NAZARBAYEV INTELLECTUAL SCHOOLS AEO

ANNUAL REPORT

FOR 2016

PART 1

NIS AEO ACTIVITY
2016

We are about to finish the transition from a resource economy to a knowledge and innovation one...

Our primary concern needs to lie in **the development of human capital** in the developing and poorest countries. Country development is only possible so long as there are literate, educated, healthy, and venturous people. We know from experience how much patience, knowledge, and investment it takes to build effective education and healthcare.

Human capital investment has been our main priority and it will continue to be such...

As for the social area, we will **keep actively investing in human capital.**

President of Kazakhstan N. Nazarbayev
at the IX Astana Economic Forum
26.05.2016

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On 25 March 2016, at the first session of the sixth convocation of Parliament, the President of Kazakhstan Nursultan Nazarbayev noted: "Some time ago, I announced there should be 20 Intellectual Schools in Kazakhstan. Now, they all are in operation. This is a significant movement for Kazakstani school education. Those schools are where our new educational content is being piloted. And the piloting has already shown some good results..."

ADDRESS OF NIS AEO CHAIRPERSON KULYASH SHAMSHIDINOVA

Dear colleagues, parents, and partners!

For NIS, 2016 was indeed the year of the 25th anniversary of Independence.

NIS has travelled a long way since 2008. With the best national and international past experience in mind, we have created the Intellectual Schools, with a new teacher development programme, educational content, and assessment system.

Having established the basic NIS infrastructure all over the country by 2015, we started a transition to sustainable development and country-wide best practice transference.

It is of note that the two NIS Astana schools have received Council of International Schools accreditation and that a further 13 schools are also candidates for accreditation. This achievement is illustrative of the high quality of the educational services rendered by us and of our compliance with international standards.

Our graduates enter the best Kazakhstani and foreign universities.

Via best practice transference, NIS modernizes the country's educational system. A new standard of educational programmes has been established as a result of a joint effort made by NIS, the Altynsarin NAE, and the best Kazakhstani scientists and practicing teachers.

More than 85 thousand teachers have received specialized training in order to ensure the successful implementation of the educational reforms undertaken. 80 trainers and 3 thousand comprehensive school teachers have received specialized training through the implementation of an elective course of Robotics.

The new educational content was introduced on 1 September 2016 in every Grade 1 classroom in 7160 Kazakhstani schools.

School-university interaction in the area of educational programme alignment has been seeing an organized enhancement. This process is to ensure the continuity of educational programs and facilitate NIS principals joining university supervisory boards.

With NIS schools having become local resource centers, the process of best practice transference has witnessed a closer cooperation between NIS and local executive authorities.

On behalf of the NIS Board, I would like to express gratitude to our partners for their cooperation, and to the NIS team for their devotion and high level of expertise!

BRANCHES OF NIS AEO

1	Center of Excellence Private Entity	37a, 31 street, Astana; tel: 8 (7172) 23-57-50 site: www.cpm.kz
2	Educational Resource Centre Private Entity	37a, 31 street, Astana; tel: 8 (7172) 23-57-73 site: erc-nis.kz
3	Directorate of Nazarbayev Intellectual Schools Private Entity (under construction)	37a, 31 street, Astana; tel: 8 (7172) 23-58-24
4	Center for Educational Programs	37a, 31 street, Astana; tel: 8 (7172) 42 10 11 site: www.cep.nis.edu.kz
5	Center of Pedagogical Measurements	37a, 31 street, Astana; tel: 8 (7172) 23-57-66 site: cpi-nis.kz
6	NIS Almaty PhM	145, Zhamakayev street, Almaty 8 (727)3 31-01-04 Site: fmalm.nis.edu.kz
7	NIS Almaty ChB	2, Yelibayev street, Almaty Tel: 8 (727)3 31-01-10 Site: hbalm.nis.edu.kz
8	NIS Astana PhM	37, 31 street, Astana 8 (7172) 55-98-01 Site: ast.nis.edu.kz
9	NIS Astana	35, 31 street, Astana 8 (7172) 55-80-33 Site: nisa.edu.kz
10	NIS Aktau ChB	District 33, Aktau Tel: 8 (7292) 70-10-66 Site: akt.nis.edu.kz
11	NIS Aktobe PhM	District Batys 2, Aktobe Tel: 8 (7132) 70-47-80 Site: akb.nis.edu.kz

12	NIS Atyrau ChB	22, 11 street, Nursaya district, Atyrau Tel: 8 (7122) 55-85-51 Site: atr.nis.edu.kz
13	NIS Karaganda ChB	62, Shakhterov avenue, Karaganda Tel: 8 (7212) 55-88-80 Site: krg.nis.edu.kz
14	NIS Kokshetau PhM	59, Mirzoyan street, Kokshetau Tel: 8 (7162) 25-31-40 Site: kt.nis.edu.kz
15	NIS Kostanay PhM	239, Gagarin street, Kostanay tel: 8 (7142) 999-747 Site: kst.nis.edu.kz
16	NIS Kyzylorda ChB	8, Sultan Beybarys street, Kyzylorda Tel: 8 (7242) 55-11-51 Site: kzl.nis.edu.kz
17	NIS Pavlodar ChB	16/2, Tkachov street, Usolsky district, Pavlodar Tel: 8 (7182) 733-000 Site: pvl.nis.edu.kz
18	NIS Petropavlosk ChB	22a, Ibrayev street, Bereke district, Petropavlovsk Tel: 8 (7152) 55-97-22 Site: ptr.nis.edu.kz
19	NIS Taldykorgan PhM	47, Karatal street, Taldykorgan Tel: 8 (7282) 21-98-62 Site: tk.nis.edu.kz
20	NIS Taraz PhM	266, Domalak Ana street, Aray 2, Taraz Tel: 8 (7262) 99-98-55 Site: trz.nis.edu.kz
21	NIS Semey PhM	32, Kabylbayev street, Semey Tel: 8 (7222) 53-24-33 Site: sm.nis.edu.kz
22	NIS Uralsk PhM	16, Moskovskaya street, UralskTel: 8 (7112) 22-27-04Site: ura.nis.edu.kz

23	NIS Ust-Kamenogorsk ChB	43/1, Komsomolskaya street, Ust-Kamenogorsk Tel: 8 (7232) 60-40-03 Site: ukk.nis.edu.kz
24	NIS Shymkent PhM	6, Elitny Gorodok, Akzhayik district, Shymkent Tel: 8 (7252) 29-30-06 Site: fmsh.nis.edu.kz
25	NIS Shymkent ChB	1-A, Nursat district, Shymkent Tel: 8 (7252) 42-51-70, 8 (7252) 42-50-96 Site: hbsh.nis.edu.kz
26	International School Astana	32/1, Turkestan, Astana 8 (7172) 91-61-77 Site: isa.nis.edu.kz
27	Republican Physics and Mathematics School non-profit joint-stock company	2/1, Turkistan steet, Astana Tel: 8 (717)2 79-72-74 36, Bukhar Zhyrau boulevard, Almaty Tel: +7 (727)3 95-01-83; 3 95-01-85; 3 95-01-77 Site: www.fizmat.kz, www.izho.kz

KEY EVENTS IN 2016

JANUARY

Corporatisation of the Republican Physics and Mathematics School non-profit joint-stock company

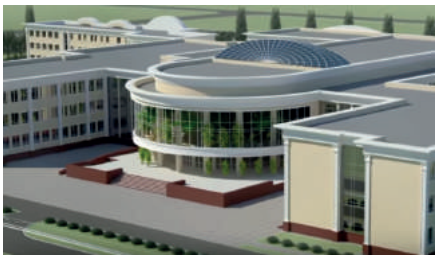
MARCH

President of Kazakhstan N. Nazarbayev visits NIS Aktobe

NIS Astana receives international accreditation and CIS membership.

COUNCIL OF INTERNATIONAL SCHOOLS

OCTOBER



The International School Astana building is put into operation.

The Astana branch of Republican Physics and Mathematics School is opened.

NIS Astana PhM receives international accreditation and CIS membership.

Azhibayeva Zadyra, NIS Kyzylorda teacher, receives the 2016 Best Kazakhstani Teacher award.

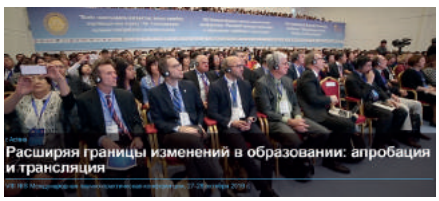
The NIS Semey PhM building is put into operation.

ОКТЯБРЬ

More than 750 delegates came from from 190 national and international educational organizations of 15 countries.

From 27-28 October 2016, the VIII International Research-to-Practice Conference Taking Change to Scale in Education: Approbation and Translation'.

Leading experts discussed changes in education.



НОЯБРЬ

The National Robotics Team's Robotized Orbital Station for Space Debris Destruction project receives the WRO Creativity Award for creativeness and innovation.

ДЕКАБРЬ

Open Day at NIS

Guided tours and creative hobby groups for 4000 comprehensive school learners and their parents. The tours and groups focused on the areas of science, technology, mathematics, the arts, and engineering.

FACTS

13 824
Learners

2 071
Graduates

Academic performance rate of
100%

Білім сапасы
Knowledge quality rate of
92,4%

2071 graduates of 16 NIS schools took IELTS.

52% graduates achieved an IELTS score of 6 or above.

11% graduates achieved a very strong IELTS score of 7 or above.

SAT-1

32% 19 graduates (30% of the total number of graduates who took the test) scored 1800 or higher.

50% 32 graduates (50%) scored 1600 or higher.

SAT-2

6% 32 graduates (50%) scored 1600 or higher.

1814 (88%)

graduates (88%) entered prestigious national and foreign universities on a scholarship basis, with 179 graduates receiving international scholarship in 22 countries worldwide.

401 (19,4%)

401 graduates (19.4%) entered Nazarbayev University, with 36 allowed to bypass the Foundation programme, and enrolled straight into First Year. One out of every two scholarships offered were received by an NIS graduate.

224 (11%)

graduates (11%) entered universities in countries either close to Kazakhstan or non-CIS countries.

NIS staff:

2720

- **2 512** Kazakhstani
- **208** international

1107 **teachers and** **12** principals have an IELTS score of 5 to 8:

- **303** Physics, Chemistry, Biology, and ICT teachers;
- **360** English and Global Perspectives teachers;
- **444** other teachers;
- **12** principals.

85 teachers received a trainer certificate in **2016**.

We have **454** certified trainers in total.

INTERNATIONAL CONTEST AND OLYMPIAD WINNERS

ANEL ORAZGALIYEVA

(NIS Ust-Kamenogorsk) won a silver medal at the 27th International Biology Olympiad (Hanoi, Vietnam). As a result, Anel received an official invitation to free education?? at New York University, Abu Dhabi. The Olympiad was competed in by 252 participants from 65 countries.

ANTON MORGUNOV

(NIS Taldykorgan) won a silver medal at the International Chemistry Olympiad (IChO). He also won a bronze medal at the 50th International Mendeleev Olympiad (Moscow, Russia).

ARTEM FEDOROVSKY

(NIS Pavlodar) took first place at the X All-Russian School Olympiad with 'Nanotechonology is a Breakthrough to the Future' (in both the remote and on-site rounds).

AYBEK TUGELBAYEV

(NIS Ust-Kamenogorsk) won the Moments of Happiness... or Periods of Unhappiness Award at the Feeling Good – Feeling Bad International Animation Movie and Clip Contest (Vienna, Austria).

AZIZ TALAPOV

(NIS Uralsk) won a silver medal at the Archimedes 2016 XIX International Inventions and Innovative Technology Salon with his Wind-Power Unit with a Fan-Shaped Wind Concentrator (Operating Laboratory Model). The school was also given a special Young Inventor award.

DIYAR TULENOV

(NIS Pavlodar) won a bronze medal at Tuymaada-2016 XXIII International Mathematics, ICT, Physics, and Chemistry Olympiad and a bronze medal at the 13-th International Junior Physics Olympiad .

GEORGIY PAK

(NIS Taldykorgan) won a silver medal at the XII International Zhautyk Olympiad and a bronze medal at the Tuymaada 2016 XXIII International Mathematics, ICT, Physics, and Chemistry Olympiad.

KAZHYMURAT AKNAZAR

(NIS Almaty) won a silver medal at the XII International Zhautyk Olympiad. He also wrote a scientific article - 'Bernstein Sato Polynomials in Algebraic Geometry', the abstract for which was accepted by the European Congress of Mathematics, a conference for leading European mathematicians. He was invited to present his work at the VII European Congress of Mathematics (Berlin, Germany).

LATISH ABILPASIM

(NIS Kyzylorda) won a medal at the International Zholdasbekov Competition in Mathematics and Mechanics. In his work, he conducted a geometry investigation and created a new mathematical model that used equations to solve design problems.

OLZHAS SEYLKHANOV

(NIS Ust-Kamenogorsk) received an Honorable Mention diploma at the IX I-SWEEEP 2016 International Olympiad (Houston, USA).

SEYDALY SULTANALI

(NIS Astana) received an honorary certificate at the Tuymaada 2016 XXIII International Mathematics, ICT, Physics, and Chemistry Olympiad.

TENGIZ IBRAYEV

(NIS Semey) won a bronze medal in Physics at the XII International Zhautyk Olympiad and received an honorary certificate at the Tuymaada 2016 XXIII International Mathematics, ICT, Physics, and Chemistry Olympiad.

ZHALGAS ZHUMABAYEV

(NIS Astana PhM) took first place at the XVII Olympiad of Research and Learning Projects, Space Technology section with 'Interplanetary Flights and Space Projects' (Korolev, Russia).

UNIT 1.

ADMINISTRATION AND MANAGEMENT

UNIT 1. ADMINISTRATION AND MANAGEMENT

The following was done in order to achieve higher performance network-wide:

- 5 meetings of the NIS Board of Trustees, which addressed a number of NIS issues;
- 54 meetings of the NIS Board of Directors, which addressed 371 issues (as compared to the previous year's 60 meetings and 303 issues);
- The Principals' Council and School Board of Trustees were organized;
- more than 19 legal acts were passed;
- 54 legal acts were amended and/or supplemented;
- 86 enquiries from individuals and organizations were replied to;
- 1430 hotline phone calls were responded to;
- 696 articles or reports were shared with the public on the work of NIS and its branches: 173 of these (24.9%) were in print media; 260 (37.4%) were on television and radio; and 263 (37.8%) came from online media and news portals;
- NIS gained 50% of Republican Physics and Mathematics School shares[1], with RPHS therefore earning the status of an Intellectual School organization[2].

1 Republic of Kazakhstan government decree #25 dated 21 January 2016

2 Republic of Kazakhstan law 'On the Status of Nazarbayev University, Nazarbayev Intellectual Schools, and Nazarbayev Fund', article 1, sub-paragraph 2

UNIT 2.

STUDENT POPULATION

UNIT 2. STUDENT POPULATION

2.1. SCHOOLS AND STUDENTS

As of December 20th 2016, **there are 20 Intellectual Schools** functioning in all regional centers, as well as the cities of Astana, Almaty, and Semey, with **13 824** learners attending nationwide.

As of October 1st 2016, these can be categorized as follows:

1 612 (12.1%) learners are from multiple-child and needy families, 2 097 (16.1%) learners are from single-parent families, 383 (1.6%) learners have elderly parents, and 280 (2.1%) learners have one or more handicapped parents.

There are 30 (0.2%) disabled learners, 28 (0.2%) children living with guardians, and 1 learner from an orphanage.

2 667 (19.9%) learners are children from rural areas, villages and small towns.

There are **998** learners at the **International School Astana**, and **1 794** learners at the Republican Physics and Mathematics School (including 921 learners in the Astana branch).

2.2. SELECTION PROCESS AND ADMISSIONS

2016 saw NIS and its strategic partners CITO and CTY jointly administering nationwide selection tests for **16 052** Grade 6 learners from comprehensive schools and NIS Kokshetau and Taldykorgan. **3 085** candidates received the Orken First President of Kazakhstan Leader of the Nation Scholarship (hereinafter 'the Scholarship').

932 test items were created for the admissions test, with the aim of measuring the learners' knowledge and functional skills, numerical competencies, and spatial intelligence.

Besides this, 2016 saw **6 additional assessments** for a place in

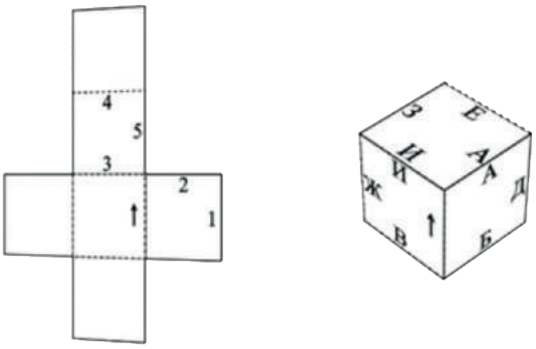
- Grade 1 at NIS Kokshetau and Taldykorgan (80 out of 439 candidates accepted)
- Grade 4 at NIS Kokshetau (8 out of 28 candidates accepted);
- Grade 9 at NIS Ust-Kamenogorsk (8 out of 22 candidates accepted);
- Grade 10 at NIS Astana, Atyrau, Kostanay, Pavlodar and Ust-Kamenogorsk (17 out of 17 candidates accepted, on a paying basis);
- Grade 11 at NIS Astana, Atyrau, Karaganda, Kokshetau, Kostanay, Pavlodar, Semey, and Taraz (22 out of 22 candidates accepted, on a paid basis).

A total of 16,580 candidates took part in the selection assessments, with 3 220 of them entering NIS (19.4%).

Ensuring equal opportunities for NIS candidates

It is an NIS policy that candidates have equal opportunities, and that the selection process be both transparent and accessible.

- NIS regulations for selection and scholarship recipient results are available with no access restriction at the official NIS website (www.nis.edu.kz).
- The Admissions Test is conducted simultaneously in all regions, as stipulated by international standards.
- The automated-software-based psychometric analysis used across the country ensures that all work is checked in the same manner, with each candidates' unique identification number, test variant, language of instruction, gender, and answers chosen entered anonymously. This approach ensures objectiveness and eliminates the possibility of complaints about results.
- A special candidate instruction video was created to ensure equal Grade 7 admissions conditions.
- A sample 4 subject testing procedure was created to provide Grade 6 learners with the opportunity to get prepared for the Grade 7 selection assessment, introducing them



- to the selection process and format of the web-site, allowing candidates to register with the support of official representatives, and to see their sample admissions results.

Numbers of applicants for enrollment to Grade 7 in the 2015-2016 academic year

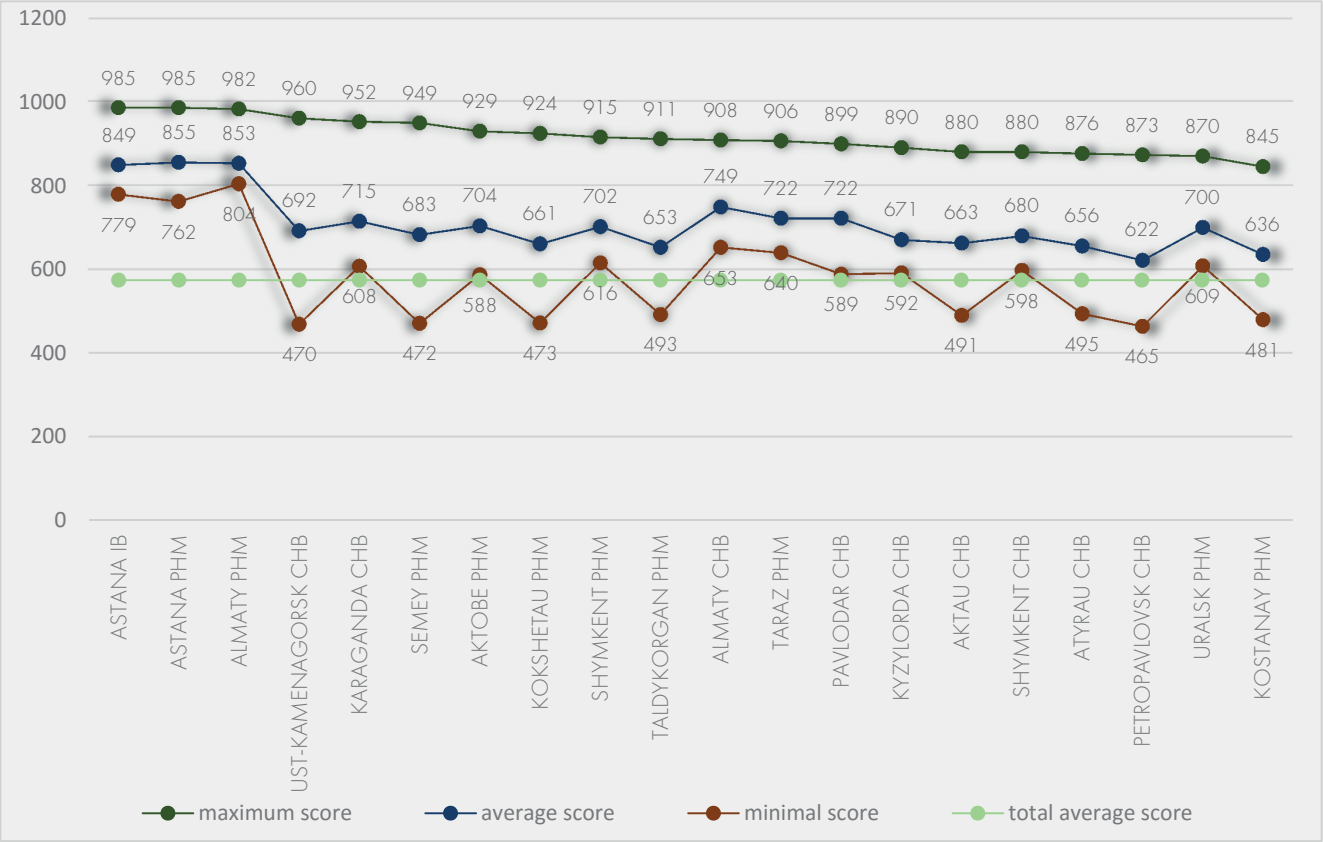
The number of candidates per place increases with each year. In the current year, there were 6.7 applicants per place.

Table: Trend in the number of candidates for Grade 7 entry

Year	Number of candidates	Applicants per place
2014	14 458	5,8
2015	13 540	6,1
2016	16 052	6,7

In certain regions (Kyzylorda, Shymkent, Astana, Taraz, and Almaty), there were as many as 10 to 17 applicants per place.

Image. Subject Test results by schools and languages



The maximum score in:

- Mathematics (400) was achieved by 15 candidates in Almaty;
- Kazakh and Russian (200 each) was achieved by 23 and 34 candidates respectively in Almaty;
- English (200) was achieved by 34 candidates in Astana.

Subject Test results

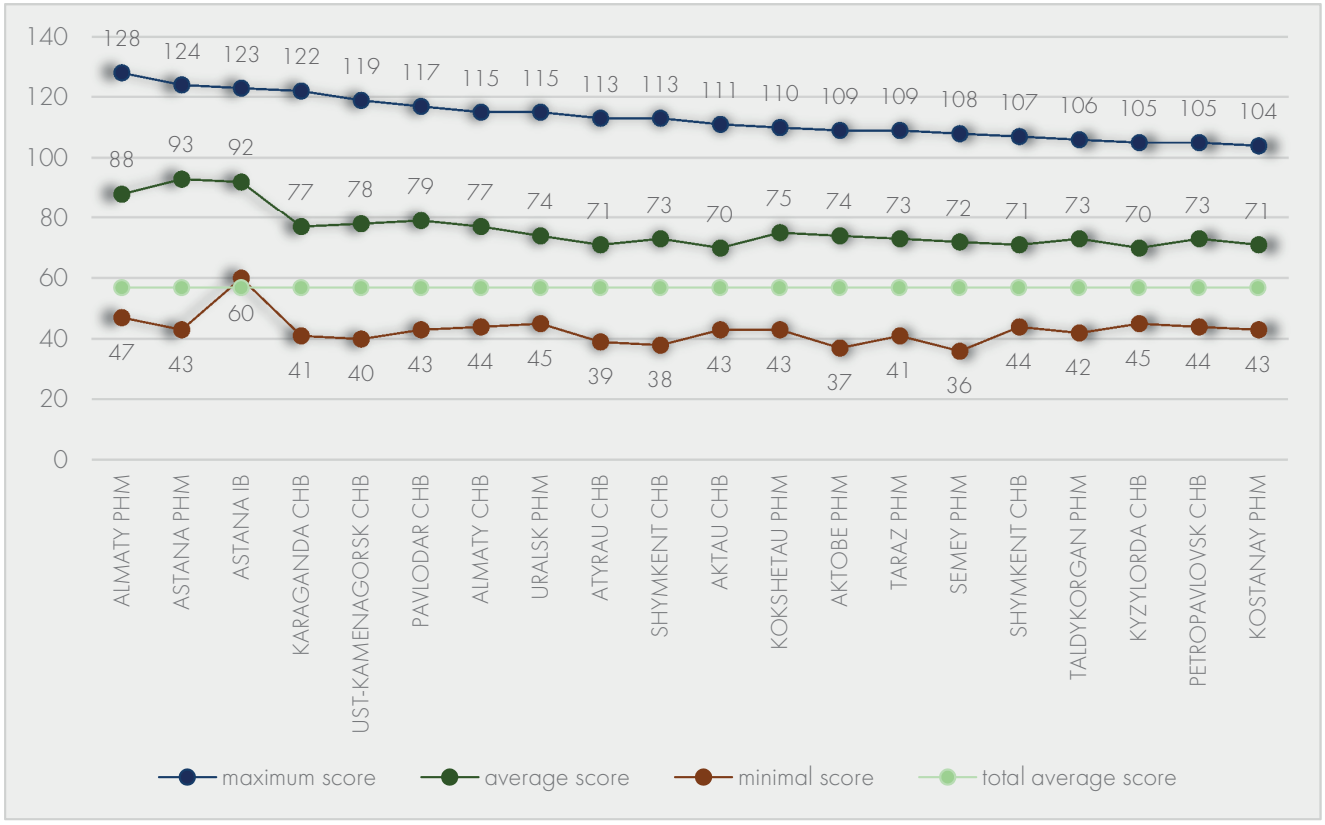
The average score on the Subject Test was 543 out of a maximum possible score of 1 000. The highest average score among scholarship-winners (855) was at Astana PhM.

The highest score (985) was achieved by candidates in Astana. The highest minimum score among scholarship-winners (804) was achieved by a candidate in NIS Almaty. The lowest minimum score among scholarship-winners (465) was achieved by a candidate in Petropavlovsk.

Ability Test results

The average score on the Ability Test was 57 out of a maximum possible score of 134. The highest average score among scholarship-winners (93) was seen by Astana PhM. The highest score (128) was achieved by a candidate in Almaty. The highest minimum score among scholarship-winners (60) was achieved by a candidate in Astana. The lowest minimum score among scholarship-winners (37) was achieved by a candidate in Aktobe.

Diagram: Ability Test results by schools and languages



The Highest Ability Test score:

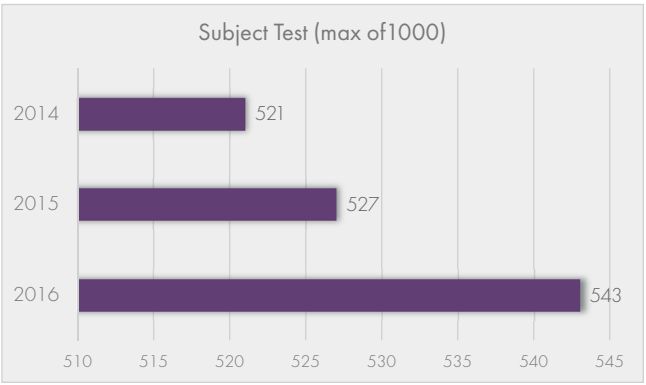
- in the numerical competencies strand, with 56 out of 60, was achieved by candidates in Astana and Almaty;
- in the spatial thinking strand, with a score of 74, was achieved by a candidate in Astana.

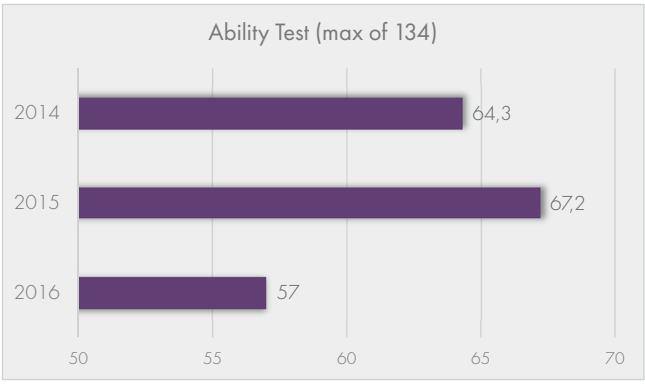
Based on the Ability Test results, the learners were differentiated as follows: 6.1% as extremely able, 27.4% as very able, 62.9% as able, and 3.6% as able enough.

Information like this enables the Schools to differentiate the learning process, thus ensuring individual development paths.

This year has seen the average Subject Test score grow by 16, and the average Ability Test score drop by 10.2.

Diagram: Subject Test and Ability Test average in 2014, 2015, and 2016





The Admissions Test results registered over the last few years were recently analyzed to evaluate the predictive validity of the Admissions Test. The analysis aimed to check whether the system had really chosen candidates of high potential in mathematics and the natural sciences. The analysis results showed the Admissions system to have a high predictive validity.

The Admissions system and the results of the psychometric and validity analysis representing the quality of the test items were presented at the international conferences of the Association for Educational Assessment Europe (Cyprus), the International Association for Educational Assessment (South Africa) and the NIS International Research-to-Practice Conference 'Taking Change to Scale in Education: Approbation and Translation''.

2.3. VIRTUAL AND VACATION SCHOOLS

Supported by the local educational authorities, NIS continued the Virtual School and Vacation School projects that provide Comprehensive school learners with an opportunity to get prepared for their Admissions Tests.

VIRTUAL SCHOOL

The Grade 5 registration was conducted in March 2016, and the Grade 6 registration was conducted in September 2016.

During the reporting period, 4 519 learners from different secondary education organizations took part in the Virtual School.

VACATION SCHOOL

Learners who are successful in the Virtual School are invited to their local NIS school for a full-time Vacation School programme focusing on Mathematics, Kazakh, Russian, and English.

Thus, 84.9% Grade 5 Virtual School participants were invited to attend the Vacation School.

1 236 Grade 5 learners and 2 285 Grade 6 learners took part in the Vacation School.

AS A RESULT OF THIS:

- 2 627 Grade 6 Virtual School participants enrolled in the Grade 7 Admissions Process;
- more than 23% (592) of Virtual School participants entered NIS;
- more than 28% (519) of Vacation School participants entered NIS.

UNIT 3.

PEDAGOGICAL STAFF

UNIT 3. PEDAGOGICAL STAFF

2 512 local and **208** international teachers are employed in Nazarbayev Intellectual Schools nationwide.

3.1. TEACHER SELECTION PROCESS

NIS recruits pedagogical staff on a competitive basis.

2015 saw the subject knowledge test become automated.

2016 saw the introduction and piloting of an electronic candidate registration system and the upgrade of the safety system.

The selection process for local teachers

During the reporting year, NIS continued recruiting staff.

A total of **3 673 candidates** took part in the selection process. **472 of them** were recommended for employment at NIS. Of these, **337** were recommended for a teacher's position, and **415** were reserve-listed.

The competition for selection was high, with 7 applications per vacancy.

Once again, the selection monitoring showed areas for improvement within applying personnel. Therefore, approved candidates need to receive further training in order to raise their proficiency levels and close the gap between the abilities of each approved candidate and the innovation-specific NIS requirements (encouraging multilingualism, using information and communication environment).

Recruitment of international teachers

In order to support the trilingual environment and build the local teachers' capacity in teaching subjects in the English language, international teachers were hired.

The recruitment process is supported by strategic partnerships with Teach Away Inc. (Canada), Teachanywhere-Ranstad Education Ltd. (United Kingdom), Search Associates (United Kingdom), and Teacher International Consultancy Ltd (United Kingdom).

Also, an application page for international teachers was created on the NIS site: http://careers.nis.edu.kz.

To ensure large scale international media coverage for NIS, International/Intellectual School profiles were created at university campuses worldwide, and advertisements were placed in pedagogical online communities and the foreign printed press.

During the reporting period, **more than 600** applications were **considered, about 200 interviews were held**, and **more than 100** personal profiles were examined.

A total **of 208** international teachers were employed for the academic year, with 133 incumbent staff having their employment contract renewed, and 75 teachers joining NIS for the first time.

3.2. TEACHING STAFF COMPOSITION

NATIONAL TEACHING STAFF COMPOSITION

The quality of our pedagogical staff is improving year by year. There has been a gradual increase in the number of teachers having a Master's or Candidate of Science

Table. Composition of NIS teaching staff

Academic degree	2014	2015	2016
Phd	-	2	2
Candidate of Science	15	15	19
Master	351	582	648

Age composition:

- up to 30 years – 978 (39%)
- 31 to 40 years – 710 (28%);
- 41 to 50 years – 498 (20%);
- 51 and above – 326 (13%).

Teaching experience:

- without teaching experience – 152 (6%),
- up to 10 years – 1188 (47%),
- 11 to 20 years – 573 (23%),
- 21 to 30 years – 447 (18%),
- 31 to 40 years – 146 (5,8%),
- 41 and above – 6 (0.2%).

According to the analysis, there is a balance between young specialists (with up to ten years' teaching experience - 47%) and experienced teachers (with over 11 years' experience or more - 47%). 6% of our teachers began their careers at an Intellectual school.

Gender composition:

- Men – 671 people (27%);
- Women – 1841 people (73%).

Gender composition of staff from 2015 to 2016 ¬remains steady. It is noteworthy that the greatest share of male teachers comes from Almaty and Shymkent.

INTERNATIONAL TEACHING STAFF COMPOSITION

Each year we have seen the number of long-term international teachers in the NIS network increase:

- 5-6 years - 7 teachers;
- 4 years - 19 teachers;
- 3 years - 50 teachers;
- 1-2 years - 132 teachers.

More than half of the teachers were invited from such countries as Great Britain, USA, RSA, Canada, Australia and Oceania, and Asia.

№	Academic degree	Number (people)	Percentage (%)
1	PhD	3	1,4 %
2	Master	88	42%
3	Postgraduate Certificate in Education (PGCE)	74	35,5 %
4	International Teaching Certificates (IBDP, TESOL, ESL, TEFL, and IELTS examiners)	79	38 %
5	CELTA and DELTA certificates holders	19	9,1 %

Experience of international teachers (total of 208 people):

- up to 10 years – 70 (33%),
- from 11 to 20 years – 93 (44%),
- from 21 to 30 years – 32 (16%),
- over 31 years – 13 (7%).

In 2016, the international teacher duties were increased to fully enable CIS accreditation. For the second year in a row, the Schools provided independent orientation weeks for international teachers.

3.3. LANGUAGE AND ICT COMPETENCIES MONITORING

LEVEL OF THE KAZAKH LANGUAGE

The Kazakh language plays a special part in the personal development of a citizen of the multinational state of Kazakhstan.

In 2016, the Qualification Criteria for pedagogical staff and equal employees were enhanced to include a level-based knowledge of Kazakh, with Kazakh proficiency required for the horizontal or vertical growth of an NIS employee.

The level of the Kazakh language is identified through the Kaztest system.

**Kaztest is an evaluation of Kazakh language proficiency that is based on the principles of international language proficiency testing systems such as TOEFL, IELTS, DALF/DELF, DSH, CELI, TÖMER, TORFL. KAZTEST consists of four parts: listening, lexical and grammatical part, reading and writing. Those who achieve the passing score are considered to have successfully passed the examination: in listening - 18 points, lexis and grammar - 42 points, reading - 30 points.*

1089 out of the 1330 nationwide Kaztest participants achieved either the Intermediate or Advanced level, i.e. 82%. Including:

- 260 teachers (19%) - «advanced»;
- 567 teachers (43%) - «upper-intermediate»;
- 262 teachers (20%) - «intermediate»;
- 159 teachers (12%) - «beginner»;
- 82 teachers (6%) - «elementary».

LEVEL OF THE ENGLISH LANGUAGE

Along with the Kazakh language, English proficiency has also been introduced into the Qualification Criteria.

The development of the NIS teachers' linguistic competencies is assisted internally by the aid of national teachers who are Bolashak graduates, Nazarbayev University Master's program graduates, and certified TKT, CLIL, CELTA, and DELTA trainers. Support is also provided by the international teaching staff.

Work with Kazakhstani universities that train teachers of vocation-related subjects in the English language is continuing, and cooperation agreements have been made to promote career transition internship for undergraduates. Some interns who pass the selection process then start their careers at NIS.

English courses are conducted year-round in order to have new teachers teach their subjects in English and replace the international teachers in the future. **This professional development has resulted in a higher number of NIS national teachers with an IELTS score of 5.0 or above.**

In 2016, the English language training was performed on a target group basis. As of the end of the reporting period, the English proficiency of NIS national teachers is as follows:

- **IELTS score of 5.5/B2/TOEFL IBT score of 65-71 or above:** 86% (304) English teachers;
- **IELTS score of 5.0/B1/TOEFL IBT score of 59-64 or above:**

88% (56) Global Perspectives and Research teachers;
45% (66) ICT teachers;
41% (79) Biology teachers;
41% (77) Chemistry teachers;
36% (81) Physics teachers;
36% (134) Mathematics teachers;
47% (14) Economics and Drama teachers.

- **IELTS score of 3.0/A2/TOEFL IBT score of 30-34 or higher:** 49% (461) other subject teachers.

As a result, NIS can achieve the international recruitment target ahead of schedule and begin to replace the international staff with local specialists earlier than expected.

ICT COMPETENCIES

A total of 2004 teachers took the ICT competence test in 2016:

- 1 159 persons (58%) showed high competence;
- 675 persons (34%) showed medium competence;
- 170 persons (8%) showed low and critically low competence.

A comparison study saw the number of highly ICT-competent teachers increase from the 2015 rate of 57% (989 persons) to the 2016 rate of 58% (1159 persons).

3.4. CAREER DEVELOPMENT SYSTEM

In 2016, the career development system was realized as follows:

- **In-school** courses for **5 674 teachers. The courses embraced 4 modules:**

Pedagogical Knowledge - 2 697 persons
Kazakh Language - 652 persons
English Language - 1507 persons
ICT - 818 persons.

- **20 in-country courses** for **2 340** teachers;
- **7 CIE-supported in-country courses** for **1 280** teachers;
- **6 abroad courses** for **60** teachers.

A total of 9 354 teachers received career development courses. Each teacher took 3 to 4 courses.

The main career development areas are:

Development of subject and professional skills and competencies

This direction is the key to ensuring each NIS teacher has a career development path of their own. It aims to make the teacher able to find and choose the right information, take the right decision in a variety of pedagogical situations, and continually enhance their subject knowledge in order to ensure the development of the learner's main skill, the ability to learn.

Development of leadership and professional and personal competencies allowing for efficient education and psychological and pedagogical support in learning

This involved learning modern theories and practices allowing for complex psychological and pedagogical support to each subject group at all stages of learning.

Development and monitoring of language competencies

Development of language competencies of professional importance on a differentiated basis in accordance with the function of foreign language in subject learning. Basic language knowledge makes it possible to communicate with foreign teachers and use foreign sources. Teachers who teach in English are learning the language at an advanced level. This year has witnessed an increase in the number of internationally certified teachers. There are 19 CELTA and 3 DELTA certificate owners.

Development of IT skills and implementation of innovative technological tools in teaching and learning

Development of IT skills is a compulsory component in the structure of professional skills of modern teachers. Relevant independant evaluation and training of teachers are undertaken on a regular basis.

Professional development courses with the participation of CIE

Professional development module on the Integrated Educational Program is a prerequisite for the successful implementation and experience sharing into the National educational system.

TARGETED PROFESSIONAL DEVELOPMENT

Under the NIS Staff Internship Programme, NIS staff take Nazarbaev University Master's degree programmes, Bolashak programme internships, and short-term internships.

Every year NIS staff take courses at the leading national and international educational institutions.

№	Plan of study	Number of participants	Term of study
1.	NIS Staff Internship Programme	52	2016
2.	Master's degree courses at Nazarbayev University	23	2016-2018
3.	Internships through the Bolashak programme	22	2016
4.	Internships through the Bolashak programme	3	2016-2017

NIS Staff Internship Programme

28 teaching staff members undertook CLIL Practice in Secondary UK Schools internships in order to investigate the theory and practice of CLIL at the secondary level of the British education system and prepare our own CLIL trainers.

Professional development trainings for NIS teachers were organised in collaboration with University of Cambridge Faculty of Education through two internship programs:

- internship for subject teachers from Intellectual Schools of Astana, Taldykorgan, Ust-Kamenogorsk, and Kokshetau at the partner schools of Cambridge, SUPER - 12 teachers;
- Action Research internship for newly appointed Intellectual Schools executives (12 executives).

Bolashak programme

In 2016, **22 Nazarbayev Intellectual Schools staff members** undertook short term internships through the Bolashak programme, among them:

- 11 teachers – University of Sussex, UK;
- 9 teachers – University of Cambridge, UK;
- 2 teachers – Jamk University, Finland.

Additionally, **3 teachers** were awarded scholarships in October. They are currently undergoing a six-month internship at Cambridge University.

Nazarbayev University

Studying at Nazarbayev University allows teachers to raise their academic degree and obtain a master's degree on the job.

In 2016, 23 teaching employees were enrolled **in Master degree in Educational Management and Multilingual Education programmes at Nazarbayev University.**

CENTER OF EXCELLENCE (COE) PROFESSIONAL DEVELOPMENT PROGRAMMES

In 2016, **1 025 NIS teaching staff members** undertook COE professional development training programmes:

- Teacher leadership in pedagogic community (95 teachers).
- Teacher leadership at school (227 teachers).
- Effective teaching and learning (703 teachers).

Additionally, 17 Intellectual Schools executives undertook professional development training.

CE trainers provided the following support:

- 22 workshops, 6 training courses;
- observation of 262 lessons;
- mentoring 17 executives of Intellectual Schools;
- 151 consultancy sessions on planning, lesson observation, learning objectives and active teaching and learning methods for 384 teachers.

CERTIFIED TRAINERS

We have developed human and social resources aimed at organizing effective in-school teacher training through coaching and mentoring.

The cluster of certified trainers is one of the main internal resources of Intellectual schools. A total of 454 trainers (see List of certified trainers in the Appendix) undertook professional development for teachers, with 85 teachers receiving a trainer certificate in 2016.

Table. List of certified trainers

№	Programme/training course	Number	In 2016
1	Giftedness Development programme trainers, *Johns Hopkins University*	43 people	-
2	Giftedness Development assessment experts, *NIS Centre of Pedagogical Measurements*	9 people	-
3	Level-based COE programmes trainers, *NIS Centre of Excellence*	57 people	-
4	Level-based COE programmes assessment experts, *NIS Centre of Pedagogical Measurements*	10 people	-
5	Introduction to Robotics programme trainers, *Nazarbayev University*	9 people	-
6	Critical thinking trainers, *Cambridge International Certificate for Teachers and Trainers*	21 people	-
7	*Teaching Knowledge Test (TKT) trainers*	7 people	-
8	Distributed Leadership programme trainers, *University of Pennsylvania*	3 people	-
9	Trainers and test developers, *Centre of Pedagogical Measurements, Cito*	62 people	-
10	PISA trainers, *Pearson*	24 people	-
11	Microsoft trainers, *Microsoft*	11 people	-
12	Language competencies trainers (four skils), *NIS Centre of Excellence*	21 people	-
13	Robotics programme trainers, *NIS Centre of Excellence*	49 people	49
14	Robotics programme trainers, *University of Malaya, Malasia*	13 people	-
15	CELTA certificate holders, *Cambridge English Language Assessment*	19 people	4
16	DELTA certificate holders, *Cambridge English Language Assessment*	3 people	2
17	CLIL trainers, *Docetis International*	47 people	28
18	Trainer for Educational Renewal in Kazakhstan, *Centre of Excellence*	34 people	-
19	International Baccalaureate trainers, *International Baccalaureate Organisation*	12 people	2
	Total number of trainers:	**454 people**	**85 people**

The primary task of the trainers is to support colleagues through coaching and mentoring. This creates a model of a self-developing pedagogical community, built on the principles of life-long learning, cooperation, research and professional dialogue.

INTEGRATION OF TEACHERS INTO INTERNATIONAL EDUCATION

NIS teachers take part in international conferences, forums and workshops in order to develop research capacity and improve quality of education.

Compared with 2015, the number of teachers taking part in international conferences and meetings doubled.

Table. Participation in international conferences in 2016

№	Participants	Title
1	Demeubaeva Zh. (Ust-Kamenogorsk); Imankenova G. (Ust-Kamenogorsk); Islamov L. (Aktobe)	Educator Exchange innovative teachers' forum held by Microsoft March 7-11, 2016, Budapest, Hungary
2	Ten A. (Shymkent, NIS of Chemistry and Biology)	Teachers of English to Speakers of Other Languages March 10-12, 2016, Dubai, UAE
3	Panevina A. S. (Pavlodar)	International Conference on Management, Leadership & Governance (ICMLG) April 12-14 2016, St. Petersburg, Russia
4	Aksenov I. V. (Taraz); Bazarbaeva G. J. (Astana, NIS of Physics and Mathematics); Zhumabaev R. N. (Aktau); Isabekova B. M. (Pavlodar); Seytinbetova A. Zh. (Taraz); Sosin V. N. (Taldykorgan)	Education and Transition. Contributions from Educational Research (ECER) August 22-26, 2016, Dublin, Ireland
5	Imansharipova A. Zh. (Astana, IB); Mashinets T. V. (Astana, IB); Seysenbaeva Zh. Sh. (Astana, IB)	WALS International Conference 2016 (World Association of Lesson Studies) September 3-6, 2016 Exeter, UK
6	Bainazarov T. B. (Karaganda)	Asia and Pacific Regional Bureau for Education UNESCO 5-7 October 2016, Bangkok, Thailand

International conference participants network and cooperate with international colleagues.

Copies of projects that teachers present at international conferences and forums are distributed to school libraries. Teachers share their experience and practices, increasing one another's potential.

Integration of schools into the international education provides an opportunity for self-actualization and self-expression; enables teachers to develop creative activity, improve teaching methods and education techniques and expand professional contacts with institutions and organizations at the national and international levels.

3.5. TEACHER EVALUATION

In 2016, 173 NIS teachers and equal-status employees took part in attestation, where:

- 154 teachers defended the declared level (89%);
- 15 teachers failed to defend the declared level (8.7%);
- 4 teachers failed to take part for compelling reasons (2.3%) (could not take part in the final stage of certification due to illness).

Among those 154 teachers, 5 teachers defended the Teacher level, 110 teachers (79 of them advanced to a higher level) defended the Moderator Teacher level; 37 teachers (13 of them advanced to a higher level) defended the Expert Teacher level; and 2 teachers defended the First level.

Total number of NIS teachers and equal-status employees by the level of excellence compared to 2015:

Year	Levels of Pedagogical Excellence										Total
	total	By six levels:					всего	By two levels:			
		researcher	Expert	moderator	Teacher	intern		first	basic	no level	
2015	2 677	6	178	383	1 657	453	1 156	50	717	389	3 833
2016	2 779	6	191	462	1 573	547	907	52	409	446	3 686

A new model of teachers and equal-status employee assessment has been approved considering school comments and suggestions. Teacher's lesson is the focal point of the new model, which plays an essential role in evaluating the teacher's performance.

The teacher sets a goal for the academic year, analyzes their work done in 2 terms, and adjusts the goal if necessary. School assessment improves the teacher's practice in terms of both the attestation and continuous professional development.

To promote successful implementation of the new model for professional evaluation, NIS organized trainings on the implementation of school evaluation for deputy principals and heads of methodological associations of schools, and developed guidelines on school assessment and evaluation tools for lesson reflexive reporting.

3.6. TEACHER ACHIEVEMENTS

In the annual republican teacher contest «Best Teacher - 2016» held by the MES of the RK the winner was **Azhibayeva Zhadyra Salimzhanovna**, a moderator teacher of NIS Kyzylorda. She was given an award-pin and a certificate that confirms her nomination «Best Teacher 2016».

Zhadra Azhibayeva was distinguished with her professional competency and results of the research work at the contest.

In 2005, she published study guides on how to use the new approaches in learning the Kazakh language.

In addition, **29 NIS employees** were awarded with the following in 2016:

- Altynsarin Award (8 teachers);
- Educational Specialist Award (5 teachers);
- Ministry of Education and Science Certificate of Appreciation (11 teachers);
- Ministry of Education and Science Letter of Appreciation (5 teachers).

The **contest «Teacher Ideas Festival»** was held in Almaty to promote creative self-realization, professional teacher development, and distributing NIS managers and teachers' innovative experience with the support of the MOE Daryn Republican Scientific and Practical Center.

The festival targets active and creative teachers that strive to exchange their successful teaching experience with the professional community and demonstrate their intellectual labor results to a wide audience.

59 NIS teachers participated the festival and 23 of them took the winning places: 1st place - 5 people, 2nd place - 7 people, 3rd place - 11 people, and 8 people were awarded with certificates.

The Contest «Ideas changing the world» has been held **among NIS teachers** and focused on identification of innovative forms and learning styles and use of ideas and initiatives of the First President of the RK.

67 projects have been presented and 10 of them made it to the final.

The best project prizes were awarded to teachers of schools of Astana, Kokshetau and Pavlodar:

Amangeldy Satiev, a history teacher of Intellectual School Kokshetau took the **3rd place**;

Tatiana Mashinets, an English teacher of Intellectual School Astana took the **2nd place**;

Nurbolat Temirov, a history teacher of Intellectual School Pavlodar took the **1st place**.

UNIT 4.

EDUCATIONAL CONTENT

UNIT 4. EDUCATIONAL CONTENT

4.1. EDUCATIONAL PROGRAMMES

NIS continued to implement two educational programs:

- International Baccalaureate Programmes;
- Integrated Educational Programme

4.1.1. INTERNATIONAL BACCALAUREATE PROGRAMME

Within the reporting period NIS Astana continued teaching the DP and MYP programmes[1]. The objectives and aims of the above mentioned programmes are expounded in NIS Annual Report 2014.

In November 2015 the School obtained accreditation within the DP programme **for Kazakh language and Modern History of Kazakhstan, thereby including Kazakh subjects in the list of IB subjects for the first time.** On the basis of the official accreditation, any learner in the world can choose to study these **subjects. Teachers of the Intellectual School Astana can teach them** on-line and administer tests acting thereby on the international level.

During the reporting period, in order to improve teacher excellence and the DP and MYP programmes, NIS Astana teachers undertook 47 training courses on 1st, 2nd and 3rd categories recommended by MB.

NIS Astana translates its experience of the IB programme to International School Astana, which aims to receive authorization for elementary school programme (PYP IB) and currently has Accreditation Candidacy status.

1 In April 2013, the Intellectual school of Astana received IB authorisation for DP programme. In November 2015 received an authorisation for MYP programme.

4.1.2. INTEGRATED EDUCATIONAL PROGRAMME

The teaching in 19 NIS schools is carried out according to the Integrated Educational Programme (IEP)[2].

During development of Subject programmes for comprehensive schools in 2016, IEP was compared to other programmes of various level. The analysis showed that the Subject programmes for Science and Mathematics strand have a high level of compatibility with internationally recognized programmes, A-level, O-level, IB and with the content of international examination SAT, SET, and others. The subject programmes follow the Compulsory Education Standard of the Republic of Kazakhstan completely, providing the in-depth study of selected topics and extension of several units.

During the reporting period, to improve the effectiveness of IEP implementation and realisation the following was undertaken:

- approbation of new subject programmes;
- monitoring the implementation of IEP;
- development and review of subject programmes and course plans;
- teacher methodological support at the introduction of the IEP.

NEW SUBJECT PROGRAMMES APPROBATION

IMPLEMENTATION of IEP is carried out according to the schedule.

2 Learn more about IEP at nis.edu.kz

Table. IEP Implementation Schedule

Academic year	Grades											
	1	2	3	4	5	6	7	8	9	10	11	12
2012-2013							■				■	
2013-2014	■						■	■			■	■
2014-2015	■	■					■	■	■		■	■
2015-2016	■	■	■				■	■	■	■	■	■
2016-2017	■	■	■	■			■	■	■	■	■	■
2017-2018	■	■	■	■	■		■	■	■	■	■	■
2018-2019	■	■	■	■	■	■	■	■	■	■	■	■

In the 2015-2016 academic year, the pilot implementation of subject programmes for all subject was carried out in Grades 3 and 10, and the Physical Education subject programme in Grades 8 and 12.

In the 2015-2016 academic year, the pilot implementation of subject programmes in Grades 4, Nazarbaev Intellectual Schools. Taldykorgan and Kokshetau.

Full implementation of IEP (100%) will be achieved in 2018, when Grades 1 to 12 learning is realized according to Intergrated Educational Programmes.

MONITORING THE IMPLEMENTATION OF IEP

In 2016 the process of implementation of new and revised Subject programmes was monitored in order to improve the Subject programmes and the learning process as a whole.

The information was collection through lesson observations in Grades 3, 7, 10, interviews with school executives, IEP coordinators, narrative interviews with teachers and learners, online survey among teachers and learners, and written survey among teachers.

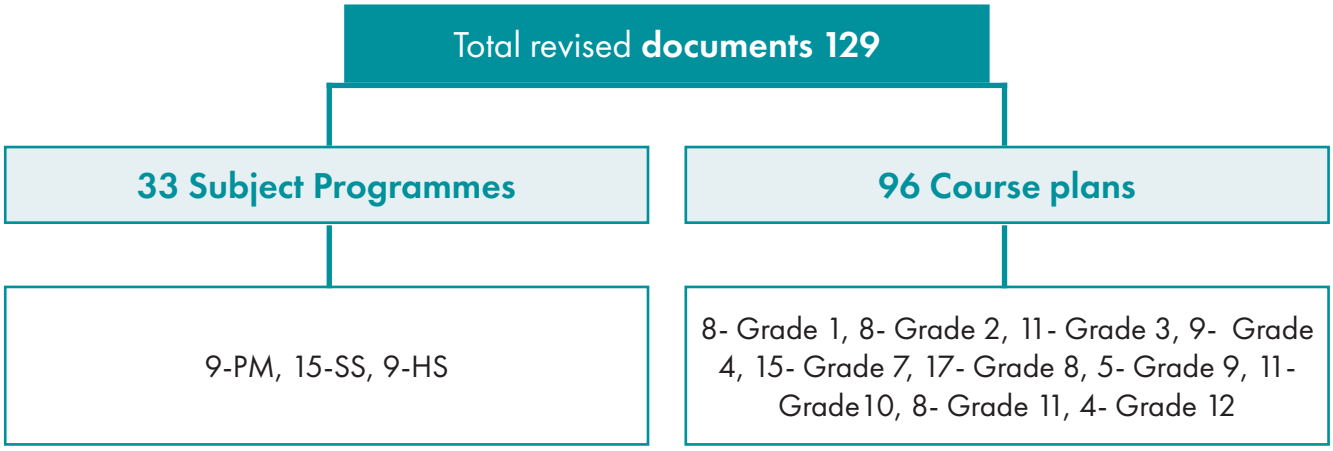
Collected data was **handled** via content analysis (including using NVivo), data triangulation and problem categorisation.

As a part of the monitoring **250 lessons in Grades 3, 7 and 10** have been observed. 16 meetings with executives and 16 meetings with learners of the Intellectual Schools were organised.

1 116 teachers and **2 678 learners** took part in the online survey, which is another standard method of data collection.

THE MONITORING RESULTED IN A REVISION OF THE SUBJECT PROGRAMMES AND PLANS; development of recommendations / systematic activities that enhance the effectiveness of IEP implementation and realisation; publication of thematic teaching aids by subjects and activities of teachers of Intellectual schools.

129 Subjects programmes and plans have been amended.



PRIMARY SCHOOL

Subject programmes and corresponding Subject plans were revised: Science, World Understanding, Kazakh and literature L1, Kazakh L2, Russian and literature L1, Russian L2, Maths were aligned with the Subject programme for primary school on according to renewed State Compulsory Educational Standard.

SECONDARY SCHOOL

From 2015 onwards, in order to ensure succession and continuity of knowledge and skills of learners, earlier versions of Subject programmes for Grades 6-10 have been revised and integrated into the educational process. Programme developers also took into consideration the term of study in the secondary school, which is 4 years (Grades 7 -10).

During the reporting period, Grade 8 Subject in subjects were revised and introduced into the educational process: «Mathematics», «Physics», «Chemistry», «Biology», «Geography», «Kazakh L1, «Integrated Kazakh Language and Literature L2», «Kazakh Literature», «History of Kazakhstan», «World History», «Russian L1», «Integrated Russian Language and Literature L2».

Starting from September 1, 2016, Chemistry is taught 2 hours per week in Grade 7.

As for the the historical stream, the main historical concepts (focus areas) that guide the academic process were specified and complemented: change and continuity, cause and effect, evidence, comparison, significance, and interpretation. A main concept was identified for each topic. As a result, skill development will be done in a more systemized manner.

As a result of the monitoring, certain changes in the Physical Education subject in primary, middle and high school curricula as well as in academic plans in all grades were implemented: the number of units and subunits was reduced to 3 («Motor activities», «Creative capabilities and social skills in the context of motion», «Health and well-being») and 13 correspondingly. Theory-targeting learning objectives were removed. Ice-skating, skiing, and running training activities were introduced to grade 4-11 curricula. The activities being interchangeable, the lessons can be held in accordance with the local climatic conditions.

HIGH SCHOOL

In order to reduce the academic load and synchronize the expected learning outcomes and the national final attestation (decision on NIS graduates' taking UNT), changes and additions were made to the high school model.

Kazakh/Russian (L1) was transferred from the variable part of the standard course plan to the compulsory part. According to the initial requirements of the new format and content of 2017 UNT, the subject programmes and course plans in the given subject were redesigned.

In order to efficiently organize the learning process and prepare learners for the final attestation, the subject «Global Perspectives and Project Work» was reduced to one year of study in Grade 11 instead of a year and a half. In connection with this, the subject programme and the medium-term plan for the subject were completely reviewed.

«Kazakhstan in Modern World» was reviewed in 2015, piloted in three new schools in Aktau, Petropavlovsk, and Almaty, and introduced to all schools in 2016-2017.

The Grade 12 Physics subject programme was enhanced to include the Cosmology theme, which studies modern views on how the universe and galaxies were created based on the latest discoveries. The addition of Cosmology aims to help learners understand the world from the physical point of view.

METHODOLOGICAL SUPPORT IN IMPLEMENTING THE IEP

In order to assist NIS teachers in implementing the IEP every year various trainings on new approaches to teaching, working with curricula, strategies in achieving academic goals are conducted.

CEP specialists held **23** subject trainings on **19 subjects** for **338** teachers:

- **2 trainings** for **Grade 4** «Art» and «English» teachers;
- **4 trainings** for **Grades 7-10** «World History», «History of Kazakhstan». «Geography», «Art» teachers;
- **training** for **Grades 11-12** «Kazakhstan in Modern World» teachers teaching in Kazakh;
- **2 trainings** for **Grades 11-12** «Economics», «ICT» teachers teaching in Russian;
- **8 trainings** for **Grade 11-12** teachers teaching the following subjects in Kazakh and Russian: Chemistry, Biology, Physics, Mathematics;
- **5 trainings** for **Grade 7-12** «Russian (as the first language – L1)», «Russian and Russian Literature (as the secondary language – L2)», «Kazakh (as the first language – T1), «Kazakh and Kazakh Literature (as the secondary language – T2), «Kazakh Literature», «Russian Literature», «English»;
- **training** for **Grade 11** «Global Perspectives and Project Work» teachers.

In order to give information on the main STEM provisions and ways of implementing it and promote the skills of using cross-cutting themes, a CIE-supported workshop was conducted for primary school teachers.

The Grade 12 external assessment (2014, 2015) analysis and monitoring showed the learners still had a lot to learn in the regard of the practical part of Biology, Physics and Chemistry examinations. They had difficulty hypothesizing and presenting data in graphs, diagrams and tables. In this regard, **a professional development course on conducting practical work and research projects in natural sciences** was held for 151 NIS teachers which involved ICE consultants.

The workshop participants held 48 cascading workshops **for 334 Physics, Chemistry, and Biology teachers** of 19 Intellectual schools. The teachers shared their knowledge, skills, and materials needed to conduct laboratory and practical works. Photos, videos and reports on the conducted workshops can be found at the CEP website.

To provide teachers with additional methodological and informational suppot during the reporting year, 15 methodological textbooks were developed and published in the areas of the implementation of subject programmes and course plans, trilingual model of learning, and method of language immersion.

4.1.3. Trilingual Policy Implementation

The main objective of the NIS trilingual policy is to develop a multilingual graduate who speaks three languages, has subject knowledge in three languages, successfully partakes in conversation on different topics, values the culture of their people, and appreciates the cultures of other nations.

NIS implements two trilingual education models in terms of the IEP:

- The first model is based on the additive trilingual principles and is implemented at the secondary and high school levels at 19 NIS schools.
- The second trilingual education model is different with the fact that it includes the stage of *early immersion in the Kazakh language* and it is experimental and used in two Intellectual schools, Taldykorgan and Kokshetau, ones that have primary school.

THE FIRST MODEL suggest level-based learning of Kazakh, Russian and English as individual subjects; studying separate subjects in the second and third languages; and having out-of-class activity in the three languages.

To check the model implementation efficiency, Center for Educational Programs conducted the following research in 2016:

1. Studying the issues that teachers deal with when developing learners' writing skills at Russian language lessons».

The annual subject programme implementation monitoring shows that language teachers have difficulty developing learners' writing skills. The main reason is that the communicative approach to teaching the Kazakh and Russian languages is a new practice for all national teachers. The research identified areas where teachers need most support.

Those are grammar learning integration into speaking development; strategies and approaches to writing development; preparation stages for writing; assessment of learners' writing skills; and integrated writing and reading.

The results of the research were used to revise the content of the professional development training for NIS language teachers and teacher's aids themes to be developed in 2017.

Subject programmes and plans were also revised, with the learning objectives in language subjects made more detailed, additional recommendations introduced as to their achievement, and references made to relevant educational resources.

2. Advantages and disadvantages of teaching History of Kazakhstan in the Kazakh language (L2).

The fundamental result of the research was that it proved the learners are interested to learn the subject in Kazakh. This result was also confirmed by external assessment. All Grade 10 learners solved the tasks on the first component of the exam at 44%, the second component at 51% thus mastering a high amount of the History of Kazakhstan subject content. Nevertheless, lesson observation showed that the learners needed more teacher support.

3. Research on how the trilingual education is being implemented in the Intellectual Schools.

The research is focused on identification of the factors that encourage and impede trilingual education implementation in Intellectual Schools to improve the existing trilingual policy through development of recommendations. The conceptual foundation of the research is Cummins' iceberg theory (1999) that demonstrates the difference between the spoken (BICS, basic interpersonal communicative skills) and academic language (CALP, cognitive-academic language proficiency). (see the image below). According to this theory time and efforts are needed for the development of cognitive and academic language competencies such as analysis, synthesis, evaluation related to high order thinking skills.

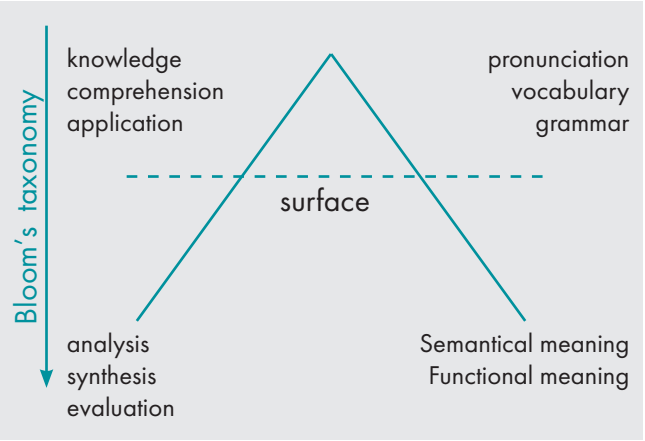


Image. Iceberg theory (Cummins 1999).

According to research, the trilingual education model enables learners to efficiently develop basic every day communication skills in all three languages. In particular, the results confirm that the development of high order thinking skills and comprehension of semantic and functional language meanings is enhanced through teaching non-language subjects in the second/third language. Since learners learn language through both language and non-language subjects, they transmit a sufficient amount of language material by learning the subject content of non-language subjects. Moreover, learners' vocabulary gets enriched with subject terminology and they get more opportunities to use academic language directly in different contexts.

The opposite works as well. Language proficiency in the second/third languages gained through language subjects directly affects the understanding of the non-language subject material taught in the second/third language. Thus, according to teachers' experience, effective learning in language subjects positively affects learners' language proficiency, helping them comprehend information.

The research also showed that learners whose teachers use CLIL are more inclined to learn non-language subjects in the second/third language.

The research data was used to determine the content of professional development courses in trilingual education to be provided to NIS teachers in 2016, and allowed to outline the further trajectory of the continuous work on preparing CLIL trainers.

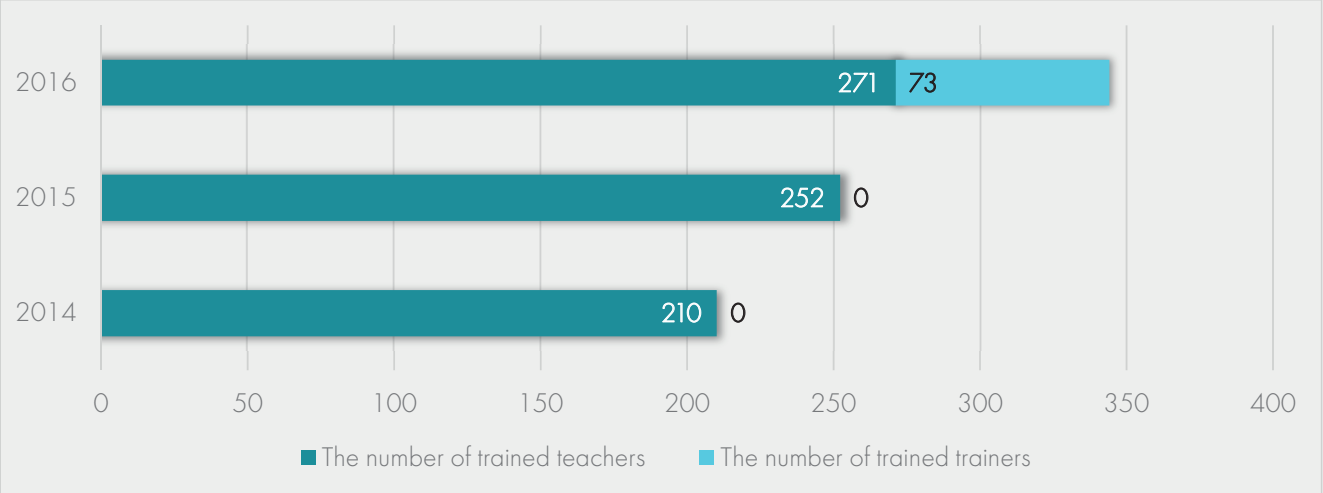
PROFESSIONAL TEACHER DEVELOPMENT IN TERMS OF TRILINGUAL EDUCATION

During the reporting period, 8 workshops were conducted for 344 language and non-language subject teachers, language coordinators and other employees, including:

- 4 workshops for 239 teachers of language and non-language subjects on. The themes were «Communicative approach in learning the second and third languages – How to teach learners to understand and talk» for language subject teachers and «CLIL» for non-language subject teachers;
- workshop for 17 language subject coordinators;
- workshop for 42 CLIL teacher trainers;
- workshops for 27 CEP and other NIS branches employees;
- workshop for 31 CLIL teacher trainers and CEP employees.

73 participants have mastered the CLIL approach and are now able to become school trainers and teach their colleagues.

Diagram. NIS teachers and employees who received training in various area of trilingual education



THE SECOND MODEL OF TRILINGUAL EDUCATION. PROJECT OF KAZAKH-LANGUAGE IMMERSION THROUGH the IEP (hereinafter the PROJECT)

Immersion groups and classes include 80 children from pre-school organizations and 115 children from primary Intellectual Schools of Taldykorgan and Kokshetau cities.

The first group of participants (learners of different ethnic background, the Kazakhs, the Russians, the Chechens, the Ingushes, the Tatars, the Ukrainians, the Koreans, the Uigurs, etc.) are in Grade 4 in this academic year.

Kazakh language proficiency analysis shows the immersion groups and classes to actively apply the communicative approach in practice. This is also confirmed by their highly developed spoken language, compliance with the pronunciation standards, and correct use of grammatical language categories.

Comparative analysis of speaking skills development within three academic years on the basis of development diagnostics gives evidence of stable dynamics in mastering the Kazakh language.

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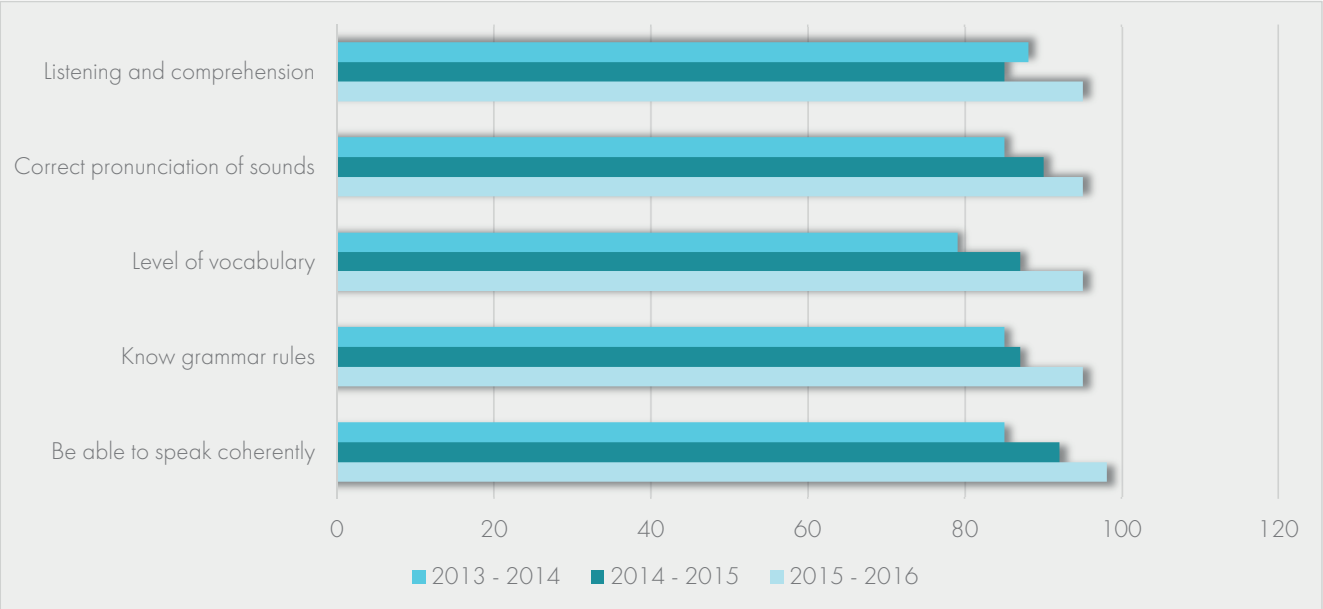
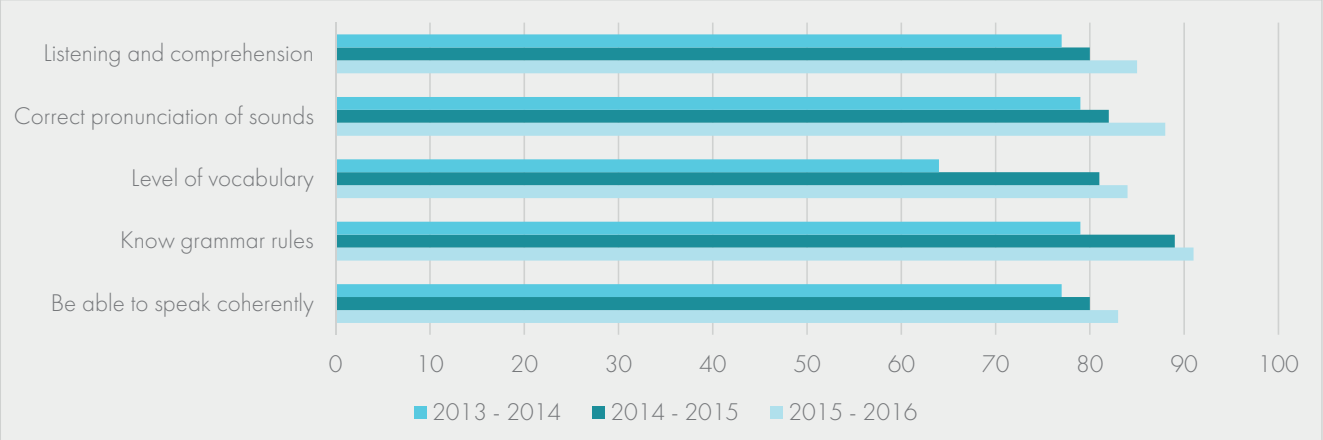
Kazakh language proficiency in the immersion classes of NIS Kokshetau PhM (%)



Kazakh language proficiency in the immersion classes of NIS Taldykorgan PhM (%)



To get the child feel the need to independently learn a language and promote their curiosity, immersion classes need to have a developing educational environment. It is created using a wide range of educational resources, including media sources, methodological and art books. Different forms of active learning are widely used as an obligatory component of the immersion lesson. In order to give methodological support, the posters on cross-curricular themes for grades 3 and 4, anthology for grade 4 and three didactic textbooks for different preschool ages were developed.

The Project is special due to the participation of parents as equal partners.

Thus, during the reported year, a «Language immersion without any limits» summer school was organized in collaboration with the Centre of Language Immersion INNOVE

The meeting of parents of immersion classes from Kazakhstan and Estonia.

The annual monitoring is an integral part of the project accompanied by the application of different research methods.

The outcomes of monitoring show that teachers have learned the language immersion methods at sufficient level and are able to put them into practice.

Generally, teachers noted the increased efficiency of these methods that promote learner interest in learning Kazakh and enhance the confidence of parents. A research report was prepared on the basis of results of the year «Development of the national language on the basis of learners' immersion in Kazakh language», reflecting all the practical work.

The teachers' experience from experimental classes in Kazakhstan and Estonia was presented at regional conference on the topic of «Model of early immersion in kazakh language as effective means in national language learning» in Taldykorgan and Kokshetau with participation of **200 educational workers from different regions.**

4.2. PASTORAL WORK

Pastoral work in 2016 was carried out in the name of the 25-th anniversary of the Independence of the Republic of Kazakhstan. The teachers developed a plan of actions for agitation of historical heritage of Kazakhstan, popularization of a role of the Head of the State N.A.Nazarbayev in strengthening the independence of the nation and his effective activity on implementing the national development programme.

The patriotic and social projects oriented to formation of civil society and patriotism were implemented during the year covering all the learners of the Intellectual Schools.

A Global Perspectives lesson on the topic «Peacemaking initiatives of the President of the Republic of Kazakhstan, N.A.Nazarbayev» was given to 1 626 learners in cooperation with the centre of global initiatives of the Head of the State.

In order to cultivate a respective attitude towards the state symbols **a competition, where 4 175 participants proved their knowledge of the state symbols**, and a **competition titled «Erudite»**, where 1 332 Grade 9-11 learners showed their knowledge of Kazakhstan's Independence achievements were conducted.

40 learners and 20 educational workers from the Intellectual Schools have taken a course in **the library of the First President - the Leader of the Nation** within the social project **«World-changing ideas»**, dedicated to ideas and initiatives of the Head of the State, his role in development of the Republic, history of the Independent Kazakhstan, and took participation in the republican competition of methodological developments on using the writings of the Head of the State.

4 000 learners of general education schools visited the Intellectual Schools within the «open doors day». The following measures were organised: **study tours and hobby clubs** based on the following disciplines: Science, Technology, Math, Art, Engineering, single **charity fairs** for 100 learners from needy and large families for visiting the EXPO-2017 exhibition and school based holiday camps in Astana.

Photography exhibition «Big country - Big family» on the following themes: Nature of Kazakhstan, Economics of Kazakhstan, Persons who made contribution to the development of Kazakhstan, Fauna and flora of Kazakhstan, as well as on the following social projects and practices: «Bowing to the motherland», «10 days at parents' work», «2 weeks in a village». The measure reached 1840 learners.

Permanent **achievement exhibition complexes (?)** «25 years of Peace and Creation». The exhibition viewed the historical and cultural legacy, modern achievements and breakthrough projects of Kazakhstan.

6 405 learners took part in charity events, cultural activities and attended meetings with famous public figures, scientists and sportsmen within the Intellectual Schools.

1 750 learners **organised a flashmob named «We are the children of the Great Steppe»** in shopping malls of cities and regions of the country involving 1 000 dombrists who performed «Saryarka» and «Balbyrauyn» kyuis in order to create a sense of belonging to the cultural legacy of own nation. Learners of NIS Astana (3 schools) organised this activity in the National Museum. Also, more than 4 thousand learners organised **youth flashmobs** forming up in a shape of the figure 25 performing patriotic songs about Kazakhstan.

7 246 learners organised a chain **event named «The best 25 songs about Kazakhstan»** and **«The song dedicated to you»**. The event is oriented to support and demonstration of the best kazakh songs about the country. The songs are filled with a high sense of love to the home and the motherland.

Following the **«2 weeks in aul»** practice, a collection of the best 100 essays was issued and 30 selected essays were published in the republican mass media, reflecting the increasing interest of the people in extracurricular activity of learners from the Intellectual Schools.

The traditional **«A bow to the motherland»** project was successfully implemented in ten Intellectual Schools covering 260 more able learners and 40 teachers that explored and investigated geographic, biological and historic features of Kazakhstan. Learners had field ecological expeditions, visited the State National Natural Parks, historical monuments and cultural sites of the country.

There was **a concert «Independence: a long history and a solid backbone»** arranged in the «Balasagun» cultural centre by 116 NIS Taraz learners for two children's homes, homes for the disabled, soldiers' homes, «Mother and child» centres, members of the Board of Trustees, teachers from pilot schools. At the concert they presented the history of our state development since the time Kazakh Khanate was established and up to this day.

With NIS events dedicated to the 25-th anniversary of Independent Kazakhstan involving thousands of learners, parents, regional communities, it is clear that NIS learners became ambassadors of Independence, people with creative ideas in minds, and real patriots of their country.

VI Nauryz meetings were held during the reporting period on the following topics: Science, Technology, Engineering, Math covering **160 learners** of Intellectual and comprehensive schools having high potential in learning natural sciences and mathematics, scientific competitions winners.

The scientists of the Nazarbayev University, Royal Institute of Great Britain, Germany, South Korea, and the Russian Federation gave master-classes within two days demonstrating scientific experiments in 8 lecture-halls: «Engineering», «Electric Motors», «Medicine», «Biotechnologies», «STEM education», «Physics of the impossible», «Molecular physics», «Modern areas of mathematics».

These meetings involved **53 learner project reviews** performed in four sections on the following STEM innovative ideas: «EXPO-2017: Alternative Energy Sources», «STEAM ideas: innovative thinking, new technologies, development of creativity», «Physics of the impossible», «Life-changing technology», assessed by independent judges. The Nauryz meetings involve learners of general academic schools in scientific projects and technical creativity.

In 2016 new projects forming moral and spiritual values of learners were integrated:

- **«The history of 100 kyuis»** project within the framework of which about 2 000 learners will explore the history of creating musical compositions and information about their authors;
- **«Wikipedia protecting the monuments»** – 358 participants of the «A bow to the motherland» project and our young Wikipedia contributors upload photos of historically significant sites to the online-encyclopedia giving the opportunity to millions of people to look at the historical and cultural legacy of the country.

4.3. SUPPLEMENTARY EDUCATION

Elective courses, summer schools and interaction with partner schools that provide learners with great opportunities in their free time are organised in Intellectual Schools for increasing knowledge and skill development of learners.

4.3.1. ELECTIVE COURSES

There were 5 courses during the reporting year covering 132 learners and held in order to develop mathematical model-building skills, creative, engineering, entrepreneurial, design thinking, creative writing, project activities, software development, process algorithms, artificial intelligence simulation on the base of leading and acknowledged educational and scientific organisations.

Diagram. NIS teachers and employees who received training in various area of trilingual education

№	Extracurricular elective courses	Number of participants
1.	Mathematics and Science courses in the Johns Hopkins Center for Talented Youth (USA): biology, chemistry, physics, buimedicine, mathematical logic, electrical engineering, cryptology	20
2.	Stanford University courses for youth (USA): science, technology, engineering, entrepreneurship, leadership, collaborative problem-solving	40
3.	Columbia University courses "Immersion in learning" (USA) molecular biology, physics, chemistry, entrepreneurship, programming, sustainable development	10
4.	Summer Camp courses "STEM on the base of the University of Nottingham Malaysia Campus: bioscience, biomedicine, pharmacy, informatics and engineering	42
5.	Summer Camp courses "STEM Besant Hill school", (USA): science, technology, engineering, math, exploratory activity	20

For the first time:

- **60 learners took elective courses under the programme** of **Stanford University** on the base of NIS Almaty and NIS Astana as follows: «Creative writing», «Video games designing» developing IT knowledge and skills, creative writing and creative thinking of learners;
- **363 learners took entrepreneurship courses** on the base of NIS Almaty, NIS Astana and NIS Shymkent that gave an opportunity for the children to open up their leadership potential and to develop their skills required for entrepreneurship to create their own company. By the end of the courses, learners have developed and passed the review of their Business Projects.

By the end of extracurricular courses, learners use the skills in conducting mini-researches and give classes to their peers.

4.3.2. SUMMER SCHOOL

The programmes of Summer schools have been developed by the leading World Universities and encourage a wide use of modern education technology and active learning technique that promotes intellectual, creative, emotional development of learners, increase their informative and communicative competence, creates positive motivation for learning, support learners in self-determination and choice of further professional activity.

For **5 686 learners of Intellectual schools of grade 7-11** Summer school was organised in **8 areas:** Engineeering, Soap production and design, Biotechnology and Bioengineering, Soil and its specific features, Robotics, Science sparks, STEM (eco-home), Pharmakon with the consideration of integration of Mathematics, Physics, Chemistry, Biology, Computer Science, Design and technology.

Within the Summer school, learners receive support in intellectual and creative activities, they get an opportunity to deepen their research and practical skills and develop language and creative thinking skills.

4.3.3. PARTNER SCHOOLS

Intellectual schools are working on implementing Partner Schools project in the framework of which a learner exchange programme is being introducted.

In January 2016, a learning course was organized in NIS Astana PhM for Malaysian school learners of The National Gifted Centre PERMATApintar.

**PERMATApintar is a school, founded by the government of Malaysia with the aim of developing the potential of talented and gifted learners and inspiring learners to study STEM (Science, Technology, Engineering and Mathematics) and research.*

Learners attended lessons, club meetings, extra-curricular activities, master classes, visited Nazarbayev University, the National Museum, Astana Opera theatre and other memorable places, learned to play the folk song «Yerkem-ai» on the dombra.

In October 2016 13 Aktau NIS learners visited the Nueva School, San Mateo, California, USA.

** The Nueva School is a school for gifted children aged from 7 to 18, that promotes innovations, reflective practice and research.*

Learners collaborated with Stanford University, visited Silicon Valley companies, universities, scientific centres, museums, took part in thinking design courses, STEM projects in the framework of a mathematical quest together with the Nueva School learners.

Collaboration with the Nueva School will continue in the summer of 2017, a learning course for foreign learners in Aktau NIS is planned to take place, learners will attend the international exhibition EXPO-2017 in Astana, as well as visit Turkestan in order to familiarize with the history of the Silk Way.

In December 2016, 15 Ust-Kamenogorsk NIS learners attended learning courses at an international school under «Educational hab Aib» Fund (Armenia), and in September 2017 Armenian learners will visit Ust-Kamenogorsk NIS.

** The school opened in 2011 and used unique educational technologies in order to implement internationa standards in the educational programme in Armenia.*

Furthermore, a visit of Pavlodar NIS learners to the Specialized Academic Scientific Centre named after Kolmogorov A. (Russia) is planned to take place.

Specialized Academic Scientific Centre named after Kolmogorov A. was founded in 1963 by distinguished mathematicians and physicists for high school learners that showed capabilities in learning natural sciences.

During the reporting period in the framework of Partner schools, program learners had a chance to familiarize themselves with new approaches to educational activities, immerse themselves into a new multicultural environment, develop the skills of social adaptation, communicative capabilities and broaden their minds.

4.4. MEDICAL AND PSYCHOLOGICAL SERVICES

MEDICAL SERVICE

20 Intellectual Schools have a license for healthcare delivery to learners in Pediatry and 19 schools - in Dentistry.

141 health professionals work in the **Intellectual Schools:** *19 pediatricians, 18 dentists, 40 school nurses, 44 boarding school nurses, 20 dietetic nurses.*

Medical service holds learners' preventive examination on a regular basis, activities on seasonal and chronic illness prevention (sanitary and hygienic and treatment procedures). Within 2016, 100% of learners passed preventive examinations in Pediatry and Dentistry.

In accordance with the National Vaccination Schedule Intellectual Schools' learners received influenza, measles, rubella, diphteria, tetanus, and tuberculosis vaccinations.

Subject teachers and advisers developed and held activities and topic-based lessons aimed at encouraging learners to a healthy life *(healthy nutrition, sport, muscle strengthening, vision improvement and etc.)*.

To professionally develop the medical service employees on a regular basis in the delivery of first heart arrest treatment they have been trained based on the *«University Medical Center»* Corporate Fund of the National Research Center for Maternal and Child Health according to the programme developed by the *American Heart Association*. Summarizing the results, pediatricians held similar training and instructions for advisers, teachers and learners, Grades 11-12.

PSYCHOLOGICAL SERVICE

Psychologically safe and comfortable learning environments, learners' mental health, and learning individualization is important in the learning process.

56 educational psychologists work in the psychological services of the Intellectual Schools.

The analysis carried out has shown that educational psychologists need professional development.

In order to support psychological services, NIS Psychological and Pedagogic Learning Support Model, NIS Psychological Service Management Guidance (methodological recommendations), Psychological and Pedagogic Learning Support Programme Collection, Psychological Professional Development Model have been developed.

Workshops and training were held.

A course «Applied aspects of the educational psychological services in Germany» based on the International Center of Education and Scientific Information in Dusseldorf was conducted. As a result of the training, educational psychologists learnt therapeutic skills, gained experience in psychological service document management and diagnostic procedure etc. Based on the experience distilled, psychological service documents have been revised and regulations for the psychological services office have been developed.

Workers of TOCHKA PSI (Psy Point) center of psychological support of education (Moscow) held the workshop «Big psychological game when working with learners and teachers: developing, correction, diagnostic and project game opportunities». Participation in the workshop have ensured development of project management skills and game method use that enables to minimise the personal, learning and social problems of learners and teachers.

Intellekt (Intelligence) learning center (Estonia, Tallinn) workers and a member of Saint-Petersburg Psychological Community, cognitive behavioral therapist specializing in EMDR therapy, held the workshop «Emotional intelligence. Gifted children support» for 20 educational psychologists and

20 NIS Deputy Principals for Pastoral Care. Participants gained a clear understanding of how to use self-regulation and emotional state management technology in complex professional conditions.

In October, 2016, NIS educational psychologists attended the workshop «Teaching life skills to improve learners' well-being and to achieve academic success» with Alejandro Adler Brown, PhD in Psychology, University of Pensilvania (USA), international expert on the evaluation of well-being. Summarizing the workshop results, the participants learnt about positive psychology techniques based on the idea of strong-willed personality development in terms of learners' positive thinking formation focusing on the «Magic Circle» technology use.

During October-December, 2016, 55 NIS educational psychologists attended 2-module training on the following programme «Stressless school: Integrative kinesiology in the educational practice».

Teaching integrative kinesiology is a modern child psychological and physiological health recovery practice.

Psychologists are a necessary element of the school learning management system because their results are intended to improve the quality of learning at school.

Within 2016, educational psychologists held **8 746** individual and group consultations among learners, parents and teaching staff.

4.5. EDUCATIONAL RESOURCES

4.5.1. TEXTBOOK DEVELOPMENT FOR SECONDARY SCHOOL UNDER THE IEP

To provide the learning process under the IEP with educational resources, textbooks are being developed.

During the period under consideration, textbooks for NIS, Grades 7-8, together with the University College London Institute of Education (Great Britain) were developed. In terms of this direction, 5 workshops for authors and editors, Grade 7, and 3 workshops for authors and editors, Grade 8, were held.

As a result of works in this direction during the reported year:

- draft versions of **9 textbooks in 9 subjects for Grade 7**: «Mathematics – part 1», «Chemistry», «Physics», «Biology», «Computer Science», «Art», «World History», «Geography», «History of Kazakhstan»;
- draft versions of **8 textbooks in 8 subject for Grade 8**: «Chemistry», «Physics», «Biology», «Computer Science», «Art», «World History», «Geography», «History of Kazakhstan» were created.

TEXTBOOK REVIEW

During the 2016 year, there was a review of (7 grade or Grade 7 ?) textbooks with support from Cambridge International Examination in 6 subjects: Chemistry, Physics, Biology, Computer Science, Geography with the view to identify the standard of textbook components to the subject programme and check consistency of components within each textbook.

4.5.2. ONLINE TEXTBOOKS sk.nis.edu.kz

In order to support teachers and learners of Intellectual schools with teaching and learning materials, the OT complex is being constantly updated (OT - online textbooks) and has been operating as a united information space to share experience and scientific knowledge.

39 805 resources have been developed for teachers: short-term plans, topic-based material for class preparation, didactic materials, formative assessment, practical and laboratory works, summative assessment, presentations, audio and video materials, interactive components and digital educational resources.

Pedagogic knowledge base contains several modules.

The **«Internal Summative Assessment Base»** module is designed to carry out examination of the internal summative assessment materials for compliance with the requirements to test specification and evaluation of the material content by the CPM employees. This module includes **8 589** materials that are examined according to the schedule, samples and the material storage examined in the previous academic year. **4 545 summative works have been examined online and approved** for internal summative assessment.

Module **«Research Society»** has been created to support NIS researchers to share scholarly knowledge and experience. It includes materials of workshops, Skype-conferences, conferences, research projects, analysis of data, resources.

Materials including theory, presentations, audio and video materials, tasks of formative assessment for additional learning and preparing for test and examinations have been placed in the module **«Independent learning for NIS learners». 8 735 teaching materials have been developed, 25 631** tests, that learners can do online and get the results, have been uploaded. Depending on the level of compexity each test, the passing score and time available for test have been defined.

There is a module called **«Independent learning»** for learners that give opportunity for independent learning including **8 735** sets of learning materials in 20 subject areas in three languages with 24-hour access. website: http:\\sk.nis.edu.kz

Learners are allowed to solidify and review their knowledge on difficult topics, test their knowledge based on the total score of the online testing. During the reported period **12 687** users have visited the website.

4.5.3. LIBRARIES ACT in several areas:

- Promoting reading culture, reading and informational literacy, learners' research skills;
- Cooperating with parents;
- Increasing NIS library workers' professional competence;
- Establishing library fund.

PROMOTING READING CULTURE, INFORMATIONAL LITERACY AND LEARNERS' RESEARCH SKILLS

In order to encourage reading among our learners, we have ensured that a range of events are regularly conducted. Starting from 2013 there have been reading clubs functioning in all 20 of the Intellectual schools, in which learners discuss the latest books and share their impressions.

During the reporting period there were online readers' conferences held among the clubs' participants. These were held internally among the NIS network, as well as between the Intellectual schools and Wharton High School (Florida, USA) in the framework of the «Global Readers» reading club, (Kokshetau).

Apart from club work there are network projects being implemented, such as «Drop Everything and Read», «123», «Bookcrossing», «Reading Time», «100 books Recommended to Intellectual School Learners», «Book Start», READx, «Writers Among Us», «Young Poets», «Writers of the New Generation», «Your Favourite Book in 5 Minutes», «World Cafe», and «Youth and Reading: Things in Common».

Our librarians inspire their learners to read for pleasure. They help learners develop their critical thinking, as well as reading, informational and functional literacy.

In order to aid learners as they develop the skills of searching, analysis, processing information, research and critical reading, there were informational literacy classes conducted in all of the libraries on the following topics: «Well-reasoned Material Analysis», «Visual Literacy», «Developing Informational Literacy through Newspapers», «Dark Poetry», "Usage of Analytical Surveys, «Graphic Organizer», «Bloom's Camomile» strategy, «6 Thinking Hats», and «Brain Storming».

The South Korean «123» project deserves special attention: one book is to be read in a month with daily 20-minute sessions on it, and at the end of the month, learners have 3 minutes to write an essay on the book. This kind of practice allows learners to remember the book better, develop the skills of working with text and thoroughly understand every word in the book, at the same time as improving themselves through reading fiction.

INTEGRATED CLASSES

Since 2016 subject teachers are conducting integrated classes with librarians, a practice which opens new possibilities for libraries and allows learners to develop on all fronts. The main goal of the classes is to develop reading and informational literacy through intersubject reading integration. This occurs via providing informational classes, conducting active games, and other methods using library resources.

The following integrated classes were conducted in all of the Intellectual schools:

- Biology class - «Evolution»
- Geography class - «Deep Respect for our Motherland»
- Kazakh Language class -»Scanning and Reviewing Texts about Day and Night», «The Seven Wonders of the World», etc.;
- English Language class - «Colors», «School Objects», «The Alphabet», etc.;
- Global Perspectives and Project Work class - «Youth and Media», «Gender Policy in Media»;
- Kazakh Literature class - «Truth and Myth», based on B. Momyshuly's work;
- Self-knowledge class - «I Have Come into this World»;
- There has also ben reflective work on authors with difficult lives, such as Nick Vujicic, Joanne Rowling, Stephen Hawking, etc.

WORKING WITH TEACHERS

During the covered period, the Intellectual school libraries were working closely with **methodic unions????,** curators, and teachers via sharing experiences, conducting workshops and trainings on functional, informational literacy, plagiarism, and usage of educational resources. An online workshop called «Enabling Learners' Academic Potential» was held on behalf of MM Publications (Greece), that provided schools with examples of textbooks of varied levels. The workshop targeted the areas of teaching classes with different levels of preparation and differentiated approaches.

During the academic year, training sessions on using the international informational database EBSCO and educational resources Twig-bilim and Bilimland are regularly conducted for learners and teachers, with access to the resources being provided.

WORKING WITH PARENTS

The libraries in Nazarbayev Intellectual Schools are centres of creativity and inspiration. Our librarians are always actively engaging parents in the school library activities.

«Family Reading», «Book Lover», «Favebook» club meetings are often held, at which parents and children read interesting books, play or simply talk, discuss plots and answer questions about books, and also practise group and individual methods of work in game form.

Reading clubs are a special creative platform for informal communication between learners and parents, where they can discuss books, share opinions and reading recommendations, play games and holding events for club participants.

Engaging parents in family reading clubs allows to reinforce the connection with school and promotes family values.

PROFESSIONAL DEVELOPMENT FOR NIS LIBRARY WORKERS

In 2016, NIS librarians took part in workshops with international experts from South Korea, Indonesia, Singapore. The themes were «Practical Use of Libraries According to the Results of Reading and PISA Interconnection Research» and «Future: Reading Programs and Skills of Research Literacy in the 21st Century». The workshops raised the issues of developing reading and informational literacy, integrated classes, forms and methods of conducting high-scale events, methods of promoting culture of reading, ways of developing the research skills of learners, and reading club work.

NIS librarians attended a conference called «Communications. Cooperation. Society.» in Columbus (USA).

In order to discuss relevant problems and joint projects with international library workers, share experiences, and get familiarized with aspects of developing librarianship in other countries, librarians took part in the 45th Annual International «IASL-2016» School Library Association Conference on «School Libraries in the Age of Digital Technologies» in Tokyo (Japan).

The experience acquired in the process of this training will be put to use in Intellectual School Libraries and shared with grammar schools.

NIS LIBRARY FUND

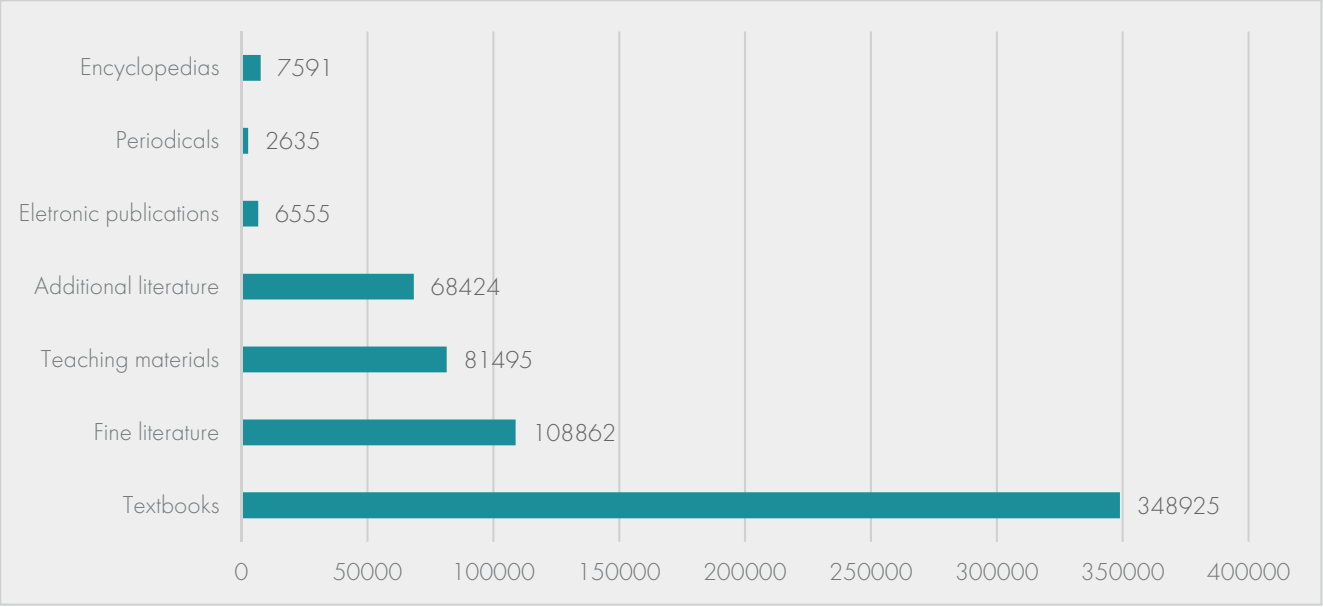
A library academic fund is being developed according to the IEP, taking into consideration teachers' and learners' requests, needs and interests, as well as the analysis of the domestic and international library markets.

In order to effectively support the academic process with educational, methodological and scientific materials, the libraries have been developing the NIS fund through working with the following publishing houses: Atamura, Qazaqparat, Aruna, Foliant, Uwenta, Eksmo, Academia, Azbooka-Classica, Cambridge University Press, Oxford University Press, Kingfisher, Jones & Bartlett Learning, Thomson & Heinle, Imperial College Press, Usborne Publishing Ltd, Usborne Publishing Ltd, Cengage Learning, Barrons, DK, Puffin, Pearson Education Limited, Penguin Books, MMPublications, and Bloomsburt among others.

The book fund as of November 2016 consists of **625 038** academic, methodological, and fiction titles as well as scientific literature.

The libraries of the Intellectual Schools aim to improve their effectiveness in order to achieve the objectives of academic process - and to therefore support the mission of Intellectual Schools - through working on encouraging reading, developing learners' research skills, while also promoting informational and functional literacy,

Diagram. Total library fund of Intellectual schools



UNIT 5.

RESEARCH PROJECTS

UNIT 5. RESEARCH PROJECTS

In order to improve NIS work and ensure a greater focus on its sustainable development, close attention is being paid to internal and external research.

The year 2016 saw a series of practical research projects in the following areas:

1. *Trilingual Education in Intellectual Schools* - research into the mechanisms and factors aiding and impeding the introduction of the tri-lingual policy;
2. *The Integrated Model of Criteria-based Assessment in Intellectual Schools* - research into the efficiency of the criteria-based assessment according to seven model criteria and teachers' opinions on the assessment system.
3. *Implementing Action Research and Lesson Study in Intellectual Schools*, -research into the advantages and impediments of using the above-mentioned approaches to ensure professional development for teachers of Intellectual Schools;
4. *The Effect of Studying in an Intellectual School on the Further Study and Career of Learners as Seen by Year 2010 Graduates* - a part of the long-term research among Intellectual School graduates.
5. *The Assessment of Intellectual School Teacher Attestation* - research into opinions on the assessment procedures, and a comparative analysis of the national and international teacher attestations.

These studies are insider researches and are aimed at improving performance. However, insider research is prone to having risks such as neutrality loss, possible conflicts between research and professional activities and data bias. Such risks can be negated through collecting feedback from the members of NIS Scientific Consulting Council, which consists of Kazakhstani and international experts in the field of education. The next stage in these studies is involving external experts and third-party observers.

Another risk is that research takes a considerable amount of time to conduct, and might not stay up to date with changes. Accordingly, in order for research results to stay relevant upon completion, the NIS departments and centers need to be closely cooperating with the purpose of updating the data obtained and presenting any applicable recommendations.

The research projects conducted give a big picture of various project implementations and require further development, aiming for a thorough study of the pending matters and a sophisticated integration with various components of the educational system. Next year four of the presented projects will be continued.

To create evidence-based practices, NIS uses the Action Research and Lesson Study approaches along with other important tools. These have been in use since 2012. Via implementing these techniques in their work, teachers improve their professional qualifications, based on the results of their research projects. Collective planning, reciprocal attendance and lesson discussions promote a collaborative environment and the pedagogical self-analysis needed to solve relevant questions of teaching. Currently there are **650 and 750 teachers**

involved in Action Research and Lesson Study respectively. Any materials created, collections and guidelines on Action research and Lesson study are directed to and used by schools inside the network.

To provide due credibility for the research, a combination of «internal» and «external» cultures is required, which was considered during conducting several cooperative studies with other organizations:

- «Study on Nazarbayev Intellectual School Learners' Health (Nazarbayev University AEO, Nazarbayev Intellectual School AEO);
- «Study on the Psychological and Educational Well-being of Kazakhstani Learners for Further Improvement of their Achievements and Psychological Health» (Nazarbayev University AEO, University of Cambridge, Nazarbayev Intellectual Schools AEO);
- «Validity of Assessing Reading Literacy in Trilingual Educational Institutions Nazarbayev Intellectual Schools (CITO, Centre of Pedagogical Measurements);
- «Expected Validity of Competitive Selection: Proposal on Research and Research Budget» (CITO, Centre of Pedagogical Measurements);
- «Improving the Content of Secondary Education in Kazakhstan in the Context of the Modern Reforms» (AOE «Nazarbayev University», University of Cambridge, AOE «Nazarbayev Intellectual Schools»);
- «Assessing the Effectiveness of Level-based Programs and the Centre of Excellence Leadership Program in Kazakhstan» (University of Cambridge, Centre of Excellence), and others.

The results of the given studies are shown in separate reports which have been provided to the NIS administration, and which will be discussed in-depth with the relevant structural subdivisions in order to put the research results to use and improve further studies. In doing so, we aspire towards narrowing the significant gap between research in education and its' practical use - where academicians do not simply research and teachers teach, but where a close integration of these processes is taking place.

The results of the studies conducted were presented at the following international conferences:

- 14 projects were presented at the European Educational Research Association conference (August 2016, Dublin, Ireland);
- 1 project was presented at the Comparative and International Education Society conference (March 2016, Vancouver, Canada);
- 4 projects were presented at the World Association of Lesson Studies conference, (September 2016, Exeter, UK).

DEVELOPMENT OF SCIENTIFIC POTENTIAL AND INTERACTION

Scientific research projects are a new area for NIS, and the main objective during this period is the development of the internal research potential of Intellectual School employees.

There are currently **158 employees with various academic degrees (Masters, Candidates of Science, PhDs)**. NIS and its four centers (COE, CEP, CPM, ERC) therefore have scientific research potential that needs to be shown and sustained. For example, **50 NIS employees have conducted research projects** on such topics as «Psychological Aspects of Developing Human Capital Assets in the Field of Education», «Study of Practices Used in Assessing Teachers of Kazakhstani Comprehensive Schools», and «Study on Teacher Leadership in Kazakhstani Comprehensive Schools»; and currently there are about **50 international publications in English regarding the Intellectual Schools** in the form of scientific articles, international reports, and conference summary reports.

The Scientific Consulting Council plays a large role in developing this scientific potential, as it operates under the Provision verified by NIS management on May 18th 2016 (minutes #19). Via correspondence (June 29, 2016) and personal interfacing (October 26, 2016), meetings were held to discuss research projects and the 8th NIS International Research-to-Practice Conference (hereafter the Conference) as well as matters of the Kazakhstan Educational Research Association (hereafter KERA). The SCC reviewed the annual NIS research activity report, noted that NIS had

done an excellent job in developing its' research potential thus far, and set a further strategic goal. As a result, a number of recommendations on the futher development of our scientific potential, promotion of cooperation with KERA and suggestions on the conducted studies were given.

In order to promote the scientific potential of NIS and develop network interaction, various platforms are being established. One of them is the **Regional Research Forum** on «Developing Schools' Potential through Network Interaction», which was first held from June 23-24, 2016, on the premises of the Intellectual Schools in Aktau, Almaty and Petropavlovsk. Over 350 interested teachers of the Intellectual Schools gathered, and were involved in workshops, , section presentations, practical training, and presentations of research, all in the form of interactive learning and discussions designed to further their studies of pedagogical practices. All of the interactive activities were aimed at creating a lively discussion with the purpose of sharing experiences and resolving difficult questions that can appear in the process of teaching and learning. Considering the significance of this event in terms of teachers' professional growth there are a number of regional workshops planned for 2017.

In order to promote research activities, NIS employees and international experts have conducted **20 online classes on «Methods of research in Education» for Intellectual School teachers in Kazakh, Russian and English.** The online class schedule can be found on the website: http://research.nis.edu.kz/?p=810&lang=ru.

Internal as well as external cooperation with such partners as the Higher School of Education under Nazarbayev University, the Kazakhstani Educational Research Association and the Department of Education under the University of Cambridge are taking place in order to facilitate the growth of research culture. Apart from collaborative studies, a number of workshops involving trainers from the Department of Education under the University of Cambridge (Zsolt Lavicza) and the Higher School of Education under AEO «Nazarbayev University» (Daniel Torrano) were conducted for NIS and its centers employees, at which the participants improved their statistical analysis skills.

OECD PROJECT FUTURE OF EDUCATION AND SKILLS: EDUCATION 2030

One of the most important areas of work in 2016 was the participation of NIS in the OECD project «Future of Education and Skills: Educations 2030». This project was launched in **July 2015** with the purpose of global coordination in achieving the **4th Objective** in the area of sustainable development, which focuses on providing a high standard of education by 2030.

As per the decision of Yerlan Sagadiyev, the Minister of Education and Science of the Republic of Kazakhstan, NIS is **a national coordinator** in terms of the OECD project.

The most important question for the project participants is, **«What kinds of knowledge, skills, approarch and values must learners obtain by 2030?»** The project is aimed at fully adapting the schooling process for the unpredictable conditions of the modern world (world VUCA) and outline the concept of a school in 2030. At the same time the project is not aimed at the form and the contents of the curriculum but rather at establishing a common language and platform, where countries collectively and individually could study the questions of elaborating educational systems.

NIS and the Ministry of Education and Science Informational Analytical Centre representatives attended two OECD meetings in Paris and Beijing. There were over 100 representatives, experts in the field of education, various school networks and social partners from 18 countries at the latest meeting (November 2016) in Beijing. It is expected that the number of participants will grow in order to cover a wider circle of interested parties. Acting as a national coordinator, NIS presented its representative with the chance to comment on the project and the reinvigoration of a sustainable educational system in Kazakhstan.

Currently the conceptual frameworks for «Education 2030» and «Educational Compass 2030» are being developed for learner navigation in time and space. A review of scientific literature specified in the curriculum, a questionnaire on updating the curriculum, a «heat map» of data comparison and an in-depth analysis of Mathematics and Physical Education subject contents.

This project will allow NIS to thoroughly examine the questions of sustainable education both in Kazakhstan and on a global scale, as well as to use the results of secondary education in comprehensive school analyses begun in September, 2016.

UNIT 6.

EDUCATION QUALITY ASSESSMENT

UNIT 6. EDUCATION QUALITY ASSESSMENT

The Intellectual schools use a complex quality education assessment system, which gives the possibility for an individual approach to learners from competitive selection to the final academic assessment of graduates. The assessment system monitors learners' academic achievements and the criteria-based assessment of academic results, as well as the final academic assessment of graduates of secondary and high schools procedures.

6.1. STUDENT ACADEMIC ACHIEVEMENT MONITORING

Ongoing monitoring is being conducted in order to identify learners' academic achievements, the amount of remaining knowledge to be learned, and to potentially correct the development trajectory of an individual.

The monitoring is performed in the form of electronic testing via Questify software and answer sheets.

MONITORING LEARNERS' EDUCATIONAL ACHIEVEMENTS: MATHEMATICS in 7-12 grades of Intellectual Schools

In 2016 two monitoring procedures were conducted:

In January (2015-16 academic year) - for 7th to 9th and 12th Grade learners from 19 Intellectual Schools

In September (2016-17 academic year) - for 7th to 12th grade learners from 20 Intellectual Schools.

There were **708 test tasks** created for monitoring across the grades (which are: Grade 7 - 60 tasks, Grade 8 - 34 tasks, Grade 9 - 76 tasks, Grade 10 - 538 tasks).

9 213 learners participated in the January monitoring.

As a result of the monitoring, **78 051** reports were prepared and presented to the Intellectual Schools, including:

- **34 345** comprehensive individual reports on the quality of all fulfilled tasks;
- **121** grade-level and parallel-level reports;
- **9 240** comprehensive individual reports describing levels of academic achievement;
- **34 345** reports on learners' progress.

12 101 learners participated in the September monitoring.

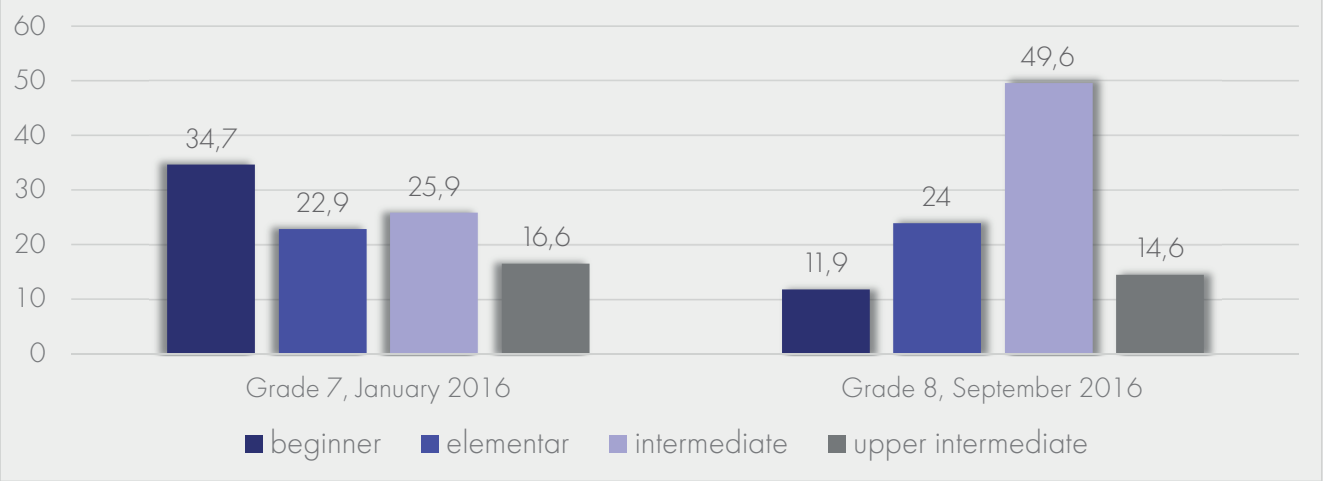
As a result of the monitoring, **112 458** reports were prepared and presented to the Intellectual Schools. Including:

- **50 119** comprehensive individual reports on the quality of all fulfilled tasks;
- **144** grade-level and parallel-level reports;
- **50 119** reports on learners' progress;
- **12 076** individual reports describing levels of academic achievements.

Results of the comparative analysis on the «Mathematics» subject show an upward dynamic at the four academic achievement levels of learners («Beginner», «Intermediate», «Upper-intermediate», «Advanced») across the five units of the curriculum: «Numbers», «Algebra», «Geometry», «Statistics and the Theory of probability», «Mathematic Simulation and Analysis», which represents learners' progress.

In comparison with January 2016 results the number of grade 8 learners shows a clear growth at «intermediate» and «upper-intermediate» levels in «Numbers» unit. Moreover, the number of the «beginner» level learners significantly dropped down.

Diagram. «Numbers» unit monitoring results, grade 8.



In «Algebra» unit the number of grade 9 learners indicates an upward trajectory at the «intermediate» level, while preserving the proportion of the «upper-intermediate» and the «advanced» level learners.

In the same unit the number of 12th grade learners at the «upper-intermediate» level rose from 9.4% up to 52.2%, while the number of the «intermediate» level learners sharply plummeted.

Diagram. «Algebra» unit monitoring results, 9th grade.

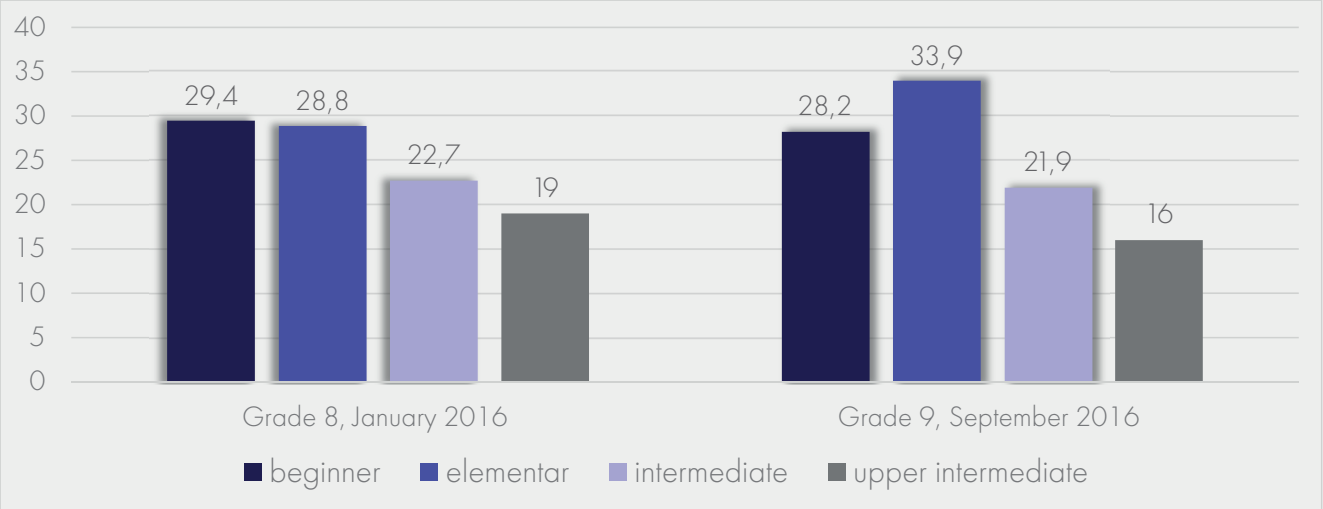
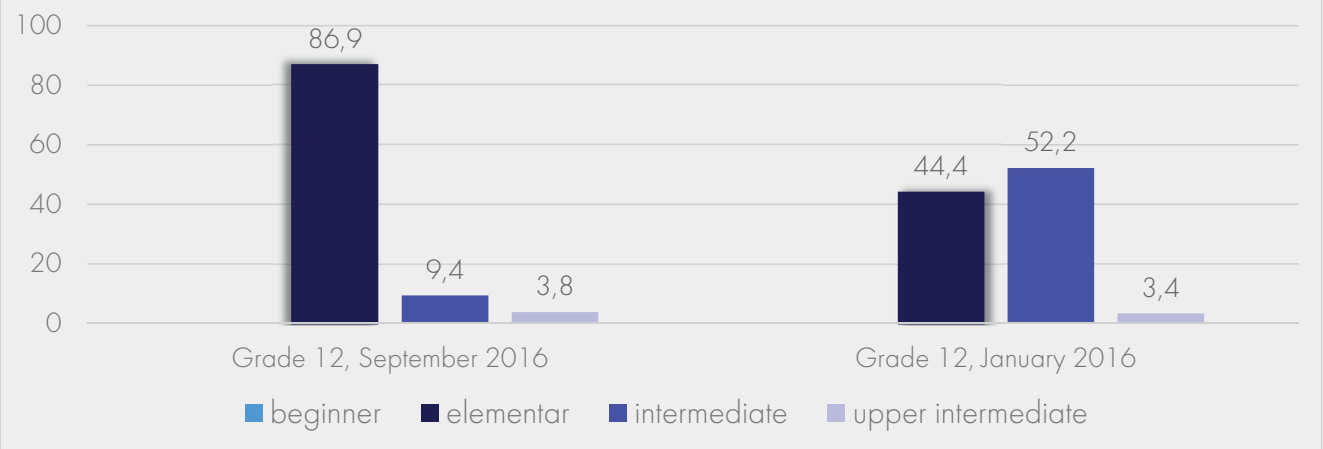
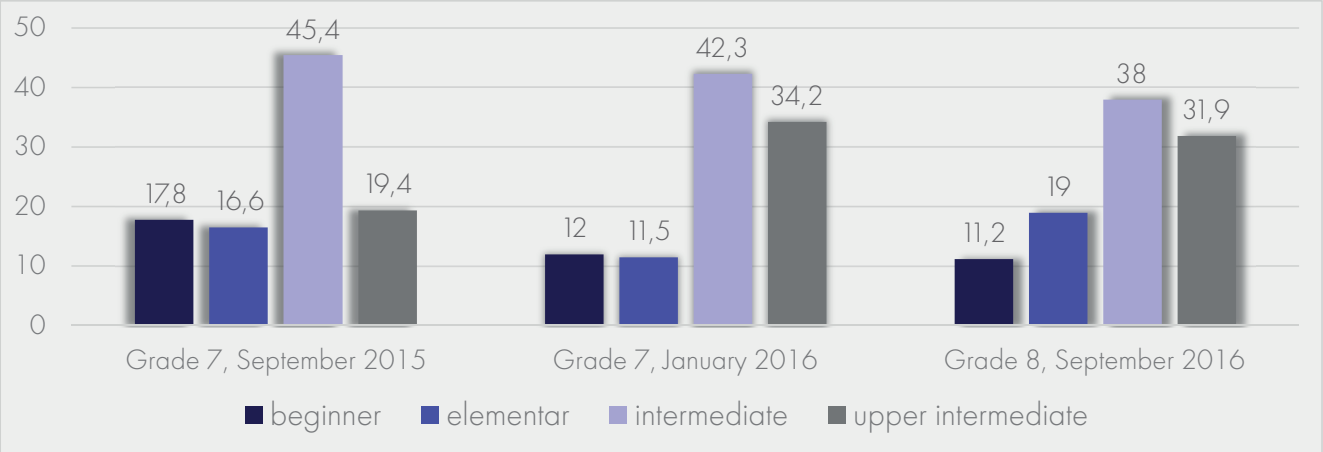


Diagram. «Algebra» unit monitoring results, 9th grade.



As of September 2015 the number of grade 7 learners prevails at the «beginner», the «intermediate», the «upper-intermediate» levels of academic achievements in «Geometry» unit. In 6 months the number of the «advanced» level learners shows a substantial growth. In September, the learners go in grade 8, with the number of «intermediate» level learners having grown and the number of the «upper-intermediate» and the «advanced» learners moderately dropping down.

Diagram. «Geometry» unit monitoring results, grade 8. elementary



In September 2015 most of grade 8 learners were at the «beginner» level, however, in January and in September 2016 the number of «intermediate» and «upper-intermediate» level learners steadily grew **in «Geometry» unit.**

During the first half of the academic year a sharp growth of the **Grade 12 learners in this unit can be clearly observed** at the «intermediate» and the «upper-intermediate» levels.

Diagram. «Geometry» unit monitoring results, grade 9.

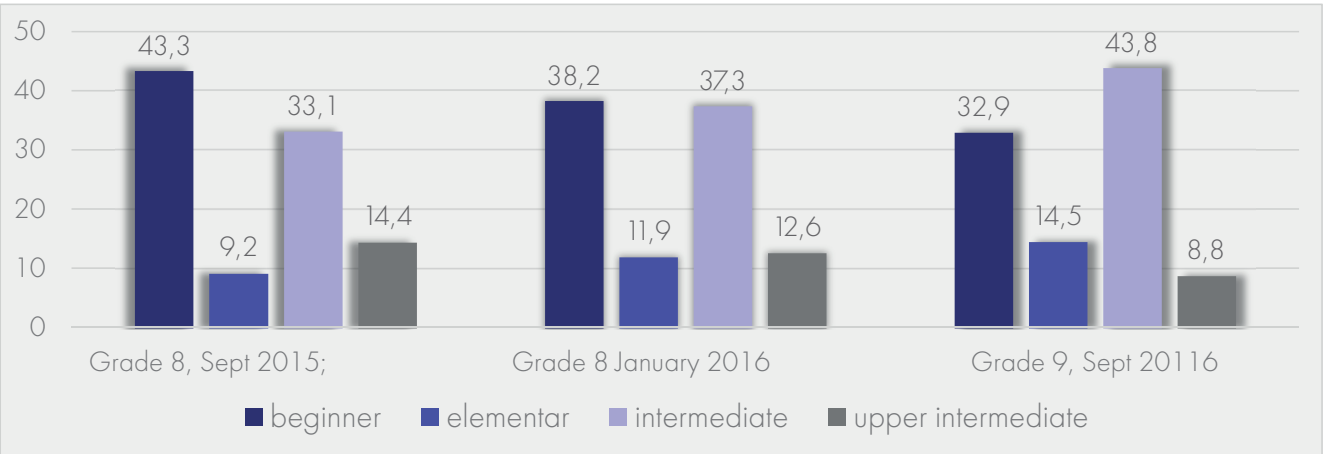
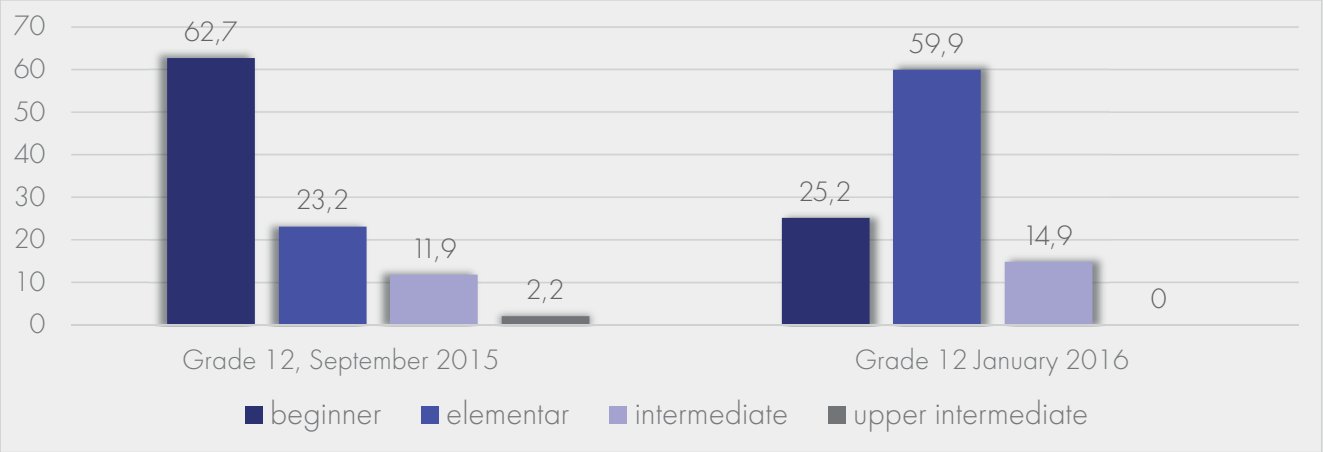


Diagram. «Geometry» unit monitoring results, grade 12.



During the first half of the year **in «Statistics and the Theory of Probability» unit** the number of grade 7 learners showed a substantial growth at the «upper-intermediate» level, while the number of learners at the «beginner» level dropped.

The number of grade 12 learners similarly showed a significant growth at the «intermediate», «upper-intermediate», «advanced» levels during the first half of the academic year.

Diagram. «Statistics and the Theory of Probability» unit monitoring results, grade 7.

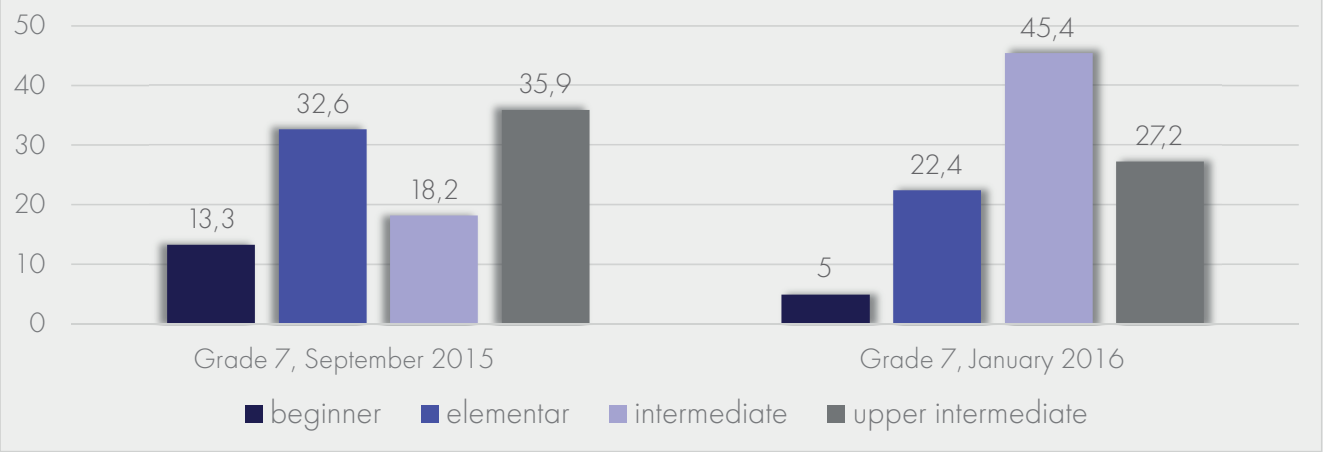
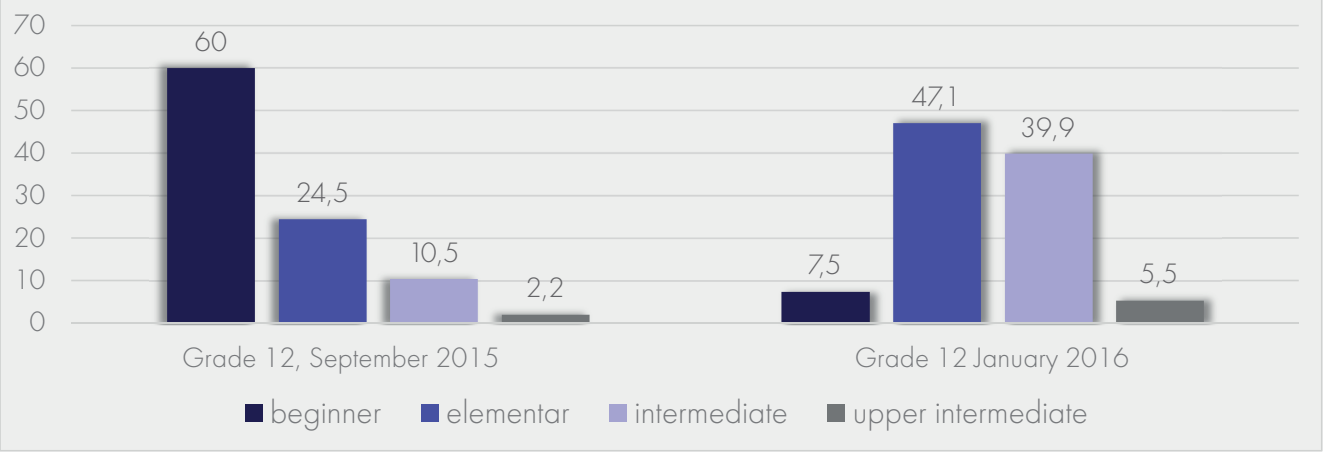


Diagram. «Statistics and the Theory of Probability» unit monitoring results, grade 12.



In «Mathematical Simulation and Analysis» unit comparing to September and January 2016 results the number of the «beginner» level grade 8 learners seems to be dropping, while the «intermediate», «upper-intermediate» and «advanced» level learners' number is growing.

In the same unit the number of **grade 12 learners** seems to be growing at the «upper-intermediate» and «advanced» levels, while the number of the «beginner» level learners is dropping down.

Diagram. «Mathematical Simulation and Analysis» unit monitoring results, grade 8.

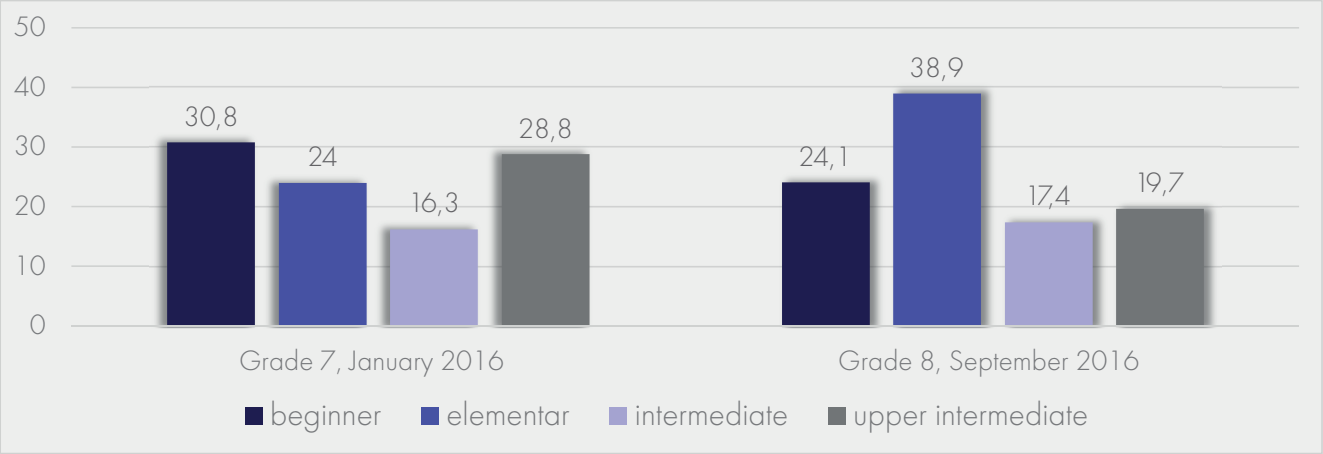
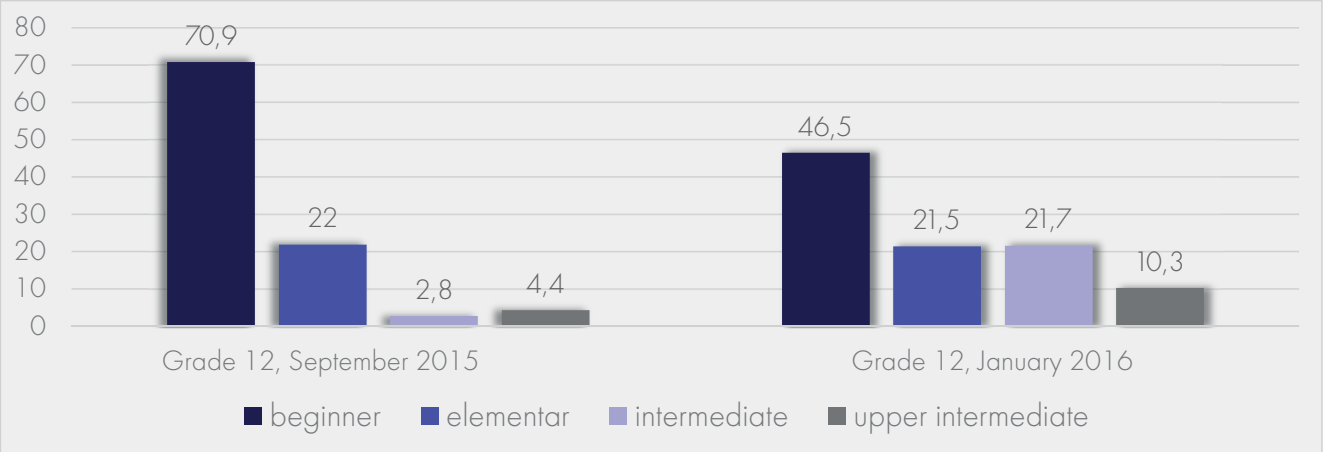


Diagram. «Mathematical Simulation and Analysis» unit monitoring results, grade 12.



Therefore, the monitoring results show a clear indication that all learners, grade 7 to grade 12, are making progress in the five «Mathematics» units.

In the framework of designing and implementing the grade 7-12 learners' academic achievements monitoring system there were 4 workshops conducted on «Mathematics» subject for mathematics teachers, 3 of them administered with the help of international experts at the Institute of Pedagogical Measurements, Cito, Netherlands.

The workshops included:

- a discussion of the monitoring results, conducted in grades 7-9 and 12.
- an expertise on 2601 tasks;
- a confirmation of the test designated structure;
- an establishment of level borders and their description.

The given workshops saw 29 participating teachers.

The peculiarities and the results of the learner monitoring system were presented at:

- 42th International Educational Assessment Association Conference on «Assessing achievements in the context of curriculum standards - an on-going dialogue» in Cape Town, South Africa, August 2016. The articles was published in the conference collection.
- 17th European Educational Assessment Conference on «Social and political basics of educational assessment»: the past, the present, and the future» in Limassol, Cyprus, November 2016. The article titled «Learner mathematics achievements monitoring as an effective tool of adjusting learners' individual trajectories and improving teachers' didactical instruments» was published in the conference collection.

International experts showed a great deal of interest towards the presented materials.

LEARNERS' ACADEMIC ACHIEVEMENTS MONITORING IN LANGUAGE SUBJECTS

In order to assess learners' level of language proficiency two monitorings on «the Intergrated Kazakh language and literature» (further referred as Kazakh L2), «the Intergrated Russian language and literature» (further referred as Russian L2), «the English language» were conducted

- in April 2015-16 academic year for learners of grade 7, 8 at 19 Intellectual schools;
- In September of 2016-17 academic year for grade 7 learners at 20 Intellectual schools.

Based on the Integrated educational program there were 418 test tasks prepared for the monitoring in accordance with CEFR level system across 4 kinds of speech activities: Listening, Speaking, Reading and Writing.

CEFR levels (A1, A2, B1, B2, C1 и C2) have their sub-levels: Low, Mid, and High levels for a comprehensive monitoring of learners' progress.

Expected level of learners' language proficiency in the framework of the Integrated educational program and in accordance with the CEFR requirements at the end of a certain grade is presented in a Table below.

** CEFR (Common European Framework of Reference for Languages: Learning, Teaching, Assessment) is a pan-European system of assessing the level of a foreign language proficiency, which establishes a unifrom standard, applied in determining language competence globally. In 2001 the system was selected by the Council of Europe for creating national systems of assessing language proficiency. In CEFR system knowledge and skills are categorized in three groups (A, B, C), each of them having two levels of their own (A1, A2, B1, B2, C1, C2).*

Diagram. «Mathematical Simulation and Analysis» unit monitoring results, grade 12.

Класс	Предмет	Уровень языковой компетенции согласно CEFR
grade 6 (at the end of an academic year)	Kazakh L2 Russian L2 English	High A2
grade 7 (at the end of an academic year)	Kazakh L2 Russian L2 English	High B1 Mid-High A2
grade 8 (at the end of an academic year)	Kazakh L2 Russian L2 English	Low-Mid B2 Low-Mid B1
grade 9 (at the end of an academic year)	Kazakh L2 Russian L2 English	High B2 Mid-High B1
grade 10 (at the end of an academic year)	Kazakh L2 Russian L2 English	Low-Mid C1 Low-Mid B2

To have a second language as the language of study (geography, history of Kazakhstan, Modern Kazakhstan in Kazakh, computer science, world history in Russian) the learner's language proficiency level needs to be B1 (David Little, 2010, Crawford, A. N., 2014).

Results of the initial grade 7 learners' achivements monitoring

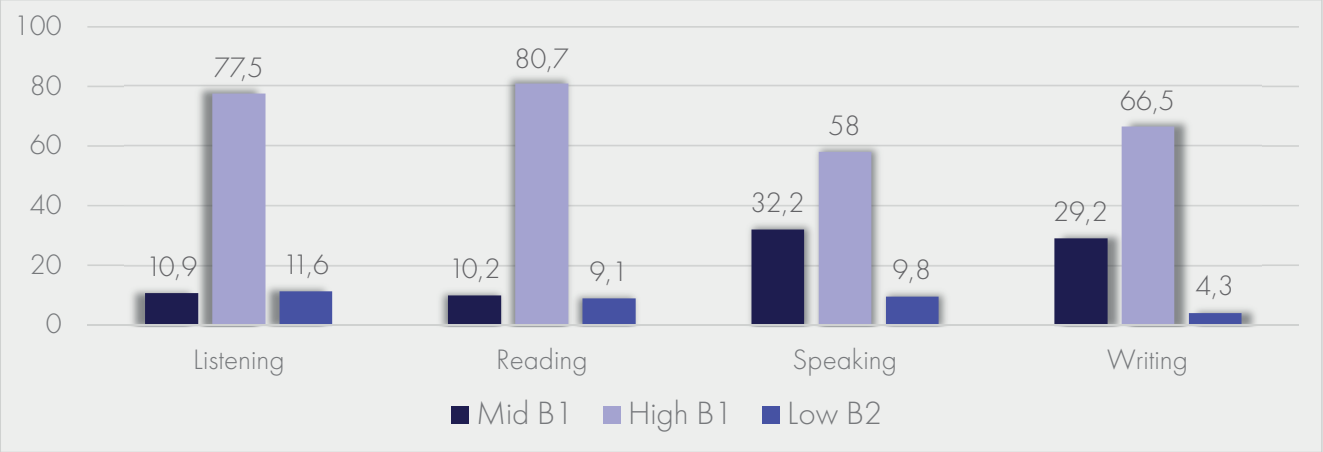
September 2016-17 academic year witnessed the first initial grade 7 learners' achievements monitoring in language proficiency. There were 2258 people participating in the monitoring.

Kazakh L2

The results showed that the vast majority of learners are situated at High B1 and Low B2 levels across all four skills: Listening - 89.1%, Reading - 89.9%, Speaking - 67,8%, Writing - 70.8%.

As it can be seen from the results Speaking and Writing skills of learners still have much room to grow.

Diagram. Grade 7 Kazakh L2 monitoring results, September 2016

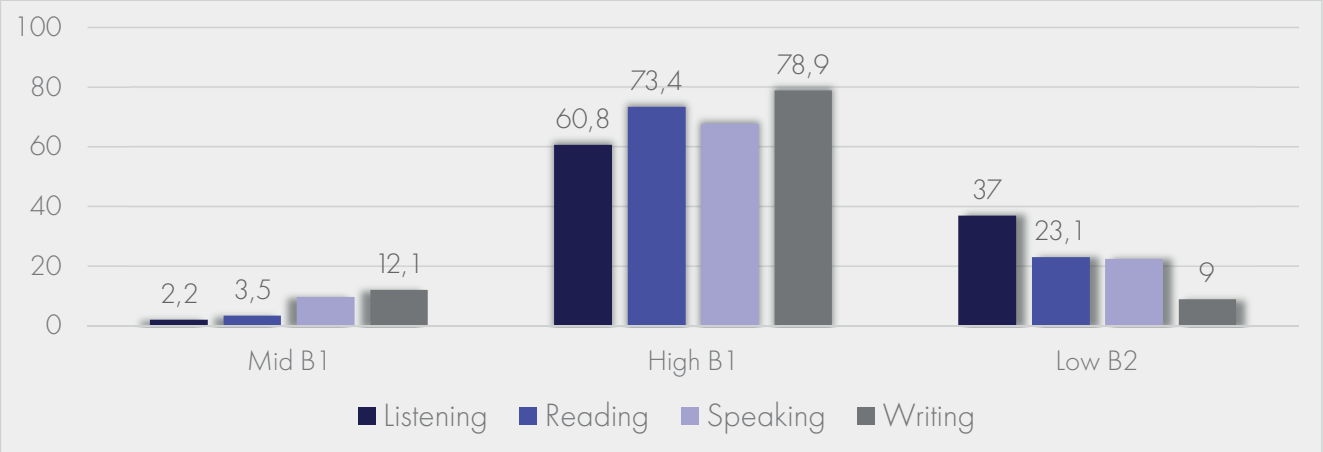


Russian L2

Similarly to the Kazakh language, all learners tend to have a higher level than the required High A2. Moreover, most of learners are at High B1 and Low B2 levels across the skills of: Listening - 97.7%, Reading - 96.6%, Speaking - 90.4%, Writing - 88%. Some of the learners even have Low B2 level.

Therefore, learners entering Intellectual schools have a sufficient level of language proficiency in Kazakh and Russian L2 according to the requirements of the Integrated educational program (High A2 and higher). These levels of language proficiency give a sufficient language basis for studying subjects.

Diagram. Grade 7 Russian L2 monitoring results, September, 2016



English

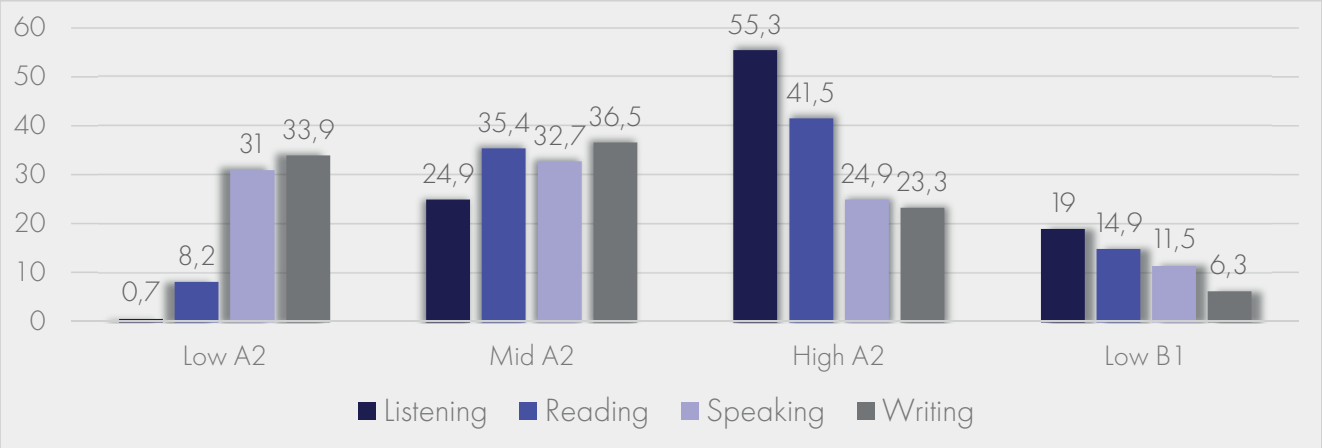
The subject programme requires that the learner have the Low-Mid A2 level English.

The monitoring showed that most of new learners have the Mid-High A2 and even Low B1 levels of the English language proficiency across the skills: Listening - 99.3%, Reading - 91.8%, Speaking - 69.1%, Writing - 66.1%.

This means that new learners have a sufficient basis of the English language proficiency to achieve expected outcomes.

31% learners in Speaking and 33.9% in Writing have low language proficiency, having the Low A2 level. Pedagogical assistance is required to these learners.

Diagram. The English language monitoring results in grade 7, September 2016



The language monitoring results are provided to schools in order for them to organize differential teaching aimed at developing learners' language proficiency.

As a result of monitoring **23 042** reports were prepared and presented to Intellectual schools. Including:

18 232 detailed individual reports;

4 558 individual reports on academic achievements levels;

252 group reports.

Learners' language achievements analysis

April 2016 monitoring saw **5 113 grade 7 and 8 learners participating.**

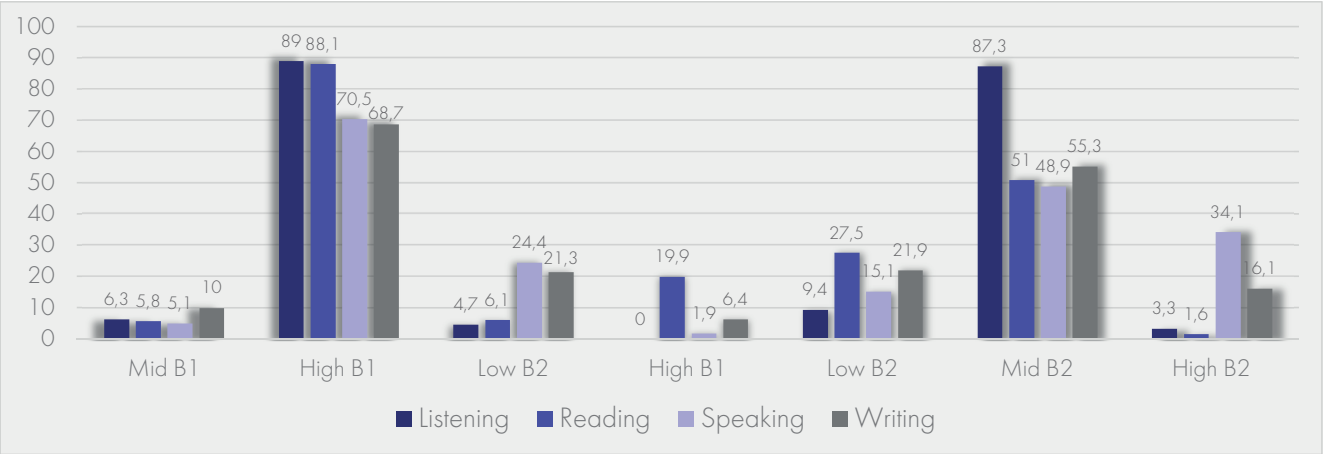
Grade 7 results will be used to assess grade 8 learners' progress in April 2017.

Below you can see the results of grade 8 (April 2016) and grade 7 (April 2015) monitoring results.

Kazakh L2

According to CEFR and IEP expected outcomes, in order to study Kazakh L2 a learner must have the Low-Mid B2 level of language proficiency. The monitoring results have shown that most of the learners have sufficient levels of language proficiency (Listening - 96.7%, Reading - 78.5%, Speaking - 64%, Writing - 77.2%). Some learners had an even higher level of High B2.

Diagram. Kazakh L2 monitoring results



The language proficiency comparison showed a substantial progress made in the year.

For instance, there are no more Mid B1 learners. Some learners raised their level from Low B2 up to High B2. A significant portion of Grade 8 learners have the Mid B2 level, while most of grade 7 learners had High B1.

A significant growth (35.1% and 15.2% respectively) can be observed in Listening and Writing skills. An upward dynamics can be observed in comparison with April 2015 and 2016 Speaking results (9.7% increase).

Therefore, the vast majority of grade 8 learners show a significant progress in Kazakh and can study other subjects in Kazakh.

Russian L2

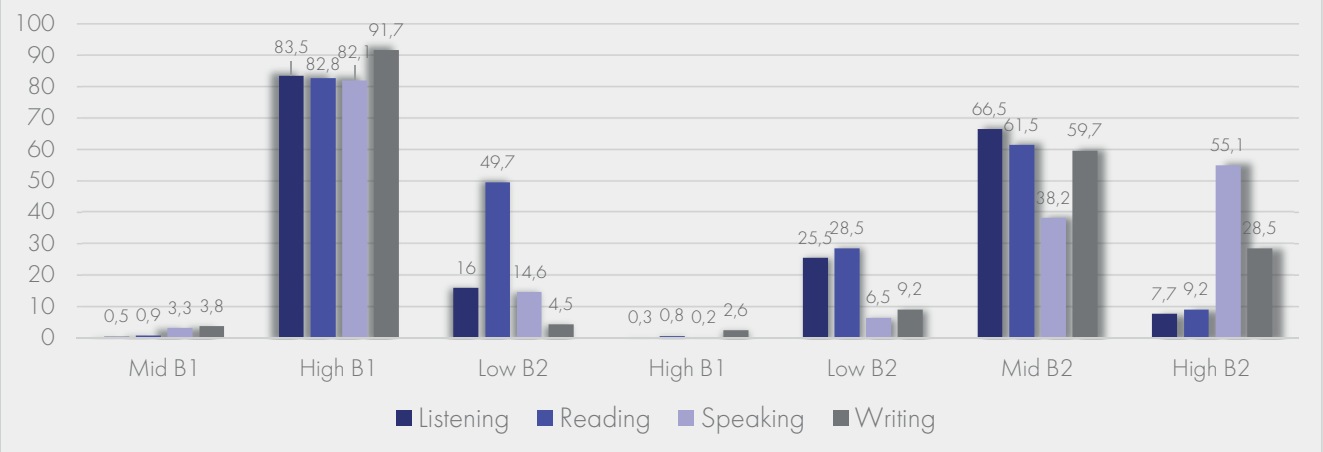
A grade 8 learner must have Low-Mid B2 level of language proficiency in order to study Russian L2. The monitoring has shown that most learners had a sufficient level of language proficiency (Listening - 92%, Reading - 90%, Speaking - 44.7%, Writing - 68.9%). Some learners had an even higher level of High B2.

The language proficiency comparison showed a substantial progress made in the year.

For instance, there are no more Mid B1 learners. Some learners raised their level from Low B2 up to High B2. A significant portion of Grade 8 learners have the Mid B2 level, while most of grade 7 learners had High B1.

Learners' Speaking and Writing skills have significantly improved by 40.5% and 24% respectively. An upward dynamics can be observed in Reading (an 11.8% increase) comparing to April 2015 and 2016 results.

Diagram. Russian L2 monitoring results

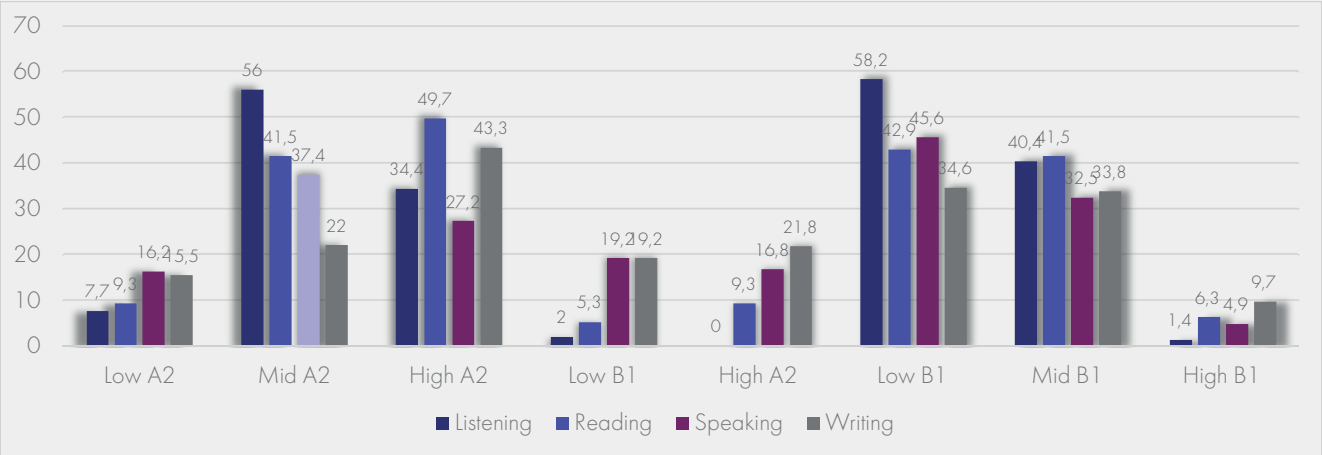


Based on the data provided above, most 8th grade learners can study subjects in Russian, showing a clear progress in studying Russian.

English

A Grade 8 learner must have Low-Mid B1 level to study English. The monitoring has shown that most learners had a necessary level (Listening - 98.6%, Reading - 84.4%, Speaking - 78.1%, Writing - 68.4%). Some learners had an even higher level of High B1.

Diagram. English language monitoring results



Thus, 8th grade learners made a substantial progress in learning English.

Learners became more proficient in Speaking and Writing skills with an 8.2% and a 12.6% growth respectively.

As a result of the monitoring **80 586** reports were prepared and presented to Intellectual schools.

Including:

- **39 072** detailed individual reports;
- **40 944** individual progress reports;
- **570** group reports.

Based on results of the analysis most of 8th grade learners have a sufficient English proficiency level, showing a clear progress in studying English.

Results of the analysis showed that new grade 7 learners had more developed skills of perceiving information in all the three languages at the beginning of the academic year. However, these learners seemed to struggle when asked to repeat the received information, which was a result of studying by the grammatical translational methodology.

However, the academic achievements analysis shows the grade 7 (2015) and 8 (2016) learners to have improved their proficiency in each language and skill by the end of the academic year.

It should be noted that grade 8 learners who had been studying at NIS for 2 years made significant progress in 2016, with a sharp increase in the number of learners who had the High B2 level in Speaking in both Russian L2 and Kazakh L2 and Writing in Russian. Moreover, another major increase was seen in the number of learners with Mid B2 level in Reading, Writing and Listening in Kazakh and Mid B2 learners in Reading in Russian.

In the framework of designing and implementing the grade 7-9 learners' academic language achievements monitoring system, three workshops were conducted by Sito experts for 31 NIS teachers and CPM workers.

6.2. CRITERIA-BASED ASSESSMENT SYSTEM

Since being successfully piloted and refined, the criteria-based assessment system is being used and constantly developed. Taking into consideration the experience of using criteria-based assessment in 2013-15, the system was improved and implemented in Grades 1-4 and 7 in 2016.

In order to facilitate the improvement of the criteria-based system the following was prepared:

- **43 methodological recommendations** on summative assessment for teachers in Kazakh and Russian;
- **instructions for criteria-based assessment** for Intellectual Schools teachers;
- **instructional reference documents** guiding criteria-based assessment in Intellectual Schools.

Additionally, in order to ensure a valid internal summative assessment, a summative review of results and test specifications was conducted together with Cambridge International Examinations. After this, internal summative assessment guidelines and templates were prepared for all subjects and grades, to be used in the coming years.

116 sample formative assessment activity collections and **83 internal summative assessment collections** inclusive of all subjects and grades **were prepared and made available for download from the** official NIS website.

In the period between July 12 and August 18 2016, **27 professional development** courses on integrating formative assessment into learning for **643 teachers** in all secondary and high school subjects took place. The courses were aimed at improving teaching and learning, and were conducted by CPM employees together with CIE consultants, with the goal of assisting teachers in the integration of formative assessment with constant teacher-learner feedback.

In December 2016, a «Sharing Experiences in Implementing the Updated Model of Criteria-Based Assessment» workshop was held at the premises of NIS Astana PhM. There were 21 vice-principals and 119 subject teachers from 19 Intellectual Schools in attendance.

According to the framework of the workshop, the teachers shared their experiences in the practical use of criteria-based assessment, discussed relevant questions and offered recommendations to other teachers on improving the practical uses of criteria-based assessment.

Also, the features of the criteria-based assessment system and the experience of implementing it in Intellectual Schools were presented at the following international conferences:

- the Association for Educational Assessment - Europe (AEAE) on the «Initiative of Implementing the System of Criteria-based Assessment in Kazakhstan» (Limassol, Cyprus);
- the International Association for Educational Assessment on «Teacher's and Learners' Assessment to Improve Teaching and Studying» (Cape Town, South Africa);
- the European Educational Research Association on «Integrated Model of Criteria-based Assessment in Intellectual Schools as an Effective Assessment System» (Dublin, Ireland).

The «Taking Change to Scale in Education: Approbation and Translation» International Research-to-Practice Conference organized by NIS had an «Assessment System» section, which considered the priorities of developing a criteria-based assessment system.

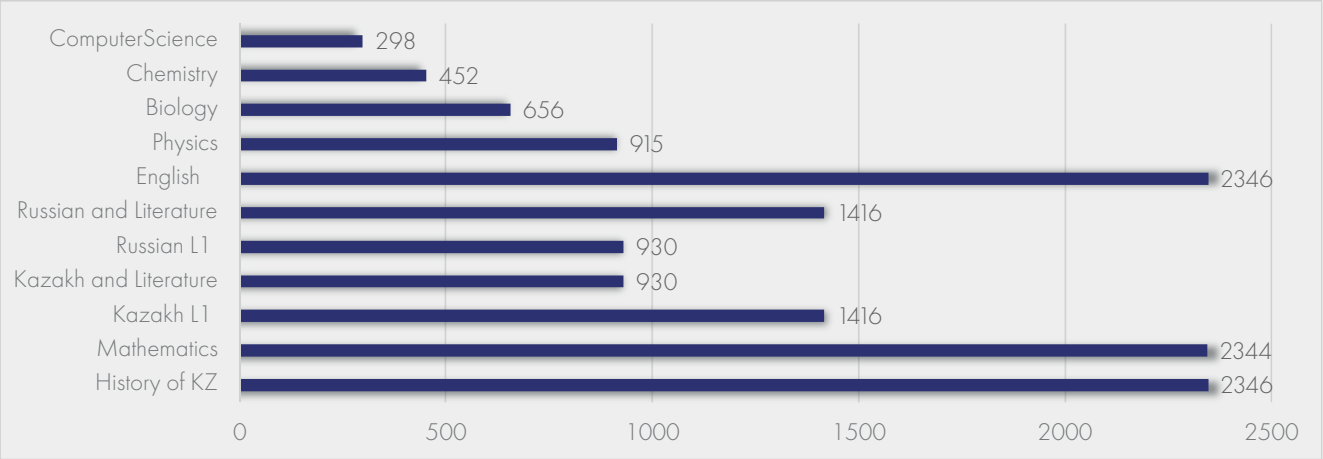
The experience in implementing criteria-based assessment in the Intellectual Schools was used to adapt and introduce an assessment system in Grade 1 of comprehensive schools within the framework of sustainable education.

6.3. GRADE 10 AND 12 EXTERNAL SUMMATIVE ASSESSMENT

Upon finishing secondary and high school, NIS 10 th and 12th Grade students take an external summative assessment (hereafter SA), that was designed and conducted in cooperation with International Cambridge Examinations (ICE).

SA at the end of secondary school can be compared to international standard IGCSE's, and first was conducted in Grade 10 of 16 Intellectual schools. There were **2 347** participants.

Diagram. Grade 10 Learners in SA in 2015-16 Across Subjects



Each learner took examinations in the five compulsory subjects and an additional one to be chosen out of four possible options. Compulsory subjects include History of Kazakhstan, Mathematics, Kazakh/Russian, Kazakh/Russian Literature, and English. The elective subjects are Chemistry, Biology, Physics, and Computer Science.

Grade 10 showed good results.

The Mathematics examination consisted of two components. The tasks aimed to test the ability to use mathematical operations and apply mathematical knowledge and skills. Learners proved their abilities in solving quadratic functions and graphing equations, using abridged multiplication formulas for reducing fractions, simplification of expressions with N-th root, and applying arithmetical and geometric progressions formulas.

43.2% learners got A*, A, B, and C marks, while 8.3% of them got A* and A, while the total percentage of learners across the world, that got A*-C marks at the IGCSE level exam, is 74.1. This is a result of gaps in the mathematical education in newly opened Intellectual Schools.

History of Kazakhstan examinations consisted of two components. The tasks were aimed at assessing both knowledge and comprehension of historical facts and events, the ability to analyze them, and to present ideas and conclusions. Learners have proven their abilities in working with historical sources, critical analysis of historical events, presenting concrete arguments and facts, as well as substantiating their conclusions.

88.6% learners got A*, A, B, and C marks, 12.2% of which got A* and A. The total global percentage of learners that got A*-C marks in the History subject is 83.6.

As we can see, Intellectual Schools learners are more developed than their international peers in terms of the above mentioned skills.

First Language (Kazakh/Russian) and Second Language (integrated Kazakh/ Russian and Literature) examinations consisted of two components, and the tasks were aimed at assessing communicative, linguistic and intercultural competence and knowledge of the modern society.

In the **First Language (Kazakh/Russian)** examinations, learners have proven their abilities in understanding the main characteristics of forms and genres, target audience, goal, content, style and language of the given texts. They also showed their comprehension of the connections between style and genre, source of information and target audience.

The percentage of learners that got A*, A, B, and C in Kazakh is 64.3%, while Russian is 77.4% - 2.3% and 10.6%, out of which got A* and A marks respectively.

At the **Second Language (Integrated Kazakh/ Russian and Literature)** examinations, learners proved their abilities in understanding text taken from different sources, answering questions, analysis, filtering and assessment of information, and presentation of information in a certain style. Learners presented their arguments and ideas, and expressed their impressions, observations, and opinions on ideas.

The percentage of learners that got A*, A, B, and C in Integrated Kazakh and Literature is 79.4%, while Russian and Literature is 97.3% - 13.5% and 16.3% out of which got A* and A marks respectively.

The **English** examination consisted of four components. The tasks were aimed at assessing communicative, linguistic and intercultural competence and knowledge of modern society. Learners have shown their competence in four language activities: speaking, reading, writing, and listening. Most of them could demonstrate comprehension of heard and read texts, as well as an ability to find main and additional information and present their thoughts in a logical consistent way.

73.6% learners got A*, A, B, and C marks, 5.4% of which got A* and A.

The **Physics, Chemistry, and Biology** examinations consisted of three components. The tasks were aimed at testing learners' knowledge and understanding of processes and laws, processing, applying and assessing information, as well as skills of practical and experimental activities.

Learners have proven their abilities in applying their knowledge in solving problems, hypothesizing, finding and systemizing information from different sources, presenting arguments to give ground to their answers, converting numerical values, describing facts, defining laws and theories, giving conclusions, conducting experiments and presenting data in various forms such as tables, graphs, diagrams.

The percentage of learners that got A*, A, B, and C is 53.8 in Physics, 79.2 in Chemistry, 88.7 in Biology, out of which 12.7%, 8.6% and 12.5% of learners got either A* or A marks respectively. The global Physics results are: A*-C 79%, in Chemistry: A*-C 78%, and A*-C 75.5% in Biology

The results were used for targeted planning of professional development courses for teachers on topics and units that were difficult for learners.

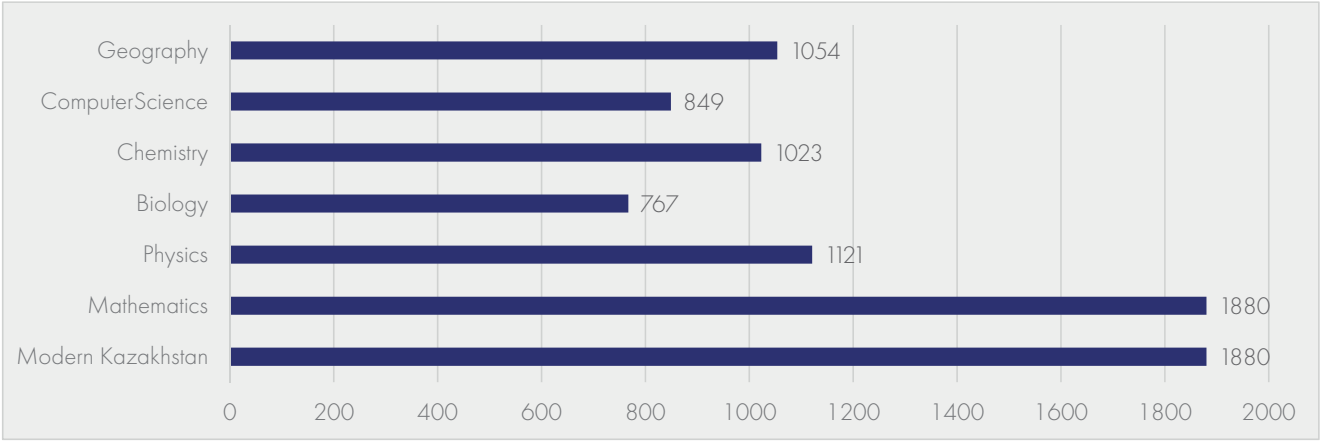
The **Computer science** examinations consisted of two components. The tasks were aimed at assessing the learners' abilities in modeling and project management, as well as applying algorithms and programming. As the results show, our learners have practical skills and the ability of critical thinking, and can both gather and analyse information, and design applications and code.

34.9% of learners got A*, A, B, and C, 0.7% out of which got either A* or A. The global percentage of learners that got A*-C marks is 79.8.

After considering the results of the examinations, in order to promote computer literacy, an elective course titled «STEM and Computer Science», jointly organized by the International Informational Technology University and the world-famous Carnegie Mellon University, was conducted for Intellectual Schools learners.

Our post-high school summative assessment is comparable to international A-level and AS-level standards. There were 1880 participants from 14 Intellectual schools.

Diagram. Grade 10 Learners in SA in 2015-16 Across Subjects



The learners took examinations **in 6 subjects**, 3 out of which were compulsory and 2-3 of which were optional. Compulsory subjects were Mathematics, Kazakhstan in the Modern World, and English, while the optional subjects were Geography, Chemistry, Biology, Physics, and ICT.

The **Grade 12 summative assessment has shown good results.**

The **Mathematics** examinations consisted of three components. The tasks were aimed at assessing the abilities of applying mathematical notions, using mathematical devices, and presenting mathematical arguments.

Learners performed well in tasks that required them to integrate their knowledge in Physics when solving tasks on «Differential Equations of the Second Order», describing harmonic oscillations. Compared to 2015 summative assessments, an upward dynamic in *«Binomial expansion», «Gaussian distribution (normal distribution)»,* «Poisson's distribution» can be observed.

48.6% learners got A*, A, B, and C marks, 12.6% out of which got either A* or A. The global A-level percentage of learners that got A*-C is 71.4. The lower performance of Intellectual Schools could be the result of the fact that 23 new topics that were not previously covered in the system of second-level education were included into the IEP. In order to teach these topics, the necessary professional development courses are being conducted.

In the subject of **Kazakhstan in the Modern World**, the examination consisted of two components. The tasks were aimed at assessing learners' knowledge and comprehension of historical facts and events, analysis, and abilities to present information and communicate.

Learners have proven their ability to use various facts and proofs in an appropriate context, to consistently and systematically express their thoughts and knowledge of «Mangilik Yel» values, and to comprehend history. Learners have shown good research skills in their course work in the «Kazakhstan and Globalization» unit of the curriculum.

75.2% learners got A*, A, B, and C marks, out of which 14.6% got either A* or A.

The **Physics, Chemistry, and Biology** examinations consisted of three components. The tasks were aimed at testing learners' knowledge and comprehension of processes and laws, in processing, applying and assessing information, and improving skills needed for practical and experimental activities.

In **Physics**, learners have displayed a scientific notion of the modern physical world-view, their usage of scientific methods of nature cognition: gathering, filtering, arranging and present information from various sources, applying knowledge in new situations, and argumentation. It should be noted that learners have developed a series of experimental skills, including elaborating and planning research; measuring, assessing and interpreting observations; and hypothesizing and argumentation.

In **Chemistry**, learners have shown the abilities to talk in scientific terminology, define terms and establish connections between physicochemical variables, apply logical thinking when solving chemical tasks, conduct a qualitative substance analysis, apply observational skills, measure, analyze and interpret data obtained during an experiment. Learners have proven their abilities to explain wide-spread physicochemical phenomena, analyze some ecological situations and arrange information when describing chemical productive processes.

In , learners have shown their abilities to understand biological terms, analyze anthropological factors affecting the environment and to compare various biological processes. Learners have also proven their abilities to design and conduct experiments, observe processes, calculate and interpret data obtained an experiment, work with drawings and other graphical information, use tables, hypothesize, assess information and make conclusions.

The percentage of learners that got A*, A, B, and C in Physics is 74.4%, in Chemistry - 72.9%, in Biology - 76%, among them 21,9%, 19,7% and 25,6% of learners got mark A* and A respectively. With that said, the global percentage of learners that got A*- C marks at A level in Physics is 68.7%, in Chemistry A*-C – 67.1%, in Biology: A*-C – 68,1%, which is below the results of the Intellectual Schools graduates.

The **Geography** examination consisted of three components. The tasks were focused on the evaluation of knowledge and understanding of terms, processes, and phenomena, as well as the skills of analysis, synthesis, evaluation and decision making.

The learners could recognize the semantic meaning of terms, demonstrate how they could work with the diagram and map, analyze the origin of natural phenomena and the influence of historical facts on social and economic processes occurring in Kazakhstan. They successfully applied their knowledge of the History and Economical Geography of Kazakhstan.

The share of learners who got A*, B and C made up 72.7%, and 20.8% of them got A* and A. Moreover, the share of international learners that pass exams at AS Level and have A*-C is 53.8%, which is significantly below the results of the NIS graduates.

In **ICT**, the examination work consisted of three components, with the tasks focused on the evaluation of knowledge and understanding of data, information, and software, as well as the skills of practical programming and decision making. The learners have demonstrated good practical skills in data collection and analysis, stage development and identification of efficient project development methods.

The share of learners that got A*, B and C was 48,4%, 6.9% of which got A* and A. The share of learners got A*-C around the world is 53.1%, which is slightly higher than the NIS learners.

INSPECTION

To accredit the examinations in accordance with international standards, the CIE inspectors and CPM employees have held the external inspection in Intellectual Schools. Inspectors have checked whether examination materials are stored safely and that examinations are held appropriately in accordance with international requirements. Based on the inspection results it is noted that preparation for the exam and holding it meet international expectations.

EXAMINATION PAPERS CHECK

To successfully check the examination papers and objectively score them, all teachers and specialists involved have taken CIE-supported training. **399** people have since taken part in checking **54 328** examination papers.

According to the external SA results, **1 879 (100%)** NIS graduates have received CIE certificates.

For all parties concerned, the following has been presented:

- **2** analytical reports based on the ESA results of Grade 10 (11 subjects) and 12 (7 subjects) learners;
- **26** collections of learners' sample answers on the SA subjects in Grade 10 and Grade 12.

They include the learners' answers that correspond with scores «A», «C» and «E», and examiners' comments on the tasks solved.

SA Management in the Nazarbayev Intellectual Schools and learners' results were presented at the VIII International Research-to-Practice Conference «Taking Change to Scale in Education: Approbation and Translation''. The article «Essay as a Final Assessment Form» has been published in the national newspaper «Educated Country».

Experience in external summative assessment management in the Intellectual Schools is applied while improving the final assessment of comprehensive national school graduates and Unified National Testing.


Nazarbayev Intellectual Schools NIS

in collaboration with
University of Cambridge Local Examinations Syndicate

NIS Grade 12 Certificate

This is to certify that the candidate named below was awarded the following grade(s) in the subject(s) shown:

2016 Examination Series [2016 Емтихандар/ Экзамены 2016]

BC KARAGANDA

Subject [Пән/ Предмет] — Grade [Баға/ Оценка]

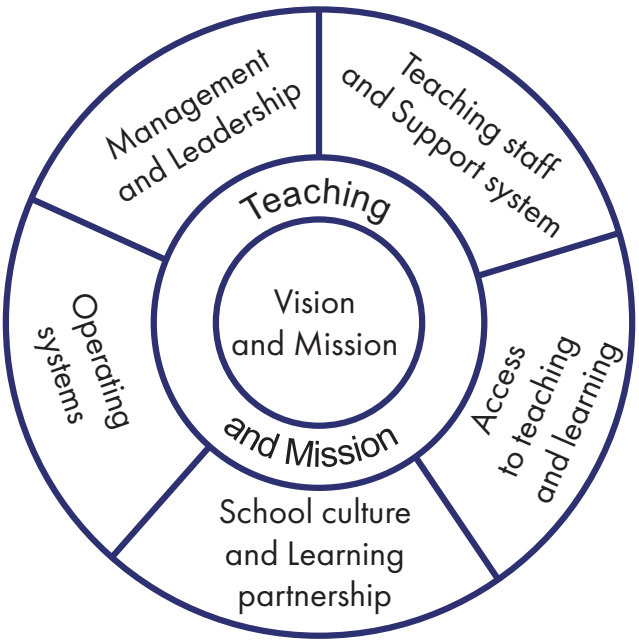
- Biology (Kazakh)
- Chemistry (Kazakh)
- Kazakhstan in the Modern World
- Mathematics (Kazakh)

SUBJECTS RECORDED: Four

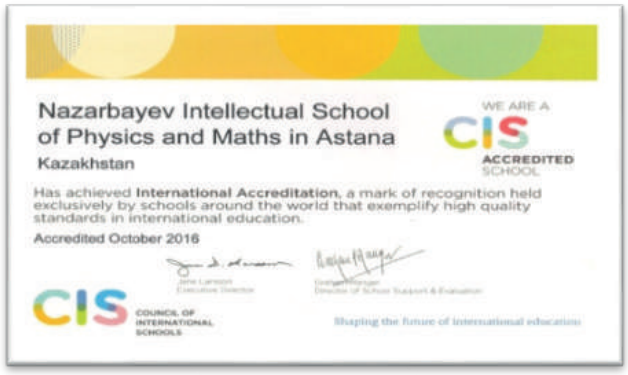
Chairperson
Autonomous Educational Organization "Nazarbayev Intellectual Schools"

Chief Executive Officer
University of Cambridge International Examinations

CAMBRIDGE International Examinations



Council of International Schools Accreditation Standards



6.4. INTERNATIONAL ACCREDITATION OF THE INTELLECTUAL SCHOOLS

One of the directions in the NIS education assessment is to have international organizations evaluating NIS activities.

Schools accredited by international organizations confirm the high quality of the educational services provided and ensure their learners have expanded opportunities to enter the leading universities of the world. Since 2011, Nazarbayev Intellectual Schools have been holding activities to get internationally accredited by the Council of International Schools (CIS, the Netherlands).

Accreditation is held according to the standards that cover 7 basic areas of school activities. Special attention is paid to **school mission and vision** as these identify the direction and strategy of NIS' further development.

Teaching and learning practice of learners needs to encourage their inclusive development, be based on a clearly formed subject program and assessment system, and consider the individual academic needs of every learner. During accreditