1					1
Kazakhstan	64	1	1	1	1	68
Total	79	1	11	5	5	101

Table 3. Qualitative composition of authors of articles in the Journal (2021)

Analysis of the qualitative composition of the Journal's authors in 2021 showed the participation of 18 PhD doctors, professors, candidates of sciences, masters, 44 bachelors (see Table 3). A single information space has been created on the pages of the Journal to present the results of fundamental and applied psychological and pedagogical research, methodological recommendations for improving pedagogical practice.

In 2021, 61 information and analytical reviews, research and methodological articles were published, including:

• **34,7%** international researchers and international education experts, which is indicative of high interest of representatives of the world education systems in the changes taking place in Kazakhstani education practice.

• **65,2%** researchers, methodologists, teachers and leaders of Intellectual and general educational schools on practical implementation of criteria-based assessment, new methods and technology of teaching and learning, organisation of research practice and post-course methodological support.

Publication of methodological manuals

In accordance with the Nazarbayev Intellectual Schools 2030 Development Strategy, CoE publishes 70 methodological manuals annually. 563 methodological manuals have been published since 2012.

In 2021, 70 methodological manuals were prepared and published (see Table 4). The presented methodological literature include works by employees of NIS branches and some works in collaboration with NIS teachers.

The published methodological manuals are an important means of professional support for teaching staff. They present a structured practiceoriented material on teaching and learning methods; the contents of the manuals represent a sequence of actions and rules developed building on their own positive experience and the results of action research.

Methodological publications prepared by branches in the cities of Nur-Sultan, Pavlodar, Uralsk, Taldykorgan, Kyzylorda are of professional importance.

	Table 4. Themodological manadis by languages and branches					
No.	Central office/ Branches	Russian	Kazakh	Russian/English	English	Total
1	Nur-Sultan	3	2	1	-	6
2	Aktau	-	1	-	-	1
З	Aktobe	2	2	-	-	4
4	Almaty	3	1	-	-	4
5	Atyrau	1	1	-	-	2
6	Karaganda	2	-	-	-	2
7	Kokshetau	4	1	-	-	5
8	Kostanay	2	2	1	-	5
9	Kyzylorda	1	6	-	-	7
10	Pavlodar	2	2	-	-	4
11	Petropavlovsk	4	-	-	-	4
12	Taldykorgan	3	5	-	-	8
13	Taraz	1	3	-	-	4
14	Oral	3	1	-	1	5
15	Ust-Kamenogorsk	1	-	-	-	1
16	Shymkent	2	6	-	-	8
ΤΟΤΑΙ	L:	34	33	2	1	70

Table 4. Methodological manuals by languages and branches

In terms of language, most methodological manuals published this year are in the Russian language, and the number of manuals in English has decreased (see Diagram 4).



Diagram 4. Methodological manuals by languages

In accordance with the "Regulations on printed methodological literature" of Centre of Excellence, methodological publications are published under a certain heading. A wide range of headings allows authors to select the theme, to determine the aims and objectives of the manual (see Table 5). In 2021, the largest number of manuals were published under the heading "In aid of the teacher". This is due to a number of studies built on the results of action research and proprietary methodology. In this regard, it is important to mention the work "Evaluation Technique: Experts", presented by the CoE branch in Pavlodar. The authors of the methodological recommendations V. Golovintseva, V. Golovanova, Yu. Melnikova received a "Certificate of entering into the state register of copyright objects" for the technique of evaluating oral and written speech in English lessons.

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No.	Name of the heading	Total
1	In aid of the teacher	36
2	In aid of the leader	5
З	In aid of the university, college faculty member	8
4	From the teacher's practice	12
5	Preschool and Primary education	2
6	Research	7

Table 5. Methodological manuals by headings

The relevance of themes of the presented manuals. The content of the publications reflects effective technologies and teaching methods that contribute to the development of lesson planning and research skills. Works on the use of Web-Quest, gamification, and Geogebra programmes in classroom were presented for the first time.

In addition, through 2021, regional and republican printed and online publications published the materials on the CoE activities and works of the CoE employees.



SUPPLEMENTARYEDUCATION3.13.23.3

Pastoral work

Summer school and electives

Robotics

3.1. Pastoral work

Disseminating the experience of NIS libraries

Today, the school library serves as an information centre, with conditions provided for the development of creative and intellectual personality. The NIS libraries actively introduce new approaches and technologies in their work.

The experience of organising the work of NIS libraries is actively disseminated and implemented in mainstream schools. Workshop participants perform practical work together with theory, receive materials of different types and content, provide feedback through reflection. The workshop materials can be further used by the participants in their practice as a guide on particular topics and a forward plan in all areas of the school library work.

Main topics:

• Online educational resources to support the distance learning process.

• Methods of working with learning materials of online platforms for distance learning.

• Active online methods of promoting reading in the school library.

• Innovative library - resource support for teachers.

• Distance learning and networking opportunities.

• Effective methods of using online applications in the school library.

During the pandemic, workshops on disseminating the experience of libraries were held online. This allowed reaching a larger number of participants from remote rural areas. The number of schools involved in the experience dissemination of NIS libraries was 5 906, with 108 workshops, and 10 452 participants.

In addition, in 2021, NIS held offline workshops, to allow participants to learn more about the projects and methods used in Intellectual school libraries. At the request of Republican Scientific and Pedagogical Library under the Ministry of Education and Science NIS organised a republican workshop on the "Ways to effectively use modern technological methods to encourage reading". It was attended by 160 librarians from each oblast. During the seminar, teachers-librarians of Intellectual schools in Almaty and Taldykorgan highlighted the following methods of reading "Blind Date with Book", "Book Hospital", "Book Puzzle", "Kitapty tap", "Learnis". In the practical part of the seminar, participants were given the opportunity to practice all the methods.

At an online seminar on the implementation of the Reading School project, organised by Education Department of the Akimat of Kostanay oblast and attended by 560 people, teachers-librarians of NIS in Kostanay spoke on the topic: Projects of NIS libraries in the reading development. The seminar was broadcast in ZOOM and YouTube. The seminar presented the projects "100 books recommended for students of Nazarbayev Intellectual schools to read" and "READx", traditional Bookcrossing, The Book conquers the world, BookStart events. The possibilities to apply methods and techniques for each project during distance work, create booktrailers, "Campaign 1.2.3", "D.E.A.R. Drop everything and read!", and "BookBingo" game. At the end of the training, the organisers answered all the questions of the seminar participants.

At the Republican August conference of the Ministry of Education and Science, teacherslibrarians of NIS schools delivered network sessions on the following topics:

• "Libraries of Nazarbayev Intellectual schools – innovative methods and approaches in organising the work of the school library as an information resource centre of the school",

• "Development of critical thinking in working with texts",

• "Using interactive online tools in organising events to promote reading",

• "Formation of students' humanity values through library activities".

• Each webinar was followed by master classes whereon librarians of general educational schools got acquainted with and practiced useful techniques and applications on each topic:

• Methodology of SOAPS (Speaker, Occasion, Audience, Purpose, Subject) analysis,

• Organisation of My favorite book online project based on the Padlet board - preparation, publication, results,

• Creating a "Dictionary of values",

• "Short reading" methods of organisation online and offline.

Network sessions of the August conference for teachers of schools participating in the Rural

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School project were held on August 17, 2021. Teacher-librarian of NIS in Ust-Kamenogorsk organised seminars on "Using the opportunities of school libraries for learning" and "Modern methods of organising school libraries". The seminars were attended by librarians of rural schools across the country.

In addition, libraries of Intellectual Schools serve as resource centres for general educational libraries in cities and regions. They have Facebook groups created for each region - a professional community for librarians to share interesting information, events, projects, research, etc. Teachers-librarians of Intellectual Schools moderate the community page encouraging publication of interesting, creative materials.

Dissemination of the innovative experience of NIS libraries supports modernisation of libraries of general educational schools and implies a transition to a whole new stage of development. This will contribute to the formation of a positive image of the library as a significant organisational structure of the school, capable both of providing the educational process with new information and creating opportunities for learning and self-development.

Disseminating the NIS experience in pastoral work.

To develop moral values in schoolchildren, as part of the modernisation of public consciousness "Rukhani zhangyru" and the culture of a healthy lifestyle, the State Programme for the Development of Education and Science of Kazakhstan for 2016-2019 provides for introduction of the Intellectual schools experience in pastoral work into general educational schools.

Thus, in the 2020-2021 academic year, the following seminars and webinars were held for general educational schools:

• "Organisation of pastoral work in general educational schools in the context of the National idea "Mangilik El (Eternal Nation)",

• Workshop on the creation of "Shanyrak" school community,

• Workshop on the organisation of "Tugan elge tagzym" (Bow to the Motherland),

Seminars, workshops on the organisation of pastoral work in the framework of social projects:

- "Serving the society",
- "Two weeks in the village",

- "Take the child to work",
- "10 days at parents' work",

• Master class "Organisation and conducting "Smart Thursday",

• Webinar "Psychological and pedagogical support of students during distance learning",

• Webinar "Methodological recommendations for parents during distance learning",

• Webinar on introduction of new projects on pastoral work: "Continuity of generations", "Poets of the Great Steppe", "Songs of contemporaries", "Proverbs I use in my life",

• Webinar "Organisation of pastoral work in the context of distance learning",

• Webinar "Development of students' emotional intelligence",

• Webinar "The role of summer social practices in the formation of a child's personality".

4 339 general educational schools and 17 979 participants were involved in the dissemination of Intellectual schools' experience in pastoral work.

In total, more than 500 general educational schools nationwide implement the projects of Intellectual schools in pastoral work:

• Curatorship has been introduced in rural schools of Syrym and Chingirlau districts of West Kazakhstan oblast (10 schools),

- Shanyrak Community,
- Expedition "Bow to the hometown",
- "School self-government",
- "100 books" ("30 books", "50 books"),
- "100 Kazakh songs", "100 kuis",
- "TEDx",
- "Smart Thursday",
- "Proverbs and sayings, I use in my life",

• "10 days at parent's work" ("3 days at parent's work" in Zhalagash district of Kyzylorda oblast),

• "Two weeks in the village" ("Three days in the city"),

• Forum "Heirs of the Great Steppe" (Karaganda oblast).

At the August conference NIS deputy directors for pastoral work in all regions held online seminars on "Peculiarities of pastoral work and social projects of Intellectual schools", "Creating a school climate built on values as a factor in supporting learning and the well-being of students". The conferences were attended by

about 600 teachers, educators, tutors and deputy directors for pastoral work. At the end of the seminar, teachers provided their feedback aimed at introducing school projects into the pastoral work of schools.

Also as part of experience dissemination unscheduled events were delivered based on the schools' needs: "Working with parents", "Pastoral projects", "Methods of working with educational materials of online platforms for distance learning", "Organization of pastoral work in general educational schools in the framework of the national idea of "Eternal Nation", "New reality: its influence on the choice of profession", Webinar on pastoral work projects "100 kuis", "100 songs", "Shanyrak" association, "Smart Thursday", "Best student", "Bow to the motherland", Webinar for student teachers on the "Implementation of the pastoral work through curatorship in NIS PhM", "Cyberbullying: how to recognise the danger", etc. The seminars were delivered to 3 173 schools (5 891 teachers).

As part of disseminating the NIS experience in working with children living in dormitories, NIS held seminars for educators of regional family-type children's home, boarding schools, dormitories: "Implementation of the work of the Nazarbayev Intellectual School dormitory educators", "Psychological and pedagogical support of students in the dormitory", "Directions in the work of educators", "Organisation of clubs in the dormitory", "Formation of students' communication skills". Students were involved in a range of practices, which allowed them to manage their emotions, develop communication skills, and creative thinking.

NIS AEO and Kazakhstani Institute of Social Development "Rukhani Zhangyru" signed a contract on the provision of services No. 166/ YUL-77 dated 09.14.2021 to support "Kemel Bolashak" project. As part of the agreement, the deputy directors for pastoral work prepared programmes and conducted 12 webinars in 6 main areas of Rukhani zhangyru the programme for low secondary and high secondary school teachers from November 5 to November 9, 2021:

- Evolutionary development of Kazakhstan,
- Competitiveness,
- Openness of consciousness,

- Cult of knowledge,
- Preservation of national identity,
- Pragmatism.

The organisation of pastoral activities in Intellectual schools is implemented in the framework of Rukhani Zhangyru state programme and reflects the values of Mangilik El national idea.

45 people took part in webinars for high school teachers, the practical part reveals the connection of these projects with the implementation of the Rukhani Zhangyru state programme in teaching and pastoral activities of Nazarbayev Intellectual Schools. The following projects were highly appreciated by the webinar participants: "Serving the Society", "NIS Talks", "2 weeks in the village". They have already been successfully implemented in schools and focus on patriotic education, developing national and universal values.

The main objectives of webinars:

to promote the values of spiritual renewal;

• to improve the system of pastoral work of the school aimed at creating conditions for the development of a competitive personality with high moral qualities, creativity and citizenship;

 to contribute to the development of pedagogical practice of subject teachers and tutors in increasing the positive motivation of teaching as a factor in the formation of the cult of knowledge in students' values.

Dissemination of the Intellectual Schools experience is also implemented through information and methodological support. Special issues of informational and methodological journal "Pedagogical dialogue" on "School leadership and well-being" №3 (37) 2021 and the Republican educational and socio-political newspaper "Bilimdi El" on "NIS pastoral system: combination of unique projects and practices" №31(285) August 17, 2021, described the projects and practices of the pastoral work in Intellectual schools. The issue enables teachers of secondary schools to implement such projects and practices in their schools.

The experience of pastoral work of Intellectual schools has been disseminated internationally into Russia (KhMAO-YUGRA, Tatarstan), Uzbekistan, Tajikistan.

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3.2. Summer school and electives

Intellectual schools hold annual summer schools for students of Grades 1-11 of state schools. This refers to paid elective courses delivered in the period May 31 – June 11 by Kazakhstani teachers and international teachers of Intellectual schools either online or face-toface, depending on the epidemiological situation in the regions.

In 2021, Intellectual Schools developed interesting summer school programmes on relevant topics and in the most popular subjects, including STEM course in Physics, Super Chemists course in Chemistry, Mathematics, Preparation for NUFYPET in Mathematics, Astronomy and Physics, Mobile Application Development, Inventive Problem Solving, IELTS, English language, Copywriting, Financial Literacy.

Depending on the chosen course, students have extended their knowledge of mathematics, physics, chemistry, improved communication skills in English (speaking and writing skills), programming skills, financial literacy, etc.

More than 8 760 students of Intellectual schools (58% of students of grades 1-11) and 889 students of mainstream schools took part in the summer school free of charge. 39 students attended paid summer school. A traditional English language learning course has been organised for mainstream schools students.

3.3 Robotics

NIS works on the development of educational robotics according to the State Programme "Digital Kazakhstan" approved by the Decree of the Government of the Republic of Kazakhstan on 12.12.2017 No. 827, NIS 2030 Development Strategy, approved by the decision of the Supreme Board of Trustees on 01.12.2018, the rules of the Olympiad in robotics, approved by the decision of NIS Board on 16.09.2015 (Protocol No. 48), as amended on 31.08.2016 (Protocol No. 43).

Olympiads

Since 2014, NIS AEO has been the national host of Olympiads in robotics adhering to the rules of the World Robot Olympiad (WRO) in Kazakhstan.

WRO is a competition for schoolchildren and students aged 10 to 21 years. WRO is a competition in using a robotic LEGO constructor in four different categories: Regular, Open, Advanced and Football. In the Regular Category, students are tasked to design and programme a robot that must perform a particular task, the robot's size are limited to the standard of 25x25x25 cm. The participants of the Open Category prepare a project on a given topic. Tasks for the Regular and Open categories change annually and tend to become more challenging. To participate in WRO Football, the team needs to prepare two autonomous robots: a forward and a goalkeeper, who will play against counterpart robots on a special field using a special ball with infrared radiation.

To prevent the spread of COVID-19 coronavirus across the country, the Republic of Kazakhstan continues to implement restrictive quarantine measures. In this regard, annual robotics events were organised and held in distance and online formats. Also, the official website announced the international stage of the World Robot Olympiad WRO-2021 to be held online.

Translation and publication of WRO 2021 Rules

Association of the World Robot Olympiad (hereinafter - the Association) issues new WRO rules on January 15 annually. The rules are issued in English and sent to National hosts. After receiving the rules, they were translated into Russian and posted on the official website of WRO in Kazakhstan http://robotics.nis.edu.kz/ wro-2021 / (see Figure 8).

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Figure 8. WRO official website in Kazakhstan

This year WRO is dedicated to **Power-Bots - The Future of Energy.** In 2021, the teams will create robots that can supply homes with electricity from renewable sources, help convert homes, fight forest fires, and etc. The Olympiad also includes robotic soccer and a competition among unmanned vehicles.

WRO-2021 Regionals

On June 1, 2021, WRO-2021 held regionals online. The Olympiad was held in accordance with the rules and regulations of the WRO-2021 nationals. Participants who perform successfully in the competition will be invited to the national stage.

This year the regional Olympiad was held in four categories:

1. Regular (main category). Participants in this category assembled and programmed a robot to solve a predetermined problem in accordance with participant's age:

 a) the younger group's task is to develop a robot that helps reequip the house. The robot has to replace old bulbs with new energy-saving ones. It must be able to mount solar panels on the roof and install smart home devices. It will help reduce home energy consumption and make the best use of renewable energy sources;

b) the middle group's task is to make a robot that takes the cars at the entrance to the garage and move them to the correct parking space depending on the type of vehicle. After that, the robot should hand out batteries to charge the electric cars;

c) the senior group's task is to create a robot that should supply homes with electricity from renewable sources. Depending on weather conditions, one of the energy sources can be used to supply consumers. Excess energy must be stored in batteries.

2. WRO 2021 Open (creative category) category invites teams to develop a robot or robot model that will help address renewable energy issues. You can choose one of three areas:

- a) energy in your house or your household,
- b) smart parking and charging,
- c) energy balance in our daily lives.

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3. Basic WEDO. This year the aim is to create a robot that can fight forest fires and evacuate people to safe areas. In addition, a robot must plant new trees to replace the burned ones.

4. Future Engineers. Future Engineers is a new category of unmanned vehicles. We want a new format of competition to involve students in research activities and teach a technological approach to solving real-world problems. This season's objective is not to create an unmanned car but it is a race against time. The playing field is a race track with road signs installed. There will not be few cars at the same time. Instead, one car per attempt must achieve the best time by running several laps fully autonomously.

Regionals' Format:

Announcement of additional tasks for the Regular category.

Additional "surprising" tasks were developed for all age groups in the Regular category in addition to major tasks which were announced on competition day at 10:00 AM Nur-Sultan. Assembly of robots for all categories.

 Teams in all categories must provide a link to the demonstration of their assignments by June 2, 2021, 10:00 AM (Nur-Sultan time).

All participants had to prepare a video according to the requirements, post it to an accessible social network and send the link to the video to the e-mail address of the organizer wro@nis.edu.kz until June 2, 2021, 10:00 AM (Nur-Sultan time).

 In addition, teams must provide technical materials for the Open category.

 All submitted projects are reviewed by the panel of judges remotely.

– Award ceremony.

48 teams, a total of 106 children from 9 regions of the country took part at the regional stage of the Olympiad: 15 - from NIS schools and 33 - from mainstream schools.

According to the results of the regional distance Olympiad by the decision of the panel of judges 40 teams (a total of 88 children) were awarded top places. Team members received electronic certificates (see Table 6):

Catagony	Number of teams	Top places			
Category		I	II	III	
Regular WeDo	6	2	2	1	
Regular Elementary	13	5	З	2	
Regular Junior	11	4	З	2	
Regular Senior	8	2	2	2	
Creative Junior	4	2	1	1	
Creative Senior	5	4	1	-	
Future Engineers	1	1	-	-	
Total	48	20	12	8	

Table 6. Olympiad participants by categories

WRO-2021National Final

In accordance with the order No. 267/OD of the Chairperson of the NIS Board dated 28 September 2021, the national stage of the Olympiad in robotics WRO-2021 was organized and held online in the period from 29 to 30 September. The Olympiad was held in accordance with the rules and regulations of the International Robotics Olympiad WRO-2021. A total of 39

teams who won prizes at the regional stage were invited to participate in the Olympiad.

- Total number of participants: 87 including:
- 29 NIS students;
- 58 students of mainstream schools
 Age of participants: 8-17 years old.
- Age of participants. O-17 years old.

In order to organize and conduct the Olympiad online, technical instructions were developed, and September 27 was designated as a day to test the technical preparedness of the teams.

Moreover, additional "surprising" tasks were developed for major categories in all age groups.

According to the results of the Republican Final 19 teams took top places, as well as two teams won the nomination "The youngest participant" and "The most creative project". Team members received electronic diplomas. The results of the Olympiad and general information about the Republican Final were published on the websites:

 https://lenta.inform.kz/kz/world-robotolympiad-2021-ulttyk-chempionatynynzhenimpazdary-anyktaldy_a3845857

http://robotics.nis.edu.kz/wro-2021/ (see Figures 9-12).

сновная информация	Уважаемые участники!					
асписание	Проведение Республиканского этапа олимпиады по робототехнике WRO-2021 запланировано на 29, 30 сентября 2021 года в режиме онлайн. Команды, занявшие I, II, и III призовые места на дистанционных					
частники	региональных соревнованиях допущены к участию на Республиканский этап.					
	Инструкция					
езультаты	Техническая подготовка помещения для соревнования и оборудования					
воты	Для участия вам необходимо:					
	1. обеспечить устойчивое интернет-соединение. Не менее 2 Мбит/сек.;					
	2. скачать и установить на ноутбук приложение Zoom;					
	войти/создать учетную запись Zoom;					
	 проверить качество звука и видео в настройках Zoom; 					
	 использовать приложение таймер (любое приложение, сайт). Поместите таймер так, чтобы было видно 					
	четкое изображение;					
	6. обеспечить в помещении для соревнования хорошее освещение.					
	Каждой команде будет необходимо подключить 2 камеры.					
	1 — Общий вид на комнату (может находиться несколько участников, но не тренер, камера должна					
	транслировать изображение непрерывно)					
	2 — Вид на поле (желательно сверху).					
	Вам необходимо завести два аккаунта, чтобы транслировать два изображения. Будьте готовы прислать					
	фотографии спорных ситуаций с дополнительной мобильной камеры и иметь возможность приблизить					
	камеру. Также будьте готовы по просьбе судьи включить демонстрацию экрана. Просьба к участникам в					
	целом — не разговаривать на темы, не касающиеся проведения Олимпиады.					
	Необходимо приготовить:					
	1. измерительные элементы (Куб. 25х25х25см. из подручных материалов (пластик, картон и т.п. и линейка					
	для замера куба).					
	2. приложение таймер;					
	3. игровые элементы для поля.					
	Технический день:					
	Дата проведения: 27 сентября 2021г., с 9.00 до 20.00. В технический день команда ОБЯЗАНА выйти на					

<image>

Figures 10,11,12. WRO-2021National Final

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WR0-2021 International Final

In accordance with the order № 335/OD of the Chairperson of the Board of Nazarbayev Intellectual Schools AEO dated 5 November 2021 Kazakhstan's teams took part in the Robotics Olympiad WRO-2021 during the period from 18 to 21 November.

The list of participants included 12 students: 5 - from NIS and 7 - from mainstream schools (see Table 7).

N₽	Name	School	Category	Trainer
1.	Shyngysbek Balgabay	students of NIS Chemistry and	Secondary	Yasynzhan
2.	Altair Zhambyl	Biology in Almaty	senior	Shakan
З.	Aldiyar Pazylov	students of NIS of Physics and	Creative Senior	Bakhytgul
4.	Daulet Mukhanov	Mathematics in Nur-Sultan		Kazhykenova
5.	Amina Rakhimbergenova			
6.	Aryan Kadyrov	students of the training center	Basic secondary	Aigerim
7.	Bernar Berdaliyev	"Lessons.kz"		Yerkabayeva
8.	Kristina Kisseleva	students of the private primary	Basic secondary	Oleg Kisselev
9.	Mark Biryukov	school "Ak-Niet"		
10.	Petr Moroz			
11.	Dauzhan Beketov	students of the educational center	Creative Junior	Tom Noah
12.	Kirill Ostrovsky	"International Robotics Academy"		

Table 7. WRO-2021 participants

The Olympiad results are available on website: http://robotics.nis.edu.kz/wro-2021/



TEACHER PROFESSIONAL DEVELOPMENT IN KAZAKHSTAN

4.2

4.1

4.4

Teacher professional development programmes

Training trainers

4.3

Kazakhstani teacher professional development

Monitoring the course training quality

4.5

Post-course support of teaching staff

4.1. Teacher professional development programmes

In 2021, CoE developed 18 professional development course programmes:

 14 educational programmes for in-depth training courses for teachers agreed with the Expert Council of the Ministry of Education and Science of the Republic of Kazakhstan (Protocol of the Expert Council meeting No.31 dated 10 June, 2021, letter of the Ministry of Education and Science of the Republic of Kazakhstan No.18-6/765 dated 14 June, 2021);

 1 educational programme of the asynchronous professional development course on essay writing;

 1 educational programme of the asynchronous professional development course on reading literacy;

 2 professional development programmes in inclusive education.

24 educational programmes were revised to integrate into the online learning:

1. Educational programme of professional development courses for heads of preschool organizations;

2. Educational programme of professional development courses for teachers "Development and review of assessment tasks" in Geography;

 Educational programme of professional development courses for teachers "Development and review of assessment tasks" in Computer Science;

4. Educational programme of professional development courses for teachers "Development and review of assessment tasks" in primary school (2 programmes);

5. Educational programme of professional development courses for teachers to renew the content of education (16 subjects);

6. Educational programme of professional development courses for teaching staff "Applied Research Methodology";

7. Educational programme of professional development courses for school leaders (9-month);

8. Professional development programme "Effective Learning".

Massive open online courses

The use of distance learning technologies has gained widespread appreciation due to its accessibility and usability. In 2021, CoE developed 2 massive online courses:

«Writing an essay»

 – «Reading Laboratory - we read, understand, and apply»

 The courses are taught in asynchronous format, and course materials are available at www.sdo.cpm.kz

The course was implemented among NIS teachers and 14 mainstream schools as part of "Rural School" project. Both courses will be available to the mass audience in 2022.

4.2. Training trainers

Training teachers to become trainers

The priority area of the CoE activities is to train teachers to deliver professional development courses for Kazakhstani teachers on issues relevant to training, development and pastoral work.

In 2021, 567 trainers (see Table 8) were trained in the following educational programmes:

25 - Applied research methods

55 - Conflict management in educational organizations

80 - Development and review of assessment tasks in primary school subjects

61 - Effective management in preschool organizations

321 - Development of subject competencies

25 - Innovative school management

N₽	Programme	Number of trainers	including		
			CoE	NIS	GEO
1	Applied research methods	25	25		
2	Conflict management in educational organizations	55	55		
3	Development and review of assessment tasks in primary school subjects	80	17		63

Table 8. Training teachers to deliver professional development courses

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4	Effective management in preschool organizations	61	16		45
5	Development of subject competencies (by subject)	321	71	71	179
6	Innovative school management	25	21	4	
	Total	567	205	75	287

A share of trainers among the teaching staff of general educational organizations and Nazarbayev Intellectual Schools is 64%. Many years of experience in involving teachersleaders of mainstream schools and Nazarbayev Intellectual Schools show it has a positive effect on the training of Kazakhstani teaching staff as trainers use examples and cases from school practice. It contributes to a better acquisition and understanding of the course content. Teacher-trainers gain experience working with adult audiences and use these skills to improve their own professional practices in educational organizations.

Training teachers of Kazakhstani mainstream schools

In order to create a professional development environment in school where teachers are trained based on the peer-to-peer principle, the CoE created a methodological community including coordinators for implementing criteria-based assessment, school trainers in methodology and technology, school trainers in research, and developers of the assessment task review.

In 2021, 11 000 school trainers were trained including 2 000 on research and 9 000 on task development and assessment review. A total of 59 326 teachers were trained for each school from 2016 to 2020 which is 15% of the total number of teachers in general education organizations (see Table 9).

Table 9. Creating a methodological	community out o	f toachor-loadors
Tuble 5. Cleating a methodological	community out o	j leuciiei-ieuueis

	including				
Total school trainers	School coordinators in criteria-based assessment	School trainers on learning methods and technologies	School trainers on research	School developers Experts in assessment	
59 326	9 056	17517	7526	25227	

The activities of the methodological community are regulated by the Ministry of Education and Science of the Republic of Kazakhstan (Instructional letter "On the professional development of teaching staff in mainstream schools "Reflection in practice", 2016, Instructional letter on the integration of criteria-based assessment in mainstream schools by coordinators, 2016, Instructional letter "On the activities of school trainers on research", 2018).

The training of school trainers allows to teach a required number of professionals who can promptly solve problems that can arise in students' learning and assessment.

4.3 Kazakhstani teacher professional development

In 2021, the Ministry of Education and Science approved the plan for teacher professional development (letter No.8-18-6/337-// dated 29 January 2021).

The planned number of teachers is 42 700, including:

- 7 495 teachers from preschool education;

- 33 947 teachers from secondary education;

- 1 258 teachers from technical, vocational and higher education.

In 2021, CoE fulfilled its plan to improve the professional qualification of the country's

teachers under the state order. 42 700 teachers completed the courses and 497 teachers started the courses for leaders of mainstream schools in 2020.

The total number of teachers trained in 2021 was 43 197.

In 2021, CoE delivered online courses for 42 562 (99,7%) teachers due to the epidemiological situation and the resolution of the chief public health officer of the Republic of Kazakhstan. During the summer holidays, 135 teachers from Almaty oblast took offline courses held in compliance with all sanitary and epidemiological requirements.

Online training courses were delivered on the educational platform of Centre of Excellence sdo. cpm.kz and via ZOOM.

Electronic platforms enabled trainers to deliver webinars, hold discussions in pairs and groups, daily post training materials and assignments for independent work, record the webinar and share it with participants and give feedback to trainees in a written form.

In 2021, CoE continued to implement the professional development programme for teachers of preschool organizations within the new conditions of distance learning. 7 495 teachers of 3 categories completed the training courses:

- 2 000 heads of preschool organizations;

- 3 495 kindergarten teachers;

- 2 000 teachers of preschool organizations preparing children for school.

As part of the professional development programme for secondary school teachers, the CoE conducted leadership and management courses for 2 002 leaders of mainstream schools, of which 497 trainees completed the course and 1 505 completed the online training and are putting what they learned into practice.

CoE delivered training courses for 340 educators by explaining the paths of social development outlined in the works of the First President of the Republic of Kazakhstan – Yelbassy to develop professional competencies of managers and specialists of district and city education departments.

In 2021, CoE conducted online courses aimed to develop teaching and learning methods and technologies as part of the "Effective learning" programme for 800 mainstream school teachers.

To disseminate the NIS experience and integrate a new assessment system in schools,

CoE conducted courses on subject competences for 10 700 subject teachers and courses on the development and review of assessment tasks for 9 000 subject teachers.

It also delivered training courses on the programmes for "Development of Science and Reading Literacy and Creative Thinking" and "Development of Mathematics and Reading Literacy and Creative Thinking" for teachers of Mathematics, Computer Science, Chemistry, Biology, Physics, and Geography. 6 602 school teachers completed the courses.

In addition to courses for teachers, CoE conducted short-term courses for 1 000 psychologists, 1 000 educators on career guidance, 2 000 school trainers on lesson study, and 1 000 teachers on conflict management in educational organizations.

CoE continued to develop professional competences of the faculty staff in higher educational institutions and colleges which is one of their strategic areas.

In total, 30 faculty members of the higher educational institutions and 430 faculty members of colleges completed the courses on teaching and learning methods and technologies.

200 faculty members of the higher educational institutions and 200 faculty members of colleges took a course designed to develop their professional and research skills.

To develop functional literacy of Grade 10-11 students in state colleges, CoE delivered professional development courses on the programmes for "Development of Science and Reading literacy and creative thinking" and "Development of Mathematics and Reading literacy and creative thinking" for 398 mainstream schools teachers.

Educational professional development programmes for preschool teachers

In 2021, CoE continued to implement educational professional development programmes for preschool teachers lasting from 15 to 20 days online.

There were 3 categories of participants: preschool principals - 2 000, kindergarten teachers - 3 495 people and teachers from mini-centres and preparation classes - 2 000 people. In total, 7 495 teachers (7,8% of the number of preschool teachers (95 860 teachers) (see diagrams 5,6,7).

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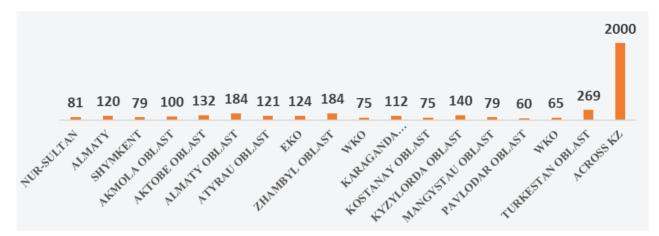




Diagram 6. Number of preschool teachers in the training courses in 2021

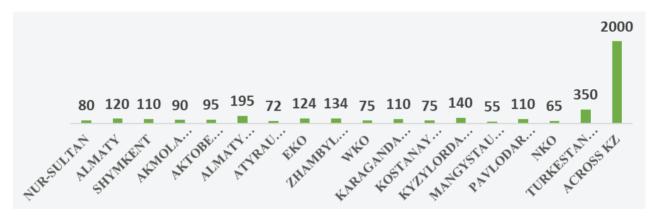
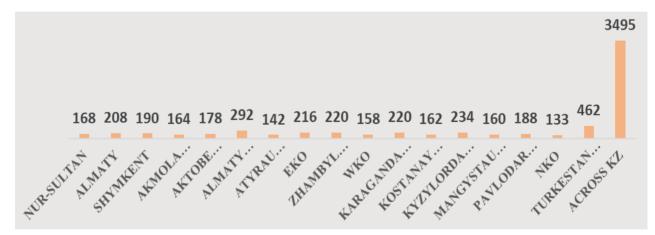


Diagram 7. Number of preschool teachers in the training courses in 2021



Professional development courses for secondary school teachers

In 2021, CoE delivered professional development courses for 34 444 secondary school teachers. During the summer holidays, 10 700 teachers of Kazakhstani schools completed courses for the development of subject competencies: 10 565 teachers online and 135 teachers offline (in a pilot mode) to test new programmes. The courses lasted 10 academic days (see Figure 13).

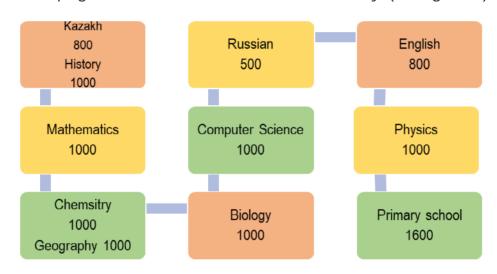
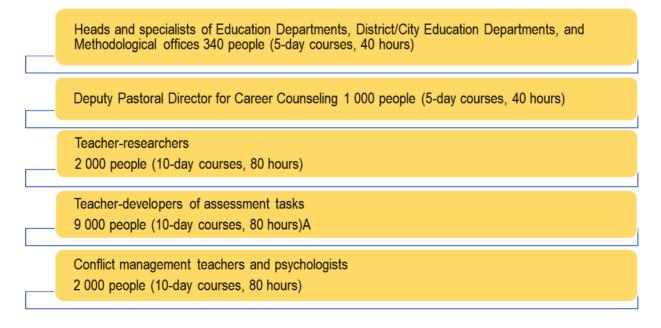


Figure 13. Professional development of secondary school teachers

The programmes for the development of subject competencies were designed to develop teachers' knowledge in a subject area, a high level of orientation in modern studies relevant to the subject area, personal teaching methods, and to improve pedagogical skills due to new conditions. specialists of education departments, district/city education departments, methodological offices, teacher-researchers, teachers-developers of tasks against a new assessment system, conflict management teachers and school psychologists (see Table 10):

In addition, short online courses were held for secondary school teachers, heads and

Table 10. Short online courses for secondary school teachers

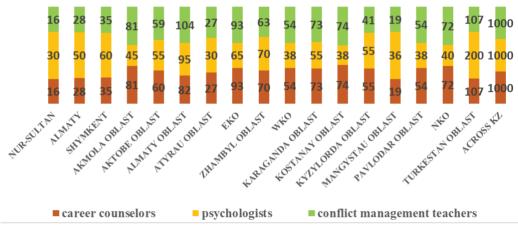


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The programme for heads and specialists of education departments, district/city education department is aimed at explaining to teachers the works of the First President of the Republic of Kazakhstan – Yelbasy and new guidelines for the formation of national identity, Kazakhstani patriotism, and cultural development. In total, 680 teachers were trained including 340 teachers in 2020 – 2021. In 2021, as part of the NIS initiative to disseminate its experience and best practice, the CoE continued to train teachers and school psychologists on career guidance and began to implement a new conflict management programme for teachers. Each programme reached 1 000 Kazakhstani educators (see Diagram 8).

Diagram 8. Participants of the courses for teachers-career counselors, conflict management teachers and psychologists in 2021



In 2021, **2 000 school trainers** were trained as a part of educational programme for the professional development of mainstream school teachers **«Research in Teacher Practice»** (see Diagram 9). teaching – conducting lesson study and research in action within the school and school network to better analyze teaching activities, improve observation skills, reflect on learning outcomes, and process and publish research data.

The content of the research skills development programme focuses on research in

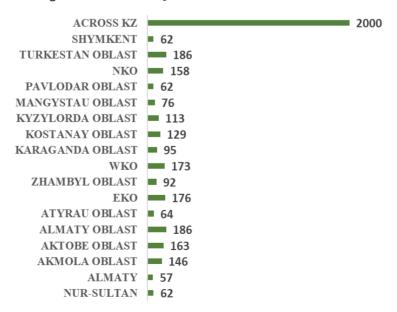


Diagram 9. Number of school research trainers in 2021

In total, in 2018-2021, 7 526 teachers representing 2,3% of the overall number of mainstream school teachers completed a lesson study programme: in 2018 – 1 526 teachers and in 2019-2021 – 2 000 teachers.

As part of the introducing a new assessment system in all schools, CoE and its branches organized courses on the "Development and Review of Assessment Tasks" for 9 000 subject teachers (see Figure 14).

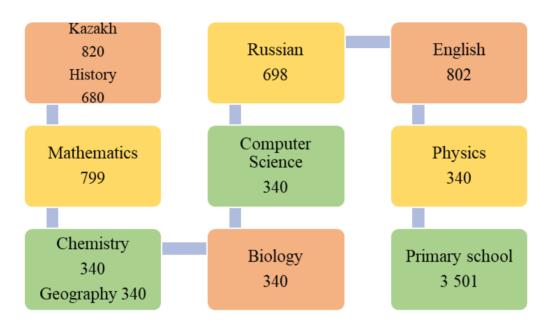


Figure 14. Teachers completed the course "Development and review of assessment tasks"

Subject teachers learnt the main approaches to the development and review of assessment tools (tasks), expanded their understanding of the types and characteristics of tasks used in the assessment process, and improved their skills in developing and reviewing assessment tools.

Over the four years of the programmes, **25 227** subject teachers have been trained: **4 255** in 2018, **4 256** in 2019, **7 716** in 2020, and **9 000** in 2021 which is 8,2% of the overall number of subject teachers in the country (308 135 people according to the National Collection "Statistics of the Education System of the Republic of Kazakshtan" IAC 2021).

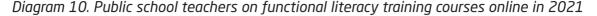
As part of the development of students' functional literacy, CoE held professional development courses for teachers of Mathematics, Computer Science, Chemistry, Biology, Physics, and Geography following the programmes "Development of Science and Reading Literacy, and Creative Thinking of Schoolchildren" and **«Development of Mathematical and**

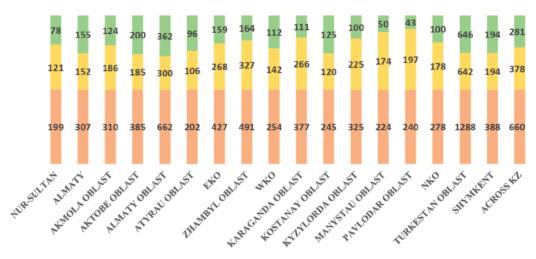
Reading Literacy, and Creative Thinking of Schoolchildren».

6 602 school teachers completed the courses (see Diagram 10).

The programme consisted of five modules including online overview lectures on class topics, theoretical presentation material, and practical exercises for consolidation. During the course teachers learned how to plan lessons using examples from international studies on the development of functional literacy and creative thinking and self-developed activities and studied approaches and methods that promote Mathematics/Science and reading literacy and creative thinking among students

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■Across KZ ■Sciences ■ Mathematics

Educational programme on teaching and learning methods and technologies "Effective learning"

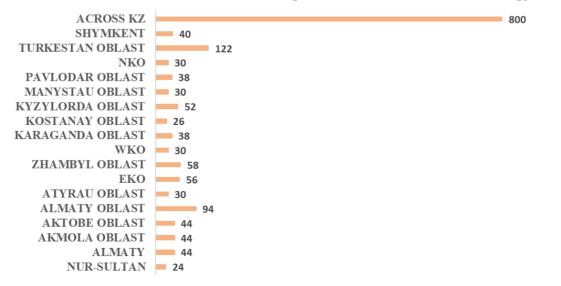
According to the rules for organizing professional development courses for teaching staff approved by the order №95 of the Ministry of Education and Science of Kazakhstan dated 28 January 2016, CoE annually delivers long-term courses introducing renewed levelled programmes. In 2021, the "Effective learning" course was launched.

The content of the training courses in teaching and learning methods and technologies is meta-disciplinary: teachers are trained to use active learning techniques to promote critical thinking, age-appropriate lesson planning, and ICT in the classroom. According to the monitoring and evaluation of CoE programmes, the effectiveness of these courses is evidenced by a required number of certified teachers who have a deep understanding of classroom improving practices and have developed the skills to actively work with colleagues and share pedagogical ideas.

In 2021, 800 teachers completed the course "Effective learning". The training was held online (see Diagram 11).

In the period from 2012 to 2021, 74 926 teachers (22,5% of the overall number of teachers in Kazakhstan) have completed levelled courses: 35 130 (10,8%) people in CoE and in the period from 2012 to 2018, 39 796 (11,7%) people in Orleu NCPD JSC.

Diagram 11. Number of teachers in the CoE training course for methods and technology in 2021



A total of **35 130** teachers completed training courses in held by CoE and its branches over the nine years of the programmes (2012-2021) (see Table 11).

					Numb	er of tr	ained te	eachers				
Nº	Programme		including									
IV=	Trogramme	total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1	Third (basic)/ Effective learning	11 501	1 053	1 147	1 004	1 949	1 781	1 312	1173	1 282	-	800
2	Second (basic)/ Teacher leadership in school	7 613	-	997	999	173	1 420	1 363	1 061	800	800	-
З	First (advanced)/ Teacher leadership in the teaching community	16 016	-	3 093	3 101	2 871	2 995	2 940	514	502	_	-
	TOTAL:	35 130	1 053	5 237	5 104	4 993	6 196	5 615	2 748	2 584	800	800

Table 11. Number of teachers trained according to the revised levelled programmes in 2012-2021

Professional development courses for heads of general educational organizations of Kazakhstan

Professional development programmes for heads of general educational organizations are implemented at long-term courses by CoE and its branches in Nur-Sultan, Almaty, Shymkent and Uralsk.

In 2021, CoE held training sessions in the following areas:

- professional development programme for heads of general educational organizations (a 9-month programme) for 998 teachers: 497 people began training in 2020 and completed the course and 501 people completed distance learning and are doing an internship in school integrating the material they learned; they plan to complete the course in 2022 (see Diagram 12);

- "Innovative School Management" programme for 1 004 people who completed distance learning and are doing an internship at school. The full course is scheduled to be completed in 2022.

The courses are aimed at developing the key competencies of today's leaders in leadership and management, strategic planning and forecasting of educational processes taking into account the school size.

From 2014-2021, 8 141 school leaders were enrolled in long-term education leadership and management courses (see Table 12).

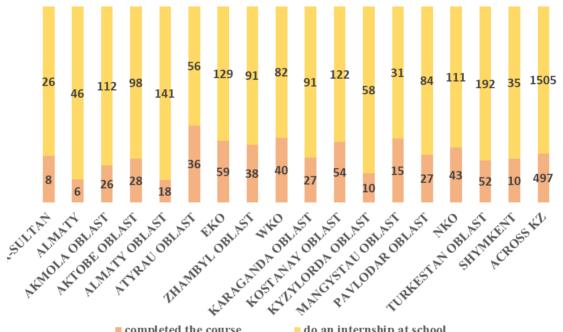
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	Number of trained teachers									
Cotogory of	Total		including							
Category of trainees		2014	2015	2016	2017	2018	2019	2020	2021	
Full course compl	etion									
School leaders	6 636	583	660	1 396	1 535	249	1 188	528	497	
Blended learning (school internship) completed in 2021.										

Table 12. Number of school leaders at the CoE courses in 2014-2021

School leaders	1 505								1505
TOTAL:	8 141	583	660	1 396	1 535	249	1 188	528	2 002





completed the course

do an internship at school

Training programmes for university and college teaching staff

CoE has been actively conducting professional development courses for teaching staff of higher educational institutions and colleges for seven years.

NIS experience dissemination in higher educational institutions and colleges as part of the CoE courses is aimed at developing continuity between the levels of education (preschool, secondary, vocational and higher education) and the quality of teacher training in new conditions.

Professional development courses for university and college teaching staff in 2021 are organized online in two areas:

- teaching and learning methods and technology;

- professional and research skills development

In addition, in 2021, CoE continued online courses in functional literacy programmes for Science and Mathematics in high school. The training lasted seven days and 56 academic hours online on the SDL and ZOOM platforms (see Diagram 13).



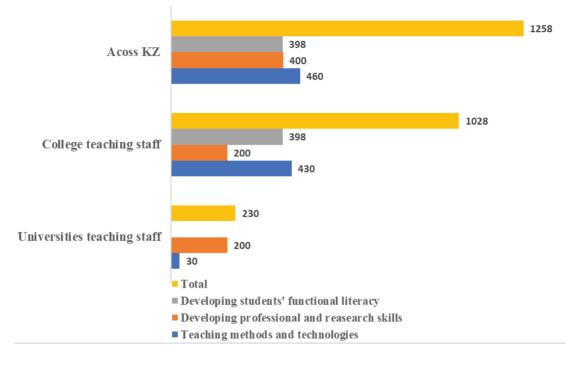


Diagram 13. Number of university and college teaching staff trained by CoE in 2021

Over seven years (2015-2021) of cooperation between CoE and the nation's public universities and colleges, **7 512** educators were trained, including **2 403** from universities and **5 109** from colleges (see Table 13).

Table 13. Number of the university and college teaching staff trained by CoE in 2015-2021

		21				By year			
N≏	Educational organization	2015-2021	2015	2016	2017	2018	2019	2020	2021
1	university	2 403	298	284	155	572	431	433	230
2	colleges	5 109	0	250	150	552	429	2700	1028
TOTAL		7 512	298	534	305	1124	860	3 133	1 258

Evaluation as part of professional development courses for teachers

CoE evaluates teachers against seven programmes for professional development courses to determine the level of excellence and certify teachers. Portfolios and presentations containing reflection on the planning and application of new approaches to teaching and assessment are submitted for evaluation.

In 2021, CoE evaluated the materials of 23 267 teachers, of whom 21 164 (90,96%) were recommended for certification (see Table 14).

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Evaluated Programme Certified Effective learning 800 593 (74,12%) Training courses for mainstream school leaders 498 434 (87,2%) Courses on the renewed content of secondary education 5 568 5 176 (92,96%) Development and review of assessment tasks by subject 9000 8 091 (90%) Training courses for teachers of preschool organizations 3 237 (92,62%) 3 4 9 5 Training courses for teachers of preschool organizations 2 0 0 0 1813 (90,65%) Training courses for heads of preschool organizations 1 906 1 820 (95,5%) Total* 23 267 21 164 (90,96%)

Table 14. Number of teachers by the course programmes

Additionally, teachers previously not recommended for certification were evaluated (see Table 15).

Programme	Evaluated	Certified
Effective teaching	18	8 (44,4%)
Training courses for mainstream school leaders	9	6 (66,7%)
Courses on the renewed content of secondary education	328	288 (87,80%)
Development and review of assessment tasks by subject	233	202 (86, 6%)
Training courses for teachers of preschool organizations	145	97 (66,90%)
Training courses for teachers of preschool organizations	28	25 (89,29%)
Training courses for heads of preschool organizations	33	33 (100%)
Total*	794	659 (82,99%)

Table 15. Number of teachers re-evaluated by subject programmes

Changes were made in the regulatory and procedural documents on assessment due to the transition of mainstream school leaders to a distance learning. Rules for organizing and conducting summative assessment were developed and approved during the professional development course for Effective Management in Preschool Organizations for preschool leaders. Video instructions for assessing the presentation of preschool leaders were made in the Kazakh and Russian languages.

In 2021, an electronic assessment portal (http://portal.cpi-nis.kz/) was optimized and

expanded. It enables teachers and leaders:

to register for assessment on their own;

to see the status of teacher uploads for assessment;

to bulk upload teacher materials,

 to post electronic grades following the assessment results.

The trainers of CoE and Orleu NCPD JSC were provided with a methodological support by explaining the assessment procedures, standardize approaches and develop a common understanding of the assessment criteria for teachers' materials:

– 3 webinars on the renewed content of secondary education for preschool teachers;

- more than 90 individual and group consultations related to all training programmes.

Teachers' portfolios are checked for plagiarism using Turnitin to assess trainers and give them a feedback (see Table 16).

Programme	Number of reports	Formative assessment	Summative assessment
	verified	plagiarism detected	plagiarism detected
Effective learning	2454	404 (16,46%)	307 (12,51%)
Training courses for mainstream school leaders	3042	673 (22,12%)	353 (11,60%)
Training courses for teachers of preschool organizations	3640	745 (20,47%)	216 (5,93%)
Total*	9136	1822 (19,94%)	876 (9,59%)

Table 16. Plagiarism check results by programme

According to the formative assessment results, the highest percentage of borrowing was found in the materials of trainees who participated in the course for Effective learning -16,46%, courses for general education leaders - 22,12%, and courses for preschool teachers - 20,47%. Meanwhile, the summative assessment showed the plagiarism rate in the materials of trainees who attended the course for Effective learning was 12,51%, the course for general education teachers - 11,60% and for preschool teachers - 5,93%.

In order to support the principles of academic integrity and to avoid plagiarism, as well as to explain the use of sources of information in the materials submitted for assessment, CoE delivered a webinar for trainers and trainees of professional development courses.

Analysis showed that 9,31% of teachers' materials were rated "unsatisfactory", 87,19% - "satisfactory", and 3,51% - "good" (see Table 17).

Таблица 17. Результаты оценивания материалов	в педагогов в разрезе программ обучения
--	---

		Total	Grade						
Training Centre	Programme		Unsatis	factory	Satis	factory	G	ood	
Centre of Excellence PE of Nazarbayev Intellectual Schools AEO and its branches	Effective learning	818	217	26,5%	575	70,29%	26	3,1%	
	Training courses for mainstream school leaders	507	67	13,3%	409	80,7%	31	6,2%	

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	Training courses for teachers of preschool organizations	3 640	306	8,4%	3290	90,38%	44	1,22%
	Training courses for teachers of preschool organizations	2 028	190	9,37%	1820	89,74%	18	0,89%
	Development and review of assessment tasks	9 233	940	10,2%	7716	83,6%	577	6,2%
	Training courses for heads of preschool organizations	1 939	86	4,4%	1 803	93%	50	2,6%
Orleu NCPD	Courses on the renewed content of secondary education	5 896	432	7,32%	5366	91,02%	98	1,66%
Total*		24 061	2238	9,31%	20 979	87,19%	844	3,51%

The materials of 165 teachers training against the programme "Development and Review of Assessment Tasks" are available on the educational resource portal, section "Materials of mainstream school teachers" and are recommended for use by all teachers of the country.

4.4 Monitoring the course training quality

CoE monitors the quality of disseminated teaching experience by studying teachers' real professional challenges and needs in generalizing and systematizing best practices before the course and compliance of the content of education with the requests and expectations during the course. After the course is completed, CoE monitors whether the best pedagogical experience was successfully integrated in everyday practice.

These studies have been conducted annually since 2012. A total of 34 studies were conducted for 2021. In each of them, the sample of respondents is either representative or 100%.

The total number of respondents by research type is shown in Table 18.

Nº	Type of research	Respondents	Number of studies
1.	Before the course	35 985	16
2.	During the course	35 221	10
3	After the course	40 443	8
TOTAL:		111 649	34

Table 18. Coverage of respondents according to the results of monitoring studies in 2021.

Respondents:

- NIS leaders and teachers;
- leading school leaders and teachers'
- teachers including school trainers;

heads, methodologists and teachers of preschool organizations;

 heads of general educational organizations;

- CoE trainers;
- students;
- parents;

faculty members of universities and colleges;

 representatives of the Committee for Control in Education and Science of the Ministry of Education and Science of Kazakhstan.

The results of the monitoring studies are published annually in books and brochures of the series "Monitoring Studies of the Nazarbayev Intellectual Schools Centre of Excellence" (ISBN 978-601-7780-05-04).

In total, 12 books and 5 brochures were published in 2021.

The scientific basis for monitoring studies are the results of major and longitudinal research conducted by authors acknowledged in modern pedagogy:

1. The factors that have the greatest effect on the quality of student learning **are** *student's personality; student's family; classroom; teacher* (J. Hattie). Accordingly, these categories of people represent the research objects.

2. A level of teacher's social capital can be a guarantor of ongoing and sustained professional development (Carrie R. Lean Research).

3. It is possible to improve school by focusing on the development of the collective capacity which consists of such components as: school management; professional capacity of teachers; school culture and learning environment; educational policy and system of effective resources (M. Fullan).

Monitoring professional capacity of leading school teachers

Leading schools are successful due to systematic monitoring studies which have been

conducted annually since 2018. To this day, 5 studies have been undertaken.

In 2021, a study was conducted to determine the professional capacity of leading school teachers in a distance learning environment and the second study generalizes all 5 studies and considers leading schools as a mechanism for regional school transformation.

4.5 Post-course support of teaching staff

In 2015, NIS AEO initiated to determine platforms that would be a post-course methodological support for teachers of general educational organizations - leading schools. Professional communities of teachers from partner school were created in leading schools.

The main idea behind the leading schools is a collaboration within a network of schools, a systematic professional development of teachers through school communities, and a greater access to knowledge for better teaching and learning.

Leading schools are regulated by the documents of the Ministry of Education and Science of the Republic of Kazakhstan ("On Organization of Schools' Activities to Support the Renewal of Secondary Education Content", Instructive Letter of the MES, 2018). The list of leading schools is approved annually by the Departments of education located in oblasts, Nur-Sultan, Almaty, and Shymkent. Methodological support for leading schools is based on the results of studies aimed at determining professional needs of schools.

The number of leading schools increases each year by identifying new schools being ready to work in partnership with other regional schools. In 2021, there are **1 711** leading schools which is **25%** of the total number of mainstream schools in Kazakhstan (see Table 19).

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Nº	Region	Total	inclu	uding
TN≃	Kegion	Total	leading schools	partner schools
1	Nur-Sultan	90	30	60
2	Almaty	207	40	167
З	Shymkent	139	30	109
4	Akmola oblast	551	117	434
5	Aktobe oblast	403	116	287
6	Almaty oblast	760	220	540
7	Atyrau oblast	195	42	153
8	East Kazakhstan oblast	646	190	456
9	Zhambyl oblast	442	100	342
10	East Kazakhstan oblast	377	114	263
11	Karaganda oblast	504	108	396
12	Kostanay oblast	488	98	390
13	Kyzylorda oblast	293	70	223
14	Mangystau oblast	142	38	104
15	Pavlodar oblast	355	52	303
16	North Kazakhstan oblast	468	108	360
17	Turkestan oblast	899	238	661
Tota	l	6957	1711	5 246

Table 19. Number of leading schools

Leading schools have become points of growth for partner schools as they actively develop an educational environment to improve the quality of teaching, set an inspiring example of teamwork, test and offer others the experience of effective methodological work.

For this reason, they built a school methodological asset which includes **59 326 school trainers**. To teach leading schools how to work with adults, there are active methodological trainings that include lesson observations and giving feedback to teachers, individual and group coaching, and training seminars on teachers' needs. This approach

allows the entire school team to be involved in the process of professional development at the same time. Each leading school performs the same methodological work with partner schools territorially attached to it. A total of **62 058** methodological activities were conducted by CoE trainers over the entire period of leading schools.

The creation of a network of leading schools allowed for the systematic and structured professional development of teachers through school communities, increased access to a broader range of professional knowledge for better teaching and learning.

Since 2017, the activities of leading schools have been summarized and presented at interregional platforms for the exchange of innovative experience. Thus, in 2020, leading schools of 17 regions were united into 5 major interregional forums. This work was effective because it allowed leading schools as networking centers to expand collaboration with colleagues from other areas through broader connections in professional teaching communities.

Since 2018, the CoE have been regularly studying the experience of leading schools collaborating with regional schools. Various methods are used: questionnaires, interviews, and focus groups. To ensure the validity of data obtained, the study involved teachers not only of leading, but also partner schools, which are provided with methodological support. A total of 5 research studies linked by a key idea were conducted: collecting evidence of best practices and leadership in building the capacity of educators in partner schools.

The findings have been repeatedly discussed at various international and national scientific events. They were recognized by the teaching community and led to the main conclusion that the creation of this mechanism in terms of renewed content of education is justified because it contributes to the quantitative and qualitative transformation processes.

For example, 7 of 10 rural schools that took the first place in the competition of the national cultural and educational project "Myn bala" ("Thousand children") are Leading Schools. It confirms their leadership position in exploring learning and teaching issues in cooperation with other schools to improve the quality of student learning. The remaining 3 schools will be represented as regional leading schools next academic year.

For 2022-2023, the priority areas for leading schools are:

1. Developing ICT skills in teaching and professional interaction; deepening teachers' subject knowledge and skills to develop students' functional literacy; and building the capacity of school teams to manage school development, including the training of a leadership talent pool.

2. Continued work to build the internal capacity of new (annually added) Leading Schools to the level of experienced schools in such areas as teaching methods and technologies, criteriabased assessment, and research practices. 3. Supporting and developing a platform for professional interaction of teachers in accordance with the NIS Development Strategy.

Post-course support of leading school teachers

The mechanism of post-course methodological support for pedagogical staff is built according to the "vertical" scheme:

CENTRE OF EXCELLENCE - LEADING SCHOOL - PARTNER SCHOOL.

Due to the epidemiological situation in the country, since 2020 the post-course methodological support has been provided online which allowed to cover a greater number of teachers from remote regions of the country.

Teachers receive a post-course support in the following issues:

- content of education and assessment;

- teaching methods;
- research practices;
- pastoral work;
- management issues.

1. Post-course methodological support for teaching staff on the content of education and assessment.

In 2021, the priority key issue was to conduct methodological trainings on how to observe the lessons of teachers and properly give a constructive feedback and to deliver webinars on problematic issues that teachers face in practice.

Examples of events held in regions:

The CoE trainers observed lessons of more than 700 teachers in Nur-Sultan. It was preceded by the methodological training on how to develop observation sheets for online lessons and determine the focus of the observation and the mechanism for organizing the process. Following the observation results, constructive recommendations and conclusions for improving school practices are given to the school administration and teachers. A series of webinars was delivered for teachers from Nur-Sultan to address the issues identified in the process of lesson observation: "Formative assessment", "Involving all students in active learning", "Feedback in distance learning".

The CoE trainers and the Education Modernization Centre of Nur-Sultan held a training for subject teachers online on "What should be considered when developing tasks for summative

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assessment?". Subject teachers discussed issues arising in school practice and the development of final assignments and analyzed the specifics of developing tasks for summative assessment.

2. Post-course support for teaching staff on teaching methodology.

Due to the transition of general education schools to a distance learning format, the CoE trainers continued to deliver training sessions on effective teaching and learning online. Observation of lessons helped identify typical problems and difficulties:

• organizing and conducting formative and summative assessment,

using effective digital resources,

• forms and methods of delivering learning materials online,

• short-term planning: differentiated learning objectives in online lessons,

• giving effective feedback to students.

They developed and delivered training sessions for the development of teachers' professional competencies needed to implement distance learning.

CoE held a series of events dedicated to the organization of distance learning for Leading Schools: "How to manage a team during distance learning?", "Effective use of ZOOM in a distance learning environment", "Writing tasks and descriptors against criteria", "How to assess the effectiveness of learning in a distance learning environment?", "How to engage students in a distance learning?", "Ways to encourage students to read in a distance learning environment", etc.

The webinars were delivered using information and communication technologies (Padlet, Miro, Jamboard, Google-forms, Microsoft forms, AnswerGarden, Quizziz and etc.). It allowed for a high degree of teacher involvement in the training process, as well as increased interest in the training material.

The CoE trainers paid a special attention to young teachers.

Examples of events held in regions:

"The Association of Young Teachers" project was launched in the Centre of Excellence, Almaty and aimed at giving support to young professionals in the organization of effective work in a distance learning environment.

The Centre of Excellence in Aktobe initiated the "Zhas Kanat" macro project in Aktobe oblast which was the beginning of new and promising work to reinforce the potential of young professionals in the oblast and to popularize the teaching profession. The macro project involves young teachers from leading schools with up to 3 years of experience. The macro project is implemented by:

• organizing permanent pedagogical workshops under the general theme "Teaching Excellence - Student Success";

• working with IV-year students of the School of Education in Zhubanov university of Aktobe

• giving support to young professionals as part of the "Digital mentor" project;

• organizing the meeting with proficient teachers in a "Teaching hall" - "Why am I a teacher?";

• demonstrating experience of young teachers "I know it better...";

• building a platform "Equal to equal" where teachers demonstrate gained knowledge and exchange experience with young teachers;

• organizing the exchange of experience between school leaders. "School leadership" platform.

The project aims to support young people by teaching them the basics of the teaching profession, engaging teacher-mentors and experienced trainers in the region and leaders of the best leading schools that would provide methodological assistance.

The Centre of Excellence in Ust-Kamenogorsk actively worked with young teachers of the oblast. Therefore, it organized the educational hackaton which is a marathon of teachers during which subject teachers work collaboratively on the pedagogical problem (case). In hackaton, teamwork is fundamental, not individual scoring - the whole team wins and losses. The hackaton aims to develop a plan of the training using the significance of approaches to the lesson planning.

CoE branch in Aktau is implementing the project "Zhangyru zholyna - zhas maman", aimed at continuous professional support for young teachers of leading schools to coordinate effective work with schools-partners in a distance learning.

CoE trainers in Nur-Sultan conducted a series of webinars for mainstream schools teachers on the development of functional literacy of students. During the webinars, teachers came up

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with tasks based on the research task specifics and shared techniques to form functional literacy in the classroom.

CoE branch in Ust-Kamenogorsk, jointly with the RC "Shygys", organised a forum of primary school teachers of educational organizations of the East Kazakhstan oblast. During the forum, teachers discussed the development of functional literacy of elementary school children and shared successful practices to build life competencies.

The regional seminar "Inclusive education in the mainstream school" was organised to share experience of organizing the educational process for learners with disabilities and creating an inclusive educational environment within a mainstream school.

CoE branch in Petropavlovsk organised a Virtual School for a young teacher, which worked within the framework of methodological days, that considering the issues of offline and online lesson planning, criteria assessment, task development, differentiated teaching and learning.

Teachers solved professional problems, organised a community to address current school issues by discussing together.

3. Post-course methodological support for teacher activities on the organisation of the pastoral work

Post-course methodological support for the teacher activities on the organization of the pastoral work based on national idea "Mangilik Yel" which is closely related to implementing NIS projects in mainstream schools "Shanyrak", "Tugan elge tagzym", "Academic advisement", "Career guidance", "School self-governance", "Effective work of library".

The most relevant and popular for Kazakhstani mainstream school teachers were webinars held jointly with NIS psychologists and librarians. The webinars were held for teachers, deputy directors on ensuring the psychological support of students during distance learning, organization of work with students "at risk" and their parents, creating a system in order to improve the well-being of each student.

Online Vacation School "Emotionslife-profession" was organised to provide emotional support for teaching staff of educational organizations of the Republic of Kazakhstan. The program was aimed at building the psychological competence of teachers-psychologists through the development of techniques and methods of awareness and emotional leadership to improve the effectiveness of pedagogical activity and quality of life in a pandemic. The online trainings were aimed at developing skills of awareness, reflection of teachers' emotions and experiences; managing their emotional health; self-regulation and control in stressful situations, etc.

Activities held in regions:

CoE trainers in Almaty are implementing educational projects and trainings to reveal the capacity of multi-graded schools in the Almaty oblast on a regular basis. In particular, the project "25 books, 25 songs" is of great interest in the Leading schools of the city. It is successfully implemented and produces its results.

CoE in Ust-Kamenoaorsk held a reaional seminar "Creating a safe and comfortable environment at school: prevention of bullying and cyberbullying". The seminar addressed issues of supporting teachers and parents in creating favorable conditions for successful development of each child, preservation of psychophysiological health. In order to provide methodological support for tutors and family psychologists, prevention of risky behavior in adolescence was held training seminar "The Five Love Languages. How to better understand your child" with a series of consecutive webinars on the topics "I am a Parent of a Teenaaer. How to communicate with a teenager and have fun", "A modern graduate".

4. Post-course methodological support for teaching staff in research activities.

CoE has conducted a number of activities to support teachers of Leading schools implementing the "Lesson Study" approaches both in their practice and in the practice of school-partner teachers. Methodological support is aimed at identifying approaches to the formulation of Lesson Study topics taking into account the specifics of the subject, the formation of working groups for research activities, the organisation and sharing of research results, the study of teachers' needs in order to determine the relationship between research activities and professional development.

As part of the membership of the CoE in the Council of the World Association of Lesson

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Studies, the Lesson Study Kazakhstan project continues to be actively implemented, aimed at applying the pedagogical approach of lesson study by teachers of the country. Lesson study is considered not only as a way for school teachers to improve their teaching practice, but also as a tool for professional development.

The annual regional/city scientific and practical conferences "Lesson study: the experience of Kazakhstani schools" continue to be held in all CoE branches, participants of the project "Lesson Research in Kazakhstan" present their research results. In total, 16 regional conferences were held, which were attended by teachers and heads of mainstream and Nazarbayev Intellectual schools. Thematic platforms were created for discussing organisation of the Lesson Study process in the context of digital pedagogy, sharing the results of joint research of subject teachers on the effectiveness for students, insights and pedagogical findings.

Virtual exhibitions of research results are held within conferences. The lesson study has become an integral part of the school process of improving teacher professional development, LS classrooms have been opened in some schools.

Activities held in regions:

CoE trainers in Almaty conducted training for managers and teachers of multi-graded schools on organising and conducting research of their practice, according to the results of which, teachers made significant changes in their practice and the practice of the school.

CoE branch in Karaganda jointly with the Methodological Center of Education Development of Karaganda oblast held a regional competition "Lesson Study" (Lesson Study) and "Research in action". By the terms of regulations, the jury studied the development of planning three cycles of Lesson Study, plans of jointly planned and conducted lessons, forms of lesson observations (maps, diagrams, schemes, etc.), materials of analysis and reflection of teachers' group work, final presentations.

CoE trainers in Taldykorgan organised the process of Studying a joint lesson between district schools. Research groups together with teachers of the leading and partner schools were organised on several lessons they performed online planning, teaching and discussion of the lessons.

5. Post-course methodological support for the teaching staff activities on management issues.

CoE held a number of seminars, webinars for school leaders of leading schools in the regions of members of the methodological community on the following issues:

 building a model of methodological work with teachers in the distance learning and in the postpandemic period;

- needs of teachers, directions and effective forms of professional support;

-school management in post-pandemic period and support for the teamwork of schools;

 creating effective models of working with parents of students, whose role has greatly increased when students returned to school;

- planning lessons with a focus on involving students in active mental activity within the transition from online to offline learning.

Methodological work with the heads of educational organizations confirmed the importance of joint activities to discuss issues that have a special place in the school methodological work and the professional development of school community. These directions for this category of teachers will be continued next year.

Activities held in regions:

Since October 2021 CoE branch in Karaganda has organised an online school of a methodologist. The methodologists of the district and city educational departments in Karaganda oblast, jointly with the trainers of the branch, studied the regulatory framework of the professional activity of the methodologist, discussed arrangements for interaction with Leading and partner schools, ways of organising online methodological work.

. A series of webinars were jointly conducted for the principals of schools of Nur-Sultan, Almaty on teaching strategic planning, change management, organisation of school planning.

CoE trainers in Kokshetau, jointly with the educational departments, organised a regional seminar "The role of the Leading School in the partnership at the local level" within which the issues of developing interaction between Leading and partner schools of the region were considered based on the implementation of the Leading School ideas in practice. Since 2017, the activities of Leading schools have been summarized and presented at **interregional platforms** for sharing innovative experience. In 2021, 5 interregional forums were held.

Activities held in regions:

The V interregional forum of the western regions (Aktobe, Mangystau, Atyrau, West Kazakhstan) was held on the topic "Subjectmethodological competencies of teachers as the basis of the quality of students' knowledge". The forum was focused on the development of innovative activities and interregional collaboration of Leading school teachers in the field of subject competence.

Il Interregional forum for teachers of Leading schools of Almaty and Nur-Sultan is dedicated to disseminating the best pedagogical practices of Leading schools in improving the quality of education, taking into account the individual needs of students in the post-pandemic period.

The III Interregional Forum of southern regions "Zhanaru Zharshysy - 2021" was held with participation of teachers of Leading schools of Almaty, Zhambyl, Kyzylorda oblast and Shymkent. The main topics for discussion were the organisation of school management, cooperation between teachers of Leading and partner schools, the development of teachers' research skills and collaborative leadership.

The II interregional forum of teachers of Leadina schools in Kostanav, Akmola and North Kazakhstan oblasts is dedicated to the development of organizational and methodological conditions for the professional community activities of teachers by activating online work of Leadina and partner schools. The key tasks were aimed at creating conditions for dialogue on the development of leadership qualities and the formation of sustainable online communities of teachers, and the best experience of Leading schools of the northern regions in the organization and interaction of online communities was presented. This contributed to the cooperation of participants of educational organizations of the regions of Kazakhstan into online communities in various areas of activity.

The II interregional forum of teachers of Leading schools in East Kazakhstan, Karaganda and Pavlodar oblasts was held on the topic "School communities: we teach under different conditions." The main objectives of the forum were to identify the best practices in providing the quality of education, to exchange experience in developing cooperation and dissemination of NIS experience.

Since 2021 Online platform "Mektep Trainer" is available on Facebook.com in order to provide methodological support for the activities of school methodological community. Currently, 12,800 school trainers are registered in the "Mektep Trainer" group, who have completed courses on the educational programs "Reflection in Practice", "Research in teacher practice" and school coordinators on criteria assessment.

The "Mektep Trainer" group has become a platform for dialogue and exchange the experience of members of the school methodological community on issues of school professional development of colleagues. The content of the platform is master classes, life hacks of the trainer, useful resources and a question-and-answer chat. Group members can participate in marathons and webinars, share experiences, ask questions and provide feedback.

Currently, 82 methodological materials are uploaded in the Mektep Trainer group.

Post-course methodological support for the activities of the teaching staff of colleges and universities.

Trainers in the regions provide methodological support to the teaching staff of Kazakhstani universities and colleges who have been trained by CoE. At teachers' request, the activities were held on the organisation of pedagogical practices, distance learning, development of research skills among students, understanding of the ideas of "leveled programs", issues of renewed educational content, criteria assessment.

Activities held in regions:

CoE branch in Uralsk continues work on the project "My start in profession", started in 2019 with the Zh. Dosmukhamedov College. As a part of the project, a number of seminars were held for teachers and graduate students.

CoE branch in Kyzylorda when working with the teaching staff of the Korkyt Ata Kyzylorda University and the Pedagogical Higher College named after M. Mametova focused on the specifics of the Lesson Study process.

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CoE branch in Taraz, jointly with the NIS teachers, held a number of events for teachers and students of the 4th year of the specialty "Pedagogy" of the Ustaz Institute of the M.Kh. Dulaty Taraz Regional University on the review of ICT tools used in the learning process, methodology of criteria-based assessment of student achievements in distance learning.

Post-course methodological support for the activities of pedagogical staff of preschool educational organizations.

Implementation of this direction was carried out in the form of training events. The training activities are aimed at providing practical assistance to teachers in developing effective planning, taking into account modern approaches to organization of educational activities of preschool children and the principles of integration of educational areas through the implementation of the 4K model in the educational space. As a result of the work, the participants learned to work systematically with documents, correctly choose the games for the needs of children, and effectively use interactive teaching methods. Currently, the work with preschool organizations is at the development stage. It requires expansion and deepening, including the study of the actual teacher issues.

Activities held in regions:

CoE branch in Ust-Kamenogorsk initiated the forum for preschool educational staff and mini-centers of East Kazakhstan oblast. The event was aimed at creating organizational and methodological conditions for discussion of issues on organizing activities of preschool organizations, sharing experience of preschool educators on the use of new approaches to the educational and pastoral work.

CoE branch in Atyrau initiated a regional conference on the topic: "Professional development of preschool teachers: theory and practice" for preschool teachers. During conference, they discussed issues of change management on the implementation of the renewed program in preschool organisations, shared experience in organizing non-traditional games, methods of intellectual development of preschool children, methods of child development in inclusive education.

CoE trainers in Nur-Sultan, Uralsk, Kokshetau have begun work on adapting the Lesson Study approach for the practice of preschool education.

CoE branch in Kostanay, jointly with the education department of the Akimat of the city of Rudny, Kostanay oblast, organized a project "Gamification in action" for teachers of preschool educational organizations and mainstream schools. As a result of the project, groups of teachers have developed and tested tabletop games for children of 3-4 and 5-6 years of age.



COOPERATION ON NIS EXPERIENCE DISSEMINATION

5.1

5.2

Intellectual schools – regional methodological centres

Nationwide experience dissemination

5.1. Intellectual schools - regional methodological centres

Since 2018, Intellectual schools have been Methodological centres for updating the content of education and improving the professional development of teaching staff (hereinafter referred to as Methodological Centres) in 17 regions of Kazakhstan. They are regional platforms for disseminating the NIS experience into the secondary education system of the Republic of Kazakhstan, contributing to increasing the intellectual potential of the country and training teachers who practice modern methods and technologies of teaching and learning.

The aim of methodological centres is to provide methodological support and resources to teachers of mainstream schools, the development of teacher networking, the creation of unified information space for teaching staff of the education system.

CoE trainers and teachers of Intellectual Schools in Methodological Centres conducted **11,000** events in 2021, including:

- Seminars 852
- Master classes 610
- Conferences 53
- Consultations 3090
- Webinars 2531
- Round tables 248
- Trainings 453

• Individual consultations based on the results of the lesson observation - 3163.

Post-course methodological support (see the chapter above) is conducted by Methodological centres in Leading schools drawing on the work plans agreed with regional education departments.

A survey of Leading school teachers was conducted at the beginning of the academic

year in order to study professional issues, identify problems in the teaching activities for effective work in this direction. According to the results of the survey, training events were held during the year for the following categories of teachers:

- subject teachers,
- school psychologists,
- teachers-librarians,
- tutors

- school administration (directors, deputy directors for educational and pastoral work).

The form of the training activities was also determined with reference to the answers to the question "What kind of activities would you like to participate as a listener?": observations, seminars, master classes, coaching, round tables, webinars.

Also, based on the survey results, the methodological directions that cause the most difficulties in the educational process for Leading schools teachers are determined:

 \checkmark application of various differentiation methods,

✓ development of tasks contributing to the development of functional literacy,

✓ involving students in the learning process,

 \checkmark the use of digital technologies in the educational process,

developing students' research skills,

✓ application of CLIL methods,

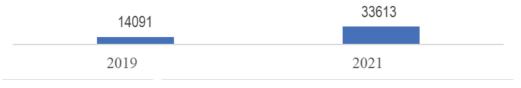
 \checkmark implementation of formative and summative assessment,

✓ features of distance learnin.

All events were held online on the ZOOM platform. A positive dynamic in the audience coverage was obtained as a result of online format of events.

Table 3. Comparative dynamics of the number of listeners

Number of listeners in the courses for disseminating experience



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One of the areas of methodological center activities for 2021 is the implementation of projects for pastoral work in mainstream schools: "Asia", "Tugan elge tagzym", "Academic advisement", "Career guidance", "School self-governance", "Effective library work" etc. (see figure 23).

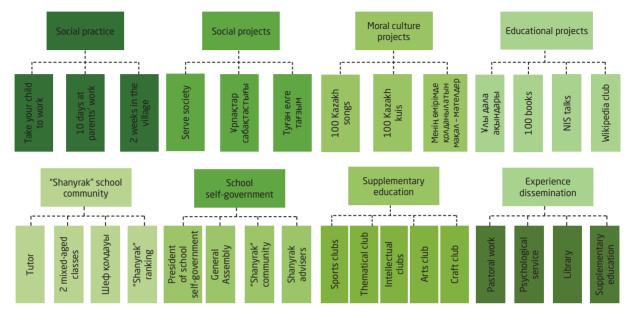


Figure 23. NIS AEO projects

Webinars related to the study and application of digital education technologies were important and relevant for Kazakhstani mainstream school teachers. During webinars teachers were provided with digital educational platforms, emphasising the relevance of their use in distance learning (see Figure 24).



Figure 24. Master classes

Master classes of NIS teachers were highly appreciated. They were aimed at developing subject competencies and working with children to improve subject knowledge, methods of advanced problem solving, preparation for the Olympiad through the development of individual student program. Issues of differentiation of learning, development of critical thinking skills, student self-regulation and formative assessment were considered during the subject webinars. Specific examples from the lesson made the training activities practice-oriented and increased their effectiveness.

Activities held in regions:

CoE branches in Uralsk, Atyrau, Aktobe, Aktau, jointly with NIS conducted the V Regional scientific-practical conference "Facets of a new educational reality. Well-being and emotional development of personality". Conference focuses on the role of education environment in the development of student well-being, creative thinking, ecosystem of distance format, prevention of emotional burnout and other topical issues.

CoE branch in Taraz jointly with NIS held a number of events for teachers-psychologists of the regional mainstream schools on ensuring the psychological safety of students during distance learning, organizing work with students "at risk" and their parents, creating a system to improve the welfare of each student.

The listeners highly appreciated the master classes of the NIS teachers of Kokshetau, aimed at developing subject competencies and working with children to deepen subject knowledge.

For example, during the master class physics teachers were demonstrated complex problemsolving methods and proposed the ways of preparing students for the Olympiad through the development of an individual student programme. During the work they were presented digital educational platforms, with focus on the relevance of their use in distance learning, as well as various examples of integrated tasks in a range of subjects.

The intellectual school of Pavlodar continued to train students, future chemistry teachers on the application of CLIL approach in the classroom. The training is conducted weekly for 34 students of second and third year (see Figure 25).



Figure 25. CLIL training seminars for students of Pavlodar Pedagogical University

In order to develop a network community of teachers of the Almaty oblast, as well as to exchange experiences and discuss strategies for overcoming difficulties encountered in the learning process, a series of webinars were held in March 2021. They were built on the specific professional needs of teachers. 24 webinars were organized and conducted on the following topics: "Development of functional and mathematical literacy in the classroom", "Preparing children for Pisa, Timss, ways to achieve good results", "Preparation for Olympiads". The webinars covered all 17 districts of the Almaty oblast, as well as the cities of Taldykorgan and Tekeli. 1229 teachers participated in them. Webinar participants noted that webinars were engaging, valuable and interesting.

To provide methodological support to teachers of Atyrau oblast, the Intellectual School of Atyrau has developed elective courses "Web design and development" for students aged 14-15 (102 hours) and "Video Production" for students aged 13-16 (80 hours).

The relevance of the course "Web design and development" is defined by increasing demand for

websites among people of different professions and fields of activity. The course programme is aimed at the practical development of the website designing technique. A specific feature of this course is the possibility of integrating the studied material with other academic subjects. The knowledge gained during the course can be used to develop thematic pages from various subject areas: mathematics, physics, chemistry and others.

The educational programme of professional development courses for teachers of extended education in the elective course "Video Production" is aimed at introducing students with the goals, objectives, structure and content of the educational programme of the elective course.

The list of activities carried out can go on. It should be noted that from one year to another professional skills of teachersleaders significantly improve. They become more active, understand the tasks and willingly take responsibility for the professional development of pedagogical community of the region.

5.2. Nationwide experience dissemination RURAL SCHOOL PROJECT.

The previous report presented an interim analysis of the activities undertaken within the Project. This report presents the results of the Project implementation.

The project initiated by NIS AEO in accordance with the State of the Nation Address by President of the Republic of Kazakhstan K.K. Tokayev. Project "Constructive Public Dialogue – the Basis of Stability and Prosperity of Kazakhstan" on September 2, 2019, was unprecedented in the analysis of the conditions of rural schools in the country involving the best NIS experts. Kazakhstan has not yet conducted a systematic study of the rural school situation, which would cover all aspects of the educational process – from the quality of infrastructure to the quality of teaching and satisfaction of stakeholders.

NIS AEO is actively involved in the professional development of teachers of these schools except from analysis. It makes this project unique.

Based on the results of analysis, NIS prepared recommendations for the school teaching staff on improving school practice, professional development, planning educational activities, active use of digital resources, recommendations on the list of required educational equipment, consumables, mandatory and additional literature for the implementation of the State Educational Standard of the Republic of Kazakhstan for all subjects.

School administrations were given recommendations on creating a modern educational environment, refreshing the work of school libraries and using them as additional educational platforms for students and teachers.

Renovation of school buildings and classrooms were carried out in order to improve the school facilities, jointly with local executive bodies and sponsors. Equipment for 5 schools (26 classrooms), furniture, educational and computer equipment for 1 school were purchased for a total amount of 1,062,520,092 KZT, of which more than 700 million KZT were provided by private investors.

917 lesson observations were conducted with providing a feedback and developing methodological recommendations for improving the teachers practice.

A comprehensive analysis allowed us to study the opinions of 838 teachers, 1,745 students of grades 8-11, 967 parents. Focus groups were conducted with 53 teachers, 58 parents, 50 PS members and interviews with 7 school directors.

The results of the work done show that all schools have a positive atmosphere for learning and cooperation, a high level of evaluation of the school's activities by parents and students. At the same time, a number of aspects require improvement; for example, the quality of knowledge over the past 5 years in all schools remains at a low level, there is a sharp decrease in the education quality during the transition from primary to secondary primary school, a stable decrease in the proportion of excellent and good students with an increase in class, with a proportional increase in the proportion of triples. The decline in education guality is mainly caused by science and mathematical subjects, the teaching of which begins in secondary school.

The main indicators of education in rural schools.

Assessment of the education quality within the country reflects the low level of knowledge among rural children. A similar situation is observed in 14 rural schools, where an analysis of the quality of students' knowledge carried out. There is a certain positive dynamic in classes, however, over the past 3 years, the quality of education has remained at 60%, and the average UNT score for the same period has decreased by 10 points.

The quality of knowledge becomes lower with each grade, especially decreasing after the transition from primary to secondary school. The results begin to increase when students move to the 9th grade, when children are usually preparing for graduation and for UNT, but even in the 11th grade, the quality of knowledge does not come to the level shown by children in the 4th grade.

Nevertheless, most school leavers are interested in studying, they also believe that by studying hard, they can secure admission in a good university or college. Two-thirds of children want to go to university, and a third to college.

There are reduced expectations of rural school students when choosing a career path. Students indicate a rather limited list of future professions in their answers to the questionnaire Professional orientation work at the school should be more intensified, including the establishment of cooperation with regional VET universities and organizations.

A comparative analysis of the specific features of urban and rural schools is carried out every year, according to the results of the competitive selection to Intellectual schools. In 2020, in addition to this, the results of the Olympiad of the republican cultural and educational project "Myn bala" were compared. It was held among 6th grade students of rural schools.

Factors impacting rural schools' education.

According to a survey conducted with teachers of 14 rural schools in the 2019-2020 academic year, half of teachers (50%) believe that the learning objectives will be achieved by students only partially, 8% of teachers believe that students will not master the curriculum as a whole. Most teachers (65%) refer to the lack of required equipment as the main obstacle to achieve the curriculum objectives. Every 5th teacher noted the lack of time to study the programme, insufficient knowledge of students, as well as the lack of teaching materials and textbooks as reasons preventing students to cover the programme. Only 11% of teachers noted a lack of teaching experience as the reason. Many international studies say that the leading role of teacher in the successful implementation of the educational process. Therefore, the desire of teachers for long life learning and professional development should become a priority for every teacher.

The results of a survey among students of rural schools in one of the regions show that rural school attendance is relatively low. The number of lessons attended by students is less than according to schedule. By responses of students of grades 8-11, they attend less than 30 lessons a week, the least in 8th grade - about 25 lessons per week, the most in 11th grade - 30. There are also students who noted that they attend less than 7 lessons per week. Work is required to ensure maximum attendance of students in rural schools.

As for the qualitative and quantitative features of the teaching staff of 14 rural schools, about 60% of teachers have the first or highest category or qualifications "teacher-expert", "teacher-researcher" and "teacher-master".

It is worth noting that half of the school teachers are aged under 40 and have to 15 years of teaching experience. However, 17% of teachers with more than 30 years of experience are teachers "at risk", who due to established habits, may be reluctant to change their views and beliefs and may not be ready to adopt new approaches, methods and learning strategies.

In one of the rural schools, 31% of teachers had the first or highest category according to the traditional certification system. After introducing the new qualification system, 39% have already become expert teachers, researchers and masters. However, we should be wary of the fact that 8 teachers without a category have become teacher-experts and teacher-researchers, bypassing the level of teacher-moderator. It is recommended a more consistent approach to the professional development.

Teachers professional development and support.

Despite the fact that the amount of administrative and economic issues in the work of school principals has decreased from 75% to 30%, it still remains high. Principals note the need for education management training. 100% of school principals claim that university education content does not include disciplines on management and administration in education organizations (From the analysis by CoE for 2012-2019 years) Also, teacher training programmes, the content of which is dominated by a large amount of theoretical information should be revised for improving practical skills of graduates in order to work at school: planning and conducting classes and assessment, interaction with children and colleagues, etc.

According to lessons observations by experts, rural teachers have difficulties in the fundamental pedagogical aspects, when planning classes, setting goals, developing tasks aimed at forming students' skills of the 21st century and assessing students. The areas of development of pedagogical activity remain the organization and conduct of the lesson, taking into account the application of the inquiry based learning; joint lesson planning with other teachers; the use of ICT and additional resources for teaching students and the use of differentiated learning, pair/group work to involve students in the learning process and assessment.

Based on the data of a survey conducted among teachers of 14 rural schools, a rural school teacher is identified as:

• Teachers are actively involved in professional interaction, regularly attending lessons of other teachers, providing them with feedback and participating in joint professional development activities.

• Teachers quite highly assess their confidence level in professional competencies (the development of critical thinking, the use of a criteria-based assessment system).

• Teachers feel the need for professional development, for example, in the use of innovative teaching methods.

At the same time, 52% of the teachers surveyed noted that they experience workrelated stress, 16% noted a significant level of stress. 34% of teachers claim that a significant source of stress were inspections initiated by the LEA or the Ministry of Education and Science of the Republic of Kazakhstan. At the same time, in 6 schools, the proportion of teachers experiencing stress due to inspections exceeds 40%. For a third of the respondents attestation is a source of stress. 27% of teachers noted that they experience significant stress caused by a large amount of administrative work, 22% - due to the need to check a large amount of students' work, 25% - due to a large amount of work on preparing for lessons. 17% of teachers report excessive teaching load as a cause of stress.

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The combination of these factors causes frustration in the profession and confidence in its lack of demand.

School climate

The strength of rural schools is a positive school climate and good human relationships. Both students and teachers positively evaluate their interaction within the educational process. Teachers (93%) note that the school provides students additional support, and that teachers (95%) have good relationships with students.

Students note (82%) that they get the support of the tutor, respect from teachers (85% of students), a positive atmosphere in the classroom (80% of students), love their school and are proud of it (90% of students), the same number of students note that they have good relationships with classmates.

In rural schools, students (90%) respect teachers, they can speak freely in the classroom, feel the support of teachers and tutors (80%).

School infrastructure

The school infrastructure creates the educational environment. The educational environment should be comfortable, emotional, expanding cognitive capabilities, stimulating various types of activity, encouraging independence and creativity.

Within the project, a comprehensive analysis of the facilities, organisation of the

school territory was carried out. The technical condition of 447 classrooms was studied: 44 laboratories and 403 classrooms, their equipment and expendable supplies, compliance with the requirements of the State Compulsory Standard of Education, the sanitary rules and regulations of the Republic of Kazakhstan (see Figures 25-28).

Analysis of school infrastructures revealed that:

• **in 5 out of 14** schools, educational process is organized in two shifts, although the capacity of the building is greater than the students' composition;

• **13 out of 14** schools need significant renovation;

• **in 10** schools the fire safety system does not work at all, or need a renovation;

 only in **1 school out of 14** lighting meets the standards, **13 schools** need a replacement of electrical wiring, there is no lighting around the building, one school need a complete replacement of the power supply system;

• there is a slow Internet speed in all schools (the real speed varies in the range from 4 to 40 Mbit/s);

• **in 2 schools out of 14** temperature does not meet the standards;

• **in 13 schools** ventilation system does not work, one school does not have;

• **all 14 schools** have outdated video surveillance systems.





Figures 26,27,28,29. The condition of school buildings.

According to most teachers interviewed, the problem with the lack of required educational equipment leads to the failure to achieve educational goals. The need to improve the infrastructure of schools was noted by all students of 14 schools. The students of 14 schools rated their overall satisfaction with the equipment (computer classes, library, gym) by an average of 3.9 points out of 5 possible. They actively expressed their wishes regarding the improvement of facilities, the school territory, as well as the overall design of the school. Providing schools with ICT of high Internet speed is an important issue for students, as these factors directly affect the development of digital skills of the younger generation.

Project results

Based on the results of the identified problems, professional development courses were organised in the following areas: teaching methods and technologies, management and leadership at school, renewed content of secondary education, development of student functional literacy, development and examination of assessment tasks, activities for school trainers and psychologists. 195 teachers were trained in total.

As part of the methodological support for rural school teachers, 810 events were held, including seminars, master classes, webinars, lesson observations with 100% coverage of teachers from all 14 schools participating in the project.



2021, as a part of the Rural School project, the second republican online seminar "The practice of a rural teacher" was held. More than 900 participants of the seminar shared their experience in improving teaching and learning practice. After discussing issues of change management in schools, professional development experience of teachers was shared by the heads of rural schools of the Karaganda and East Kazakhstan oblasts.

In autumn, CoE held a vacation school for 192 subject teachers of rural schools to extend subject knowledge. The main purpose of this event was to consider the methodology of teaching subject topics on which students regularly face into difficulties.

CoE launched an online course "Writing an essay" for teachers of rural schools. The course programme is aimed at presenting students the structure and content of the essay, studying the methods of writing, assessment criteria

Centre for Educational Programmes organised training seminars on the specifics of

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implementing the updated content of curricula in all subjects of grades 1-11 for 211 teachers.

Centre for Pedagogical Measurements conducted training courses on the implementation of assessment criteria for 882 teachers, monitored the student learning achievements in grades 4-8, prepared 49 reports in each subject and 2,550 individual subject reports for each student.

The methodological work of NIS AEO has contributed to improving the professional capacity of schools, the quality of teaching and learning, and teachers' digital and analytical skills.

In order to improve the quality of secondary education, NIS has developed a number of proposals on monitoring the school conditions and activities, teachers professional development, improving students' well-being, involving the local community, developing the school infrastructure. The proposals have been sent to schools and local executive authorities.

PROJECTS IN RESEARCH PRACTICE (LESSON STUDY, ACTION RESEARCH)

The project Lesson Study Kazakhstan aimed at the use of pedagogical approach of lesson study by state schools teachers is actively implemented. It is seen not only as a way for school teachers to improve their teaching practice, but also as a tool for professional development. Since 2017, annual regional conferences have been held for teachers to present research results and improve teaching and learning practices.



In 2021, CoE participated in the WALS Conference (Macao) and had the opportunity to present the results of research and the experience of Kazakhstan in this area, receive an expert assessment, discuss development plans and get up-to-date information on the implementation of the Lesson Study approach in the world. During the WALS conference Centre of Excellence held a symposium attended by more than 100 Kazakhstani and international experts and researchers. 4 trainers of Centre were the key speakers of the symposium and presented a study on "Kazakhstan and Lesson Study: status quo and perspectives".

PARTICIPATION IN THE ANNUAL REPUBLICAN AUGUST CONFERENCE OF EDUCATORS

The annual republican conference for educators "Education and science - the key to sustainable development of the state" was held on 9 - 17 August, 2021. The August Conference is a traditional event that gives a countdown to the start of a new academic year and new pedagogical ideas. The conference was held under the 30th anniversary of Independence of the Republic of Kazakhstan and the 180th anniversary of Ybyrai Altynsarin.

The August conference included 27 webinars aimed at developing students' functional literacy through the renewed content of education (see Figures 30-33).







Figures 30-33. Network sessions of the Republican August Conference.

CPM trainers conducted thematic assessment sessions in fifteen subjects. They gave recommendations on developing functional literacy, presented the format and content of the current and final assessment.

CoE trainers held network sessions for subject teachers of educational organisations "Methodological support for teachers" (work from two studios), developed and recorded 29 master classes in 15 subjects (total 506 481 views), including:

• session for teachers of Leading schools "Monitoring and analysis of the educational process: how to improve teaching and learning", it was attended by three categories of teachers (directors, heads of methodological community, school trainers), with a total of 1 452 participants;

• sessions for subject teachers at the regional/district levels, the CoE branches held 177 methodological events, including 148 master classes in all subjects for teachers of grades 1-11.

On **16-17 August 2021**, the Conference included two online sessions on methodological platforms in Kazakh and Russian for teachers of 14 schools participating in the Rural School project: for school leaders and subject teachers. Teachers discussed current trends in education.

More than 39 webinars and master classes were held within two days, 1 800 teachers took part in them. This event was organised by teachers of NIS Ust-Kamenogorsk, CoE, CEP and CPM trainers.

During the thematic sessions of the Conference, teachers got acquainted with new

approaches to lesson planning, regulatory legal acts, types, forms and methods of in-school control, project-based learning technology, considered why the use this technology in teaching is important today, studied approaches to organising project work at school. During the sessions, participants were provided with information about the methods used by modern school libraries in working with online educational resources and applications for distance and traditional learning. In addition, they were informed about organisation and conducting laboratory and practical work in science classrooms. Teachers were demonstrated the general methods of performing practical work in chemistry, biology and physics.

During the training seminars, teachers received theoretical knowledge about the concepts of "functional literacy", "creative thinking", discussed their content, and the possibilities of functional literacy development. The teachers considered the possibilities of implementing differentiated teaching in school practice and the use of stimulating questions at various stages of the lesson. They discussed the main steps of research in teaching practice and their role in school development.

The issues on the content, format, reports and results of monitoring the quality of knowledge in grades 4 and 8 were addressed. Teachers were provided general recommendations on the use of monitoring reports for further practical activities, attended master classes on the use of formative assessment in the classroom, the use of effective approaches, methods and assessment tools.

They considered aspects and main components of the school climate, and practices that contribute to its improvement. They studied the features of horizontal and vertical planning of mathematics and science lessons.

Also, the important aspects of technologization of learning, improving the ICT competence of teachers, effective planning of the process and ways of using ICT in assessing and improving the quality of education were considered.

Teachers of non-linguistic subjects got introduced with the modern CLIL approaches, some key techniques for activating knowledge with the use of CLIL.

This event has become an educational platform organised in terms of methodological and practical support for teachers working in rural schools. AUTONOMOUS EDUCATIONAL ORGANISATION «NAZARBAYEV INTELLECTUAL SCHOOLS», 2021

PROJECT WITH KAZAKHMYS CORPORA-TION LLP

In the period of May 2020 to July 2021, NIS implemented a project on the professional development of general educational teachers in Zhezkazgan, Balkhash, Satpayev and Ulytau district of Karaganda region schools based on a service agreement between CoE and Kazakhmys Corporation LLP.

This cooperation became a part of the social project of Kazakhmys Corporation LLP and was aimed at improving the quality of life and activities of the population of the abovementioned districts.

The main goal of NIS in this project was to improve the professional qualifications of teachers, provide them with methodological support in order to improve the quality of education in these districts. The project covered the most remote districts of Karaganda oblast, including multigraded rural schools.

At the beginning of the project, a monitoring study was conducted to identify teachers problems and needs in Balkhash, Zhezkazgan, Satpayev, Ulytau schools. The study included interviews, questionnaires, 191 lesson observations and review of 251 documents (school development plans, work plans of Teachers/Methodological councils, portfolios of school leaders and teachers). Following the results of the study, the main directions of professional development of teachers were proposed: school management, teaching and learning.

In these areas, CoE conducted 1 257 methodological activities and individual online consultations attended by 9947 teachers.

The direction of School Management included webinars, round tables, and online consultations for school leaders. These events aim to discuss issues related to the management of educational processes at school in the context of distance learning, the use of ICT capabilities for school management, monitoring and analysis of the educational process, as well as planning and organisation of in-school control, strategic planning of school development. As a part of "Teaching and learning" strand teachers of the regions have been provided methodological support through:

- teacher training courses (1332 participants) on developing mathematical and reading literacy, the development and review of assessment tasks, renewing the subject content of secondary education, the programme of school research trainers.

- training seminars/webinars (5120 participants).

The seminars addressed the issues of organising research practices of teachers (Lesson Study and Action Research), effective planning during distance learning, criteria-based assessment of students' achievements during distance learning, online resources to support distance learning, mentoring at schools.

To develop skills in the development and review of assessment tasks, 4 vacation schools on criteria-based assessment were organised and attended by 1 065 participants.

In the field of education and socialisation of students, the project involves employees of psychological and pedagogical service and librarians of schools, engaged in the NIS experience dissemination through workshops and seminars.

As a part of the project, an educational tour was organised for 25 teachers of schools in the districts of Karaganda oblast. The tour provides the unique opportunity to develop the professional skills of teachers from remote districts, including teachers of multigraded schools. Teachers were trained at seminars on the following topics: Differentiated teaching, Horizontal and vertical planning of an effective lesson, Effective forms and methods of teaching, Development of educational programmes.

The project contributed to the creation of a comon educational space based on the integration of advanced training courses and methodological support for teachers. The analysis of the project results showed the increase in teachers professional skills in 4 districts and, accordingly, in the quality of students' knowledge.



PROJECT ON SUPPORT TO THE DEVELOPMENT OF THE SECONDARY EDUCATION SYSTEM OF ATYRAU OBLAST gender, and across the regions. The national statistics and international comparative studies for several years show that the education quality in Atyrau oblast is lagging behind the average country indicators.

both in terms of the languages of instruction,

Under this, the Akimat of the region initiated a project to support the development of the secondary education system of Atyrau oblast.

As part of this Project, NIS has developed tools to study the conditions of general educational schools and the quality of teaching and learning in the region.

Regarding the Project's objectives, a largescale study of the educational activities in Atyrau oblast was carried out. It included monitoring the students' educational achievements, identifying professional challenges and needs of teachers, analysis of the school climate and infrastructure.

More than two hundred NIS specialists (practical teachers, methodologists, IT specialists, psychologists, statisticians, etc.), and international experts from the United Nations Population Fund, the United Nations Children's Fund, the World Bank, the Higher School of Economics of the Russian Federation, etc. were involved in conducting the study.

Regulatory documents have been drafted, various educational resources have been developed including elective course programmes, additional education programmes, etc.

To build the teachers' capacity, several groups of specialists (trainers, methodologists, etc.), school leaders have been trained to promote innovative ideas and implement positive changes in the education system of the region.

The results of the project are presented in this analytical report to ensure information transparency, support of the education system and the implementation of regional policy in education.

Training activities on the use of available data for analysis and interpretation based on the results of international comparative studies and national testing for employees of the Atyrau oblast Education Department. An analytical group of 60 trained specialists has been created in the region, including the employees of the Department of Education, the methodological centre in 3 directions: analytical, statistical, managerial (order of the Atyrau oblast ED No. 91 dated April 9, 2021).

The group was trained on the use of available data for analysis and interpretation based on the international research results and national testing.

To improve the quality of the educational process, the analytical group is recommended to continuously monitor students' educational achievements, analyse the UNT results, and properly assess teachers during attestation in the region.

Analysis of urban and rural schools. Comprehensive study of 50 schools.

The following measures have been taken to complete the given task:

1) A working group of 125 employees from AEO, CoE, CPM, CEP and NIS teachers has been established.

2) The working group discussed the indicators and made the most relevant suggestions for the current situation among schools during the meetings.

3) Data collection tools and methods have been developed. The quantitative and qualitative methods were used to conduct a study in 50 schools in Atyrau oblast. The sample is presented with schools with different language of instruction (Kazakh and Russian) and location (rural, urban, central, suburban).

The period from 11 May to 22 May 2021 saw a comprehensive analysis of the educational process in schools, students' academic achievements, the qualitative composition of teachers (by qualification level, age, work experience, category, academic load, professional development courses, etc.).

The main problems of 50 Atyrau schools were revealed. They have to be taken into account when developing school indicators.

As a result, 64 analytical school reports were prepared (considering the language of instruction: in two languages for 14 schools, in Kazakh for 34 schools and in Russian for 2 schools) including recommendations for teachers and principals of 50 schools in this region.

The functional literacy test was organised and conducted among 11,320 students aged 14 years from 197 schools.

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The monitoring of academic achievements was organised and conducted for 4 and 8 grade students.

Academic integrity in school community

The training on Academic Integrity programme has been conducted among school principals and teachers of Atyrau oblast (210 people) from 1 to 4 November 2021.

School principals became acquainted with the methodology for conducting a single academic integrity lesson for students. The workshop participants were shown ad hoc videos of different types of academic misconduct. They were also shown interviews with parents, students and teachers about the importance to respect academic integrity at schools. The training was conducted for 11 groups: 3 groups in Russian language and 8 groups in Kazakh language. **210 participants were awarded certificates** at the end of the workshop.

Professional development of urban and rural schools' teachers

The professional needs of urban and rural teachers were determined based on lesson observations. The teachers were provided with feedback; teachers, students and parents were surveyed for the further support.

The following research tools were developed by Centre of Excellence to determine the professional needs of teachers from 28 Atyrau schools (12 urban and 16 rural schools):

• surveys for urban and rural school principals, teachers, students and parents

• the list of interview questions for the leaders of regional education departments, principals and teachers of urban and rural schools

lesson observation maps

• assessment sheet template to examine school documents.

The LimeSurvey platform https://cpm.kz/ forms/ was developed to conduct online surveys and upload data for further analysis.

The following work was undertaken:

an observation of 336 lessons

an online survey of 14,760 respondents
 including 83 principals, 2,360 teachers,
 6,122 students and 6,195 parents

 an interview with 16 respondents
 (1 leader of each education department and 1 leader of each regional methodological office)

an analysis of 1,066 school documents.

As a result of these works, an analytical report was prepared.

Professional development of teachers of mainstream regional schools

The organisation of trainings for teachers in Atyrau involved:

• making the lists of teachers in Atyrau

 creating separate tab pages on the platform sdo.cpm.kz related to the project https://sdo.cpm.kz/local/crw/index. php?cid=50&crws.

• During the period from April to October this year **1,060 teachers** attended the professional development courses.

Development of teachers' digital skills The online surveys were conducted to determine ICT competencies of mainstream school teachers:

• The questionnaire was developed on the LimeSurvey platform https://cpm.kz/forms/

• 12,276 teachers from 197 schools were surveyed

• The study was conducted from April to May 2021 based on the survey results

The objective of the study was to determine the level of ICT competence of respondents and develop recommendations for improvement. Data collection was based on the following key focuses of the study:

teachers' skills level of using services and programmes

teachers' awareness on information security

– teachers' skills to organise synchronous and asynchronous learning. The source of data collection was an online survey focused on a comprehensive assessment of knowledge and skills based on the results of the practical tasks and tests taken by respondents. An analytical report has been made and delivered to Atyrau Education Department.

The survey was conducted to determine the level of ICT competence and make recommendations for developing an improvement strategy of distance learning. The survey involved teachers of mainstream schools.

The survey took place from April to May 2021 and involved 12,276 respondents.

The majority of respondents (on average about 47%) feel the need for online support. According to this category of respondents the most preferable forms of such support may include:

Online professional development courses

PART 2 DISSIMINATION OF THE NIS EXPERIENCE

- Webinars
- Video lessons
- Master classes.

The majority of respondents (on average 54%) mentioned the following:

developing educational resources and organising the work in educational environment based on ICT

 the operational principles and possibilities of using text editors during a lesson

 searching for digital resources to achieve learning objectives

- creating and using an email account

 using the Internet resources to assess students objectively and organise of joint learning and interaction

developing interactive tasks to involve students in the learning process.

Professional development programmes.

Two programmes have been developed for this activity:

• **Basic Level programme** was aimed at teaching how to use computers, mobile devices, available software for teaching and managing the educational process, and how to work with Kazakhstani educational resources and platforms. This programme allowed teachers to gain the skills of using Internet resources and services for teaching, and to improve their qualification.

• Advanced Level programme was aimed at teaching to integrate the Internet resources into teaching and learning process in order to organise an effective learning environment. This programme allowed teachers to develop their own materials for teaching and assessment processes.

Training teachers to be trainers

This activity involves a three-stage selection of trainers (according to their resumes, testing and interview). At the first stage 55 resumes provided by teachers of mainstream schools were selected.

50 teachers passed the test, and 40 of them were successful in the interviews as the last stage. 40 trainers were trained during the courses (36 of them were trained in Kazakh, and 4 - in Russian languages).

School professional development

These two programmes (basic and advanced) formed the basis for the professional development courses held from 29 July to 31 August 2021 attended by 3,600 teachers (3,000 in Kazakh and 600 in Russian):

- advanced level 200 teachers
- basic level 3,400 teachers.

For the development of digital literacy in the region, it is recommended as follows:

• 40 trainers who attended the courses for the development of ICT competencies should train and create a critical mass of teachers who are able to introduce and promote digital literacy among students

• the teachers trained at an advanced level should develop their own materials for teaching and assessment; introduce and integrate the Internet resources into the teaching and learning process for the effective organisation of learning environment

• the teachers should use the acquired competencies and disseminate the resources developed during the courses on various educational platforms.

School of Opportunity - Ziyatker (Intellectual)

The School of Opportunity Ziyatker was established by local executive bodies with NIS assistance for high school students (grades 9-11) based on the competitive selection in Atyrau oblast. One of the goals of the school is to increase the level of knowledge of gifted children of the region. This school will effectively implement the curriculum that includes 17 elective courses in Kazakh and Russian languages in science, mathematics, linguistics and humanities according to the SCSE of the Republic of Kazakhstan. These elective courses were designed to deepen and expand the content of high school subjects and extra-curricular activities (clubs) that will undoubtedly have a great impact on the formation of practical skills and holistic development of children (see Picture 34).



Figure 34. Opening of Ziyatker school

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NIS has developed and proposed the draft Charter of the school for the further consideration to open the school in time. School design and a classrooms plan were developed in order to achieve space efficiency. The need for classrooms and teachers was calculated in consideration of two languages of instruction for grades 9 and 10. The list of required educational equipment and furniture was created. At the same time, the following unscheduled methodological activities were conducted to improve the teaching practice and identify their needs:

20 lessons observation and providing feedback (for 8 teachers)

2 workshops on planning and effective teaching methods

 1 coaching session on the Competencies of an Effective Teacher

online surveys among teachers

 consultation of school leaders on organising educational process and intra-school monitoring.

An independent competitive selection for grades 9 and 10 has been organised.

A competitive selection of teachers has been organised.

Ziyatker teachers were trained to implement subject programme.

The training of teachers was conducted online in two stages, as the teacher recruitment into the school proceeded.

• 3 September 2021 saw the first stage of training of grade 9-10 teachers on the specifics of implementing renewed education content;

• 11-12 October saw the second stage of training of 12 school teachers.

The teachers were awarded certificates.

Elective courses development

17 elective courses were developed in Kazakh and Russian languages on science, mathematics, linguistics and humanities to deepen and expand the content of high school subjects:

Each elective course is accompanied by a disk with e-versions of course programme in Kazakh and Russian languages, additional materials (collection of problems. methodological guidelines, posters, workbooks, etc).

Supplementary education

Supplementary education is an integration of extracurricular activities and elective courses. Supplementary education meets children's needs; helps them reveal their personality and creative potential; provides psychological and social comfort; establishes relationship between students; encourages self-development and self-discipline; develops the potential of secondary education by deepening and applying knowledge gained during the classes. Extracurricular activities allow students to develop their discipline, organisation and selfcontrol. Joint classes teach students how to work in groups, strengthen their team spirit, develop sociability and responsibility not only to themselves, but also to other team members.

9 educational programmes have been developed to improve supplementary education:

- Engineering
- Unmanned aerial vehicles
- WEB design and development

• Video production, Youtube video production

- LEGO WEDO 2.0 building
- Design and architectural engineering
- Basics of Pottery Art
- Aesthetics of appearance
- Universal craftsman.
- Theses programmes also includes:

- **180 methodological materials** (educational materials, promo videos, presentations) in two languages

- Video tutorials (uploaded to YouTube channel)

- **18 professional development programmes** (9 programmes for trainers and 9 for teachers).

The training staff has been selected from among the best teachers of supplementary education organisations of the region for the further implementation of supplementary education programmes: a portfolio accompanied by reference letters from Education Departments, interviews. **50 candidates were selected to train trainers.** The workshop for trainers was held on 22 November 2021 and was attended by 50 trainers.

50 certified trainers on the implementation of supplementary education programmes allow organising supplementary education of students

according to modern requirements and standards in supplementary education organisations and schools.

To strengthen supplementary education in schools, it is recommended as follows:

- 50 certified trainers should conduct teacher trainings together with Regional Education Department and integrate 9 supplementary education programmes into learning process on a systematic basis: Engineering (applied mathematics, physics, computer science), Unmanned Aerial Vehicles, WEB Design and Development, Video production and YouTube Video Production, LEGO WEDO 2.0 Building, Design and Architectural Engineering, Basics of Pottery Art, Aesthetics of Appearance, Universal Craftsman

- refocus supplementary education to the needs and interests of students (Robotics, STEAM training, etc.)

- ensure the availability of supplementary education for all students.

Student well-being

A project group has been created to develop regulatory acts to ensure the well-being and safety of students according to international standards and national legislation (from the employees of Education Departments, methodological office, schools; approved by the order of Atyrau Education Department).

The following legal documents have been developed and submitted to Local Executive Authorities:

1. Regulation on the School Psychological Service

2. School Safety Rules

3. Requirements for the Office of School Psychological Service

4. Best Practices in Bullying Prevention

5. Regulation on the Psychological, Medical and Educational Committee (PMEC) in Schools

6. Policy on the Prevention of Sexual Exploitation, Abuse and Discrimination on Any Ground

7. Policy on the Prevention of Mistreatment of Students

The project group gave the following recommendations:

 To raise the awareness of submitted regulatory acts among school principals, teachers and psychologists (methodologists of the Education Department);

- To continue the operation of the project group on an ongoing basis.

Prevention and response to the violence against children within the Strong Family project.

School psychologists and teachers were trained under the Strong Family programme (training of facilitators).

Preparatory measures have been carried out to strengthen the child-parent relationship within the Strong Family project (at least 40 hours); providing them with the necessary educational and methodological materials:

16 Atyrau schools were visited. Purpose of the visit:

• presenting the Strong Family programme

• selecting teachers to participate in the training under the Strong Family programme

• developing a list of teachers from 16 Atyrau schools to participate in the training under the Strong Family programme.

The city of Atyrau saw a 4-day training from 17 to 20 August 2021 with the participation of an international trainer (UK), Deborah Allen. Participants: 48 teachers from 16 Atyrau schools and 6 methodologists from the methodological office of Atyrau Education Department. In total, 54 facilitators have been trained under the Strong Family programme.

The methodologists from the methodological office of the Education Department are assigned to 16 schools to monitor the programme. The facilitators can receive assistance via WhatsApp chats.

The period from 22 October to 31 October saw visits of 16 schools and a meeting with facilitators in order to provide methodological assistance and monitor the programme. The following difficulties were identified at the pilot stage:

• Parents involvement. Parents refused to participate due to their work; unwillingness to attend classes on Saturday and in the evening, since the classes were held outside school hours and in consideration of the working hours of legal representatives

• Parents failed to attend classes. 10 parents were expected to attend the classes

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in each school, however only 6 to 8 came on average.

• The activity is time consuming. Teachers conducted their classes at 18:00-19:00 after work and stayed late until 21:00-22:00. They also spent their private time from 9:00 to 13:00 at weekends and this affected their psychological and physical wellbeing.

• Low motivation of the programme participants. There is a risk of completing the programme at the pilot stage - the participants complained about tiredness; some facilitators did not want to continue the programme in the future and expressed their wish to launch such programmes in schools on a paid basis

• Further work on training trainers should proceed to develop the programme and increase its sustainability in the future.

The programme recommends the following:

- To introduce financial (extra payments, bonuses) and non-financial (days off, vacations) incentives for facilitators implementing the programmes in their schools

- To continue training for Education Department methodologists, trainers to undertake monitoring and provide methodological support for teachers introducing the Strong Family programme.

On 11 -12 November 2021 was an online workshop on the prevention of unintentional injuries and training of medical staff of 16 Atyrau schools to prevent unintentional injuries of students in schools **in order to implement a system of unintentional injury surveillance** (reporting system, training trainers, methodological support).

At the end of the workshop, the participants were provided with electronic methodological materials including PPT presentations in Kazakh and Russian languages, methodological materials on conducting injury surveillance of students in schools and explanatory notes on how to use the tools to conduct such surveillance. At the end of the training, 16 certificates were provided to school nurses and submitted to the Methodological office of the Education Department of the Atyrau oblast in December 2021.

It is recommended as follows:

- To attract Healthcare Department to the project implementation (give an appropriate order at the level of the regional akimat)

- To conduct monitoring of psychological and emotional state of teachers and students

- To improve professional development of school psychologists and social care teachers.

The following activities aimed at crisis assistance to students, suicide prevention, working with a risk group and early prevention of students' dropouts were conducted:

• On 20-24 September 2021 - 5-day workshop for 35 employees of educational organisations (4 modules: 2 offline and 2 online)

• On 8 October 2021- an intermodule training session for 32 school experts, 16 psychologists and 16 social educators to write cases for analysing difficult cases during the intervision.

• On 19 October - the 3rd module of the course on Intervision as a Form of Methodological Assistance in Solving Difficult Cases from the Practice of Psychologists and Social Care Educators.

• On 17 November - an intermodule session for 32 employees from 16 schools and 3 methodologists to conduct the intervision.

• 18 November - the 4th module of the course on the HEADSS assessment of psychoemotional state of adolescents; analysing and discussing cases using this tool in the situations of child abuse (see Picture 35).



Figure 35. Workshop

Biology teachers were trained to integrate the issues of **Reproductive Healthcare** into curriculum. A volunteer network was created among high school students for their further participation in the Republican Summer School of the UN Population Fund; training of trainers among high school students.

The period from 7 June to 11 June 2021 saw the peer-to-peer training for trainers from among the students of 16 Atyrau schools on

Reproductive Health of Adolescents and Young People in NIS Chemistry and Biology in Atyrau. Peer-to-peer training is a type of teaching and learning where young people share their knowledge, create a mindset and help develop safe behaviour skills among their peers by age and social status, as well as among those people having similar interests or exposed to similar risks.

The training held in Atyrau was the first activity aimed at the creation of Y-Peer volunteer network in Atyrau oblast. Y-Peer Youth Network was founded in 1999 with support from UNFPA. Currently Y-Peer unites over 500 organisations and thousands of young people around the world working dealing with issues on reproductive health and youth rights. This network brings young people together from Eastern Europe and Central Asia, the Middle East, North and East Africa and Southeast Asia. Y-Peers started its activity in Kazakhstan in 2003 in South Kazakhstan. (see Pictures 36-38).





Figures 36-38. Participants of the reproductive health training

5-day training held in Atyrau and addressed the issues of leadership, health and healthy lifestyle, sexually transmitted infections, contraception, responsible behaviour, gender and gender equality, bullying and other topics. On the last day of the training, participants conducted pilot trainings on selected topics.

The United Nations Population Fund (UNFPA) is a project partner. At the end of the training, the participants were awarded certificates and memorable gifts. According to the competitive selection results, 3 training participants took part in the Summer Leadership School organised with the technical and financial support of UNFPA.

Summer Leadership School was held from 22 to 27 August 2021 in Turkestan region.

School conduct trainings for their peers in schools (see Picture 39-40.





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Figures 39-40. Participants of Summer Leadership School

The period from 1 to 6 November 2021 saw the training for 32 teachers of biology, 16 teachers-psychologists and 16 social care school teachers on Valeology focusing on the issues of sexual and reproductive healthcare held in NIS of Chemistry and Biology in Atyrau.

The training programme addresses the issues of health, prevention of reproductive healthcare problems, infectious diseases, prevention of unplanned pregnancy, family planning, responsible parenthood and other topics. Moreover, the training included microteaching sessions aimed at developing such practical skills as goal-setting, planning, preparing and conducting classes addressing reproductive healthcare issues.

Infrastructure, learning environment

Submitting the list of required equipment, study materials, reference books, fiction, consumables to Local Executive Authorities

According to the analysis of educational activities of 50 schools in Atyrau region, a draft list of required educational equipment and consumables, lists of study materials, reference books and fiction has been prepared and submitted to the Methodological Centre of Atyrau region by letter No. 04-04-4/948 dated 28 September 2021.

Training on international approaches to the transformation and planning school learning environment in accordance with renewed content of education.

25-26 November 2021 saw a series of trainings for the employees of the education department, district and city education departments and methodological centre with

the participation of international experts and NIS staff addressing the issues of international approaches to the transformation of school learning environment and the issues of planning learning environment in accordance with general secondary education standards.

The workshop participants took the initiative and made their proposals on the introducing learning environment in schools and extended education organisations of the region.

25 November 2021 saw the opening of the workshop held in Atyrau Unaibai Kushekov Agrarian Technical College attended in total by more than 60 participants, including 30 teachers offline and another 30 via Zoom.

The participants got introduced with approaches how to study learning environment on the example of educational projects of the Moscow representative office of the World Bank. The topic of Transforming Learning Environment is addressed based on the materials that define the learning environment and the results of international studies. The workshop participants received the OECD Questionnaire Surveys for Schools to Improve the Quality of Learning Environment through joint Efforts that can be used to analyse school learning environment. The issue on "Solutions to design learning environment. The possibilities of reorganising space and functional facilities" has been addressed. This was dedicated to the possibility of implementing different projects related to transforming learning environment. The organisation of learning environment is shown by the example of the School of the Future in Kaliningrad region of the Russian Federation (see Pictures 41-42).





Figures 41-42. Workshop – Transforming Learning Environment

26 November 2021 saw the consideration of the topic - Planning Learning Environment for Effective Implementation of Renewed Curriculum. The participants got introduced with the methods for organising work on different subjects including effective solutions to the issues related to learning environment and conducted practical work on applying these solutions in chemistry, biology, Kazakh language, art and in school interior design. The international approaches to understanding the modern learning environment and its characteristics were considered on the example of Pinsky Centre for General and Extracurricular Education, Institute of Education of the Higher School of Economics, National Research University, Russia.

The OECD Questionnaire Surveys for Schools to Improve the Quality of Learning Environment

through Joint Efforts has been presented in more details. It can be used to interview school principals, teachers and students to analyse purposes of school learning environment. The participants learned how to conduct online survey using Google Forms as well as "School climate as a significant characteristic of the school ecosystem". They received links to materials including PPT presentations, videos and practical works.

The training on international approaches to transforming school learning environment and planning of learning environment in the context of undated curriculum for 60 teachers allowed them to familiarize with the main international comparative studies in the field of education and learn the differences in their approaches and content. The teachers learned how to extrapolate the results of the Republic of Kazakhstan and Atyrau region from the databases of international comparative studies and use the available data for analysis and interpretation. The training participants developed their basic skills of analysing data with use of SPSS, IDB Analyzer statistical software.

The joint regional project "Assistance to the Development of the Secondary Education of Atyrau Region" is aimed at the dissemination and exchange of best innovative practices of teachers of Nazarbayev Intellectual schools, secondary mainstream schools, Kazakhstani and foreign experts, and later has become an open dialogue platform for teachers and the entire school community of the Atyrau region.



Project with Khanty-Mansi Autonomous Okrug-Yugra of Russian Federation (KMAO)

October 2019 saw the Agreement on Cooperation and Exchange of Experience in Education signed by NIS and KMAO Education and Youth Policy Department.

The **professional development** courses were organised and **conducted** online for Yugra educators. These courses were developed based on professional development programmes that involve learning methods and technologies certified by ACQUIN (Germany): Effective Teaching and Learning (2020), Formative Assessment as a Modern Approach to the Assessment of Academic Achievements (2021).

The period from 2020 to 2021 saw 2 professional development programmes developed for KMAO Yugra mainstream schools teachers and attended by more than 900 Russian teachers. The course programmes are aimed at improving professional development of teachers to implement the ideas of effective teaching and learning and define the pedagogical effectiveness within the framework of the main activities of the teacher - organising educational process; planning and analysing classes; evaluating academic achievements.

The training was held on the CoE platform www.sdo.cpm.kz via Zoom conference. The course was held in synchronous and asynchronous formats. During the training, Russian teachers learned the concept, methods and techniques of formative assessment, and came up with tasks for assessment. The unique feature of the training is the fact that the completed tasks were implemented by teachers into the real learning in the classroom. This allowed teachers to see the practical value of the implemented changes.

The following two online master classes were held for the teachers as part of the continuation of the cooperation at the August meeting of the teachers of KMAO Yugra 2021 on the topic - Education as a National Strategic Priority for the Development and Formation of a Child's Personality and Interests in the Modern Educational System:

- Effective teaching and learning

- Research in the teaching practice.

K. N. Shamshidinova, the Chairperson of NIS Board addressed the August meeting of the teachers of KMAO Yugra 2021 as an invited international expert on the following topic: Criteria-based approach in assessment may solve the problem of distrust in the education system; CEP and CoE experts held the master classes (see Picture 43).



Figure 43. Participation of NIS in the August pedagogical conference of KMAO Yugra.

Cooperation with the Agency for the Presidential, Creativity and Specialized Schools Development under the Cabinet of Ministers of the Republic of Uzbekistan

The period from 18 April to 21 April 2021 saw the working visit of the delegation of the Agency for the Presidential, Creativity and Specialized Schools Development under the Cabinet of Ministers of the Republic of Uzbekistan (hereinafter referred to Agency) established in September 2019.

The meeting resulted in the Memorandum of Cooperation signed by K. N. Shamshidinova, the Chairperson of Nazarbayev Intellectual schools Autonomous Educational Organization and Amirullo Abdullayev, Deputy Director of the Agency (see Picture 44).



Figure 44. The end of the ceremony of signing the Memorandum

- The Presidential schools were established in Uzbekistan two years ago. Today there are four

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schools in the following cities: Tashkent, Khiva, Namangan and Nukus. Today, our strategical partners are Nazarbayev Intellectual schools and Cambridge University. We are interested in the experience of NIS that are currently recognised as one of the leaders of world education (Amirullo Abdullayev).

During the visit, the colleagues studied the priority areas in the Centre of Excellence, Centre for Pedagogical Measurements and Centre for Educational Programmes.

The main principles of NIS-Programme and its international recognition were discussed with the **Centre for Educational Programmes**.

Business processes in research management and professional development of teachers, as well as a case session on designing learning activities focused on the development of functional literacy of students were worked out together with the **Centre of Excellence**.

In the **Centre for Pedagogical Measurements**, our Uzbek colleagues expressed a great interest in the basic principles, components and procedures for a comprehensive assessment system, competitive selection, a balanced approach to formative and summative assessment.

The members of the delegation were also interested in such strategical topic in the modern education as accreditation and certification, international recognition, assessment system and the transition of the educational process to an online format.

This is not the first visit of the Uzbek delegation to Kazakhstan. During the previous visit (10 December 2020), the representatives of the Agency (Abdullayev Amirulla, Deputy Chairperson of the Agency and Farkhod Niyazov, Head of the International Cooperation Department) familiarized with the history, features and achievements of the NIS system and visited three Intellectual schools in the capital of Kazakhstan - School of Physics and Mathematics, International Baccalaureate and International School. A large package of issues was addressed during the work at schools in a variety of areas - the construction of buildings, the formation of a pedagogical staff, the creation of NIS-Programme, conducting of competitive selection, the organisation of elective courses and social practices, the cooperation with parents, the formation of a successful team and corporate customs.

The detailed analysis of the features of international accreditation, educational work and

Olympiads, as well as the features of creating friendly and safe learning environment for children was prepared especially for the delegation.

Our Uzbek colleagues called inspiration and motivation the best lesson in Nazarbayev Intellectual schools.

Amirullo Abdullayev, Deputy Director of the Agency emphasised the importance of cooperation with Nazarbayev Intellectual schools for the creation of the national educational project in Uzbekistan.

The World Bank Education Modernization Project: Improving the Assessment of Academic Achievements in Secondary Education of the Republic of Kazakhstan.

Currently, the Ministry of Education and Science of the Republic of Kazakhstan is implementing the reforms on the development of a more modern external assessment system (UNT and EAAA - External Assessment of Academic Achievements) within the framework of the comprehensive Education Modernization Project (hereinafter referred to Project) - Bringing the Assessment System in Line with the Updated Educational Content supported by the World Bank. It is planned to update the assessment format under the project according to international assessment standards:

 External Assessment of Academic Achievements (EAAA) will provide the assessment of functional literacy in linguistics, science (with cross-curricular links with biology, physics and chemistry) and mathematics focusing on the core competencies of the updated curriculum

 The Unified National Test will provide the assessment of thinking skills and academic readiness of school graduates for further study at higher education institutes.

The following activities were conducted during the project implementation:

 analysing the current assessment system in the Republic of Kazakhstan and reviewing the best international practices

 selecting and conducting trainings in two stages for more than 500 test developers according to international requirements (see Figures 45-47)

 developing about 4 thousand test tasks and their first approbation

 discussing requirements and capabilities of the National Testing Center to acquire and integrate IT platforms for test management.

The revised EAAA and UNT systems will create a more balanced assessment structure

for the system-wide improvement of primary and secondary education:

- improving curriculum standards
- strengthening educational policy

- improving student academic performance including the results in international studies.







Figures 45-47. Training of test developers

XII International Research-to-Practice Conference - Family, school and community: thinking and acting for a child.

The thematic platform "Jointly Developing Schools for the Well-Being of Children" was organised within the framework of the conference and covered 5 educational projects on the dissemination of NIS experience and professional development of teachers that were successfully implemented jointly with strategic partners.

The plenary part involved the discussion of the issues of training teachers, creating wellbeing in the learning environment, developing rural schools and promoting educational initiatives to improve the quality of education. The event was attended by more than 500 people. The participants of the platform had a chance to get acquainted with professional development projects for teachers such as Modernization of the educational content and the organization of educational process in the higher pedagogical college named after Z. Dosmukhamedov, Rural school, Together to success, Community of leading schools, Professional development of teachers of Karagandy region supported by Kazakhmys Corporation LLC.

The open dialogue of the platform participants allowed them to discuss the relevant issues such as change management in schools, the introduction of changes in teaching and learning, the development of digital and research skills of teachers, the interaction of Leading schools with partner schools to increase the teachers' potential.

The round table was conducted within the framework of the conference - Y. Altynsarin: Projection of Ideas from the Past to the Future attended by more than 300 people. Well-known local and foreign scientists spoke about the results of scientific research on the life and work of Y. Altynsarin. The round table revealed unknown facts from the life of the writer and his little-known works, which have become the national asset today.

Within the framework of the conference, The Centre of Excellence held a case-session "In the focus of attention - a school lesson" attended by more than 1000 participants. Hiroyuki Kuno, Professor, international expert, one of the WALS founders (Japan) was the key speaker of the conference.

He provided the participants with an expert assessment of their conclusions during the practical activities. The teachers engaged

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intensively in 10 session rooms. The focused observation of lessons and joint discussions allowed us to identify the skills required for conducting qualitative lesson observations and understand how to build a reflective analysis and determine the most effective methods of interpretation. The session also covered the results of a study conducted by the Centre of Excellence as part of the implementation of the Lesson Study approach in Kazakhstani schools; conclusions and recommendations; factors contributing to the changes in the teaching practices.

CONCLUSION

A highly effective education system is one of the main factors to ensure sustainable economic growth in any country and society.

The modern Kazakh society is characterized by social modernization and inclusion in global integration processes, where education occupies a leading position. Trends in education and the challenges facing the various levels of education cause the need to rethink their roles, functions and place in the education system and develop new approaches to their further development.

The full transition of the national education system to the renewed educational content imposes new requirements on the work of teachers within the competency-based approach in education and the formation of readiness to work in the context of increased individualization of the educational process.

NIS plans:

1) By 2023 to establish a network consisting of 2,000 Leading schools with network communities of principals, primary school teachers and subject teachers promoting educational innovations together with NIS. Building capacity of 2,000 Leading schools without increasing their number that allow us to personalize the methodological support to partner schools

2) To conduct research on the educational process and learning environment within the Rural School project upon requests by the regions with the development of professional recommendations for improving the work of rural schools

3) To support and introduce NIS-Programme primary school curriculum to AI SCHOOL

4) To create a separate module in Ustaz section on Online Mektep digital educational platform. This module is expected to include advanced-levelled tasks that will allow teachers to keep balance between teaching skills of solving standard and non-standard tasks. This will make possible to create a bank of tasks to use them at school and to get ready for Olympiads

5) To train a new category of school trainers - analysts by 2022

6) To prepare for the WALS international conference to be held in Kazakhstan in 2024.

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Appendix 1

Printed and Internet publications of CoE employees in 2021

			Publication	Place of publication		
No.	Author	Title	date	Printed publications	Link / PDF	
1	NIS press	Mukagali Makatayev-90 years old: the anniversary month has started in NIS Taraz	01.02.2021	Bilimdi El newspaper	https://bilimdinews. kz/?p=135224	
2	K. N. Zhamshidinova, The Chairperson of the NIS Board	Distance learning: experience and prospects	05.02.202	Kazakhstanskaya Pravda newspaper	https://www. kazpravda.kz/fresh/ view/distantsionnoe- obuchenie-opit-i- perspektivi	
3	NIS press	Smart Thursday: Zhuldyz Makatayev, the heir to a great writer	09.02.2021	Bilimdi El newspaper	https://bilimdinews. kz/?p=136101	
4	CoE employees and teachers of Leading schools	CoE - Leading Schools Today, special issue	16.02. 2021	Bilimdi El newspaper		
5	D. A. Aliaskarov, a trainer of CoE, NIS Shymkent	lf you are the teacher, look up to Ybyrai!	02.03.2021	Bilimdi El newspaper	https://bilimdinews. kz/?p=138572	
6	NIS press	Gulnar Apeyeva was honoured with the title of Distinguished Teacher of the Republic of Kazakhstan	19.03.2021	Bilimdi El newspaper	https://bilimdinews. kz/?p=141905	
7	S. T. Kamalova Director of the branch CoE in the city of Kyzylorda	Culture: from metacognition to schools	26.03.2021	Bilimdi El newspaper	https://bilimdinews. kz/?p=142662	
8	K. S. Almagambetov Methodologist manager of the branch CoE in the city of Pavlodar	Keep studying	03.04.2021	Saryarka Samaly newspaper	<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	

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		20 years of	12.04.2021	Dilimdi Cl	<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>
9	B. K. Asubayev Director of CoE branch in Almaty	30 years of independence: 30 names, 30 historical facts: Looking up to Shamsha	13.04.2021	Bilimdi El newspaper	https://bilimdinews. kz/?p=149696
10	Sh. K. Altayeva Contract staff of CoE in Taraz	Flipped classroom: a blended learning approach	19.04.2021	Bilim Shyragy newspaper	<page-header><page-header></page-header></page-header>
11	N. M. Tursynbekova Methodologist manager of CoE branch in Taraz	The Role of the Methodological Centre in NIS Experience Dissemination in Secondary Education	19.04.2021	Bilim Shyragy newspaper	
12	G. Ya. Kazygulova Senior manager of CoE branch in Taldykorgan	Effective support for students in reading is the key to success	26.04.2021	Bilim Shapagaty newspaper	https://bsh.kz/ news/16799
13	Абишева Р.Б. старший менеджер филиала ЦПМ в г. Талдыкоргане	Managing employee professional development within the new realities	26.04.2021	Bilim Shapagaty newspaper	https://bsh.kz/ news/16798
14	L. V. Obydenkina, Director of CoE branch in Uralsk conducted an interview with A. T. Aitpukeshev, Director of NIS PhM in Uralsk	Interest in pedagogical reality as an attitude of an educator, and practice of pedagogical research.	06.05.2021	Shamshyrak online platform of pedagogical excellence	https://fb. watch/6fMlq 7uYWw/
15	S. S. Kopbergenova Methodologist manager of CoE branch in Aktau	Discussion: the importance of lesson study methods	07.06.2021	Bilimdi El newspaper	https://bilim dinews.kz/? p=157564

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16	A. Zh. Yegizbayev Director of CoE branch in Karagandy	It is necessary to apply key ideas in practice	10.06.2021	Izdenis newspaper	<image/>
17	S. B. Ispussinova Deputy Chairperson of NIS Board	The professional development of teachers today	18.06.2021	Kazakhstanskaya Pravda newspaper	https://www. kazpravda.kz/ fresh/view/o- professionalnom- razvitii- kazahstanskih- uchitelei-rasskazala- zampred-aoo-nish?fbc lid=lwAR2qPMv0thP8 kTn6mgGyvex8vcgCX izdQzhnbpCkZEscYbR tw01mS1md9Ps
18	NIS press	NIS saw a meeting with Murat Auezov	06.09.2021	Bilimdi El newspaper	https://bilimdinews. kz/?p=170193
19	CoE	New solutions to support rural schools	06.10.2021	Bilimdi El newspaper	https://bilimdinews. kz/?p=172088
20	Zh. Zh. Kabdykarimova Director of Centre of Excellence	Leadership in the professional development of teachers	18.11.2021	Kazakhstanskaya Pravda newspaper	https://www. kazpravda.kz/ news/obshchestvo/ liderstvo-v- professionalnom- razvitii-uchitelei
21	I. L. Entina Head of Methodology Department	Always on trend: we teach in step with the times	09.11.2021	Bilimdi El newspaper	https://bilim dinews.kz/? p=176655
22	NIS press	Shamshyrak: the success history of Ospan Suleymenuly	10.11.2021	Bilimdi El newspaper	https://bilim dinews.kz/? p=176879
23	Nazarbayev Intellectual school of Chemistry and Biology in Almaty	The directors of mainstream schools of Atyrau participated in the training held in NIS Almaty	15.11.2021	Official Facebook page	https://www. facebook.com/ 126511 627697673/ posts/15828 570020631 21/?d=n
24	Nazarbayev Intellectual school of Physics and Mathematics in Almaty	The directors of mainstream schools of Atyrau visited Nazarbayev Intellectual school in Almaty	15.11.2021	Official Facebook page	https://www. facebook.com/ groups/5261 82284253518/ permalink/164 9405961931139/
25	NIS press	Olzhas Suleimenov: teacher is the most important profession	30.11.2021	Bilimdi El newspaper	https://bilim dinews.kz/? p=179144

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26	Zh. Zh. Kabdykarimova Director of Centre of Excellence	Leadership in teacher professional development	07.12 2021	Egemen Kazakhstan newspaper	https://egemen. kz/article/298351 -mughalimninh- kasibi-damuyndaghy- koshbasshylyq
27	Zh. Zh. Kabdykarimova Director of Centre of Excellence	Honour your teacher in the independent country	14.12.2021	Bilimdi El newspaper	<image/>

Appendix 2

The opinions of third parties on Centre of Excellence activity in the national and regional printed publications in 2021

			Publication	Place of publication	
No.	Author	Title	date	Printed publications	Link / PDF
1	Interviewer - Nurlan Tlegenuly Sholpan Karinova, Vice-Minister of the Ministry of Education and Science of the Republic of Kazakhstan	Education is being enriched by new developments	16.02.2021	Bilimdi El newspaper	https:// bilimdinews. kz/?p=137209
2	L. Zh. Tynyshbayeva, Deputy Director for pastoral work of the Karaukeldi secondary school No.3, the leading school coordinator Aktobe region, Bayganin district	Leading school is a platform for success	23.02.2021	Bilimdi El newspaper	https:// bilimdinews. kz/?p=137961
3	B. B. Mussabayev, Principal of Kozhabergen zhyrau secondary school, North Kazakhstan region, Zhambyl district	We are teachers who learn by teaching	25.02.2021	Bilimdi El newspaper	https:// bilimdinews. kz/?p=138175
4	A. T. Azhmuratov, Principal of Korgantuz secondary school, Aktobe region, Shalkar district	We have presented the work of rural teachers as a leading school at the regional level	25.02.2021	Bilimdi El newspaper	https:// bilimdinews. kz/?p=138185
5	K. A. Soltanalinova, Principal of Abay Kunanbayev secondary school, Pavlodar region, Aktogay district	Leading school: The burden lifted by common efforts is light	01.03.2021	Bilimdi El newspaper	https:// bilimdinews. kz/?p=138820
6	G. D. Yerzhanova, Deputy Principal of A. S. Pushkin secondary school No.1, Shymkent	Leading school: the importance of an internet community	19.03.2021	Bilimdi El newspaper	https:// bilimdinews. kz/?p=141872
7	G. Y. Sikhymbayeva, Principal of Ospankul Menayakuly secondary school, East Kazakhstan region, Ayagoz district, Barshatas village	Leading school: following in the footsteps of the best	21.03.2021	Bilimdi El newspaper	https:// bilimdinews. kz/?p=142235
8	G. Turmanbetov, methodologist of the educational and methodological centre for the development of education of Ile district, Almaty region	Teacher professional development as a form of training	24.03.2021	Bilimdi El newspaper	https:// bilimdinews. kz/?p=142373
10	Adam Guryev	Together to success	11.05.2021	Bilimdi El newspaper	<image/>
11	Asset Syzdykov	Round table	06.07.2021	Bilimdi El newspaper	https:// bilimdinews. kz/?p=160931

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12	L. M. Turkestanova	Will robots replace teachers? Educational tour from Kazakhmys Corporation	06.07.2021	Bilimdi El newspaper	https:// bilimdinews. kz/?p=161070
13	Asset Syzdykov	Winners of the competition "Education in the new reality"	06.07.2021	Bilimdi El newspaper	
14	Dana Lee	Round table NIS discussed the role of assessment in the quality of education	26.10.2021	Bilimdi El newspaper	https:// bilimdinews. kz/?p=174720
15	Teachers of the country: 1) Roza Magperova, Maths teacher in a secondary school No.27, Petropavlovsk 2) Torgyn Ibragimova, primary school teacher in a secondary school No.10, Kostanay 3) Tatyana Rassokhina, Chemistry teacher in a gymnasium school No.47, Nur-Sultan 4) Irina Romanenko, Russian language and literature teacher of in a regional specialized IT-school- lyceum, Ust-Kamenogorsk 5) Assylzhan Baymenova, History teacher in a secondary school No.32, Petropavlovsk 6) Inabat Dzhanadilova, methodologist in a Yerketay nursery No.7, Aktobe region, Khromtau district 7) Elvira Kaparova, Methodologist and innovator in a Zhumbaktas nursery No.30, Atyrau	Learning to be successful	26.10.2021	Bilimdi El newspaper	https:// bilimdinews. kz/?p=174859
16	Teachers of the country: 1) Amanzhol Issabekov, director of the methodological office in Zhelezinsk education department, Pavlodar region 2) Sagida Akhmetova, director of the methodologist office of Zhaksynsk education department, Pavlodar region 3) Aray Tobykova, teacher of Russian language and literature of A. Yermekov mainstream school No.2 in Karkaralinsk, Karagandy region 4) Roza Turmanova, Biology teacher in a secondary school No.49, Ile district, Almaty region.	Developing skills by sharing ideas	26.10.2021		https:// bilimdinews. kz/?p=175930

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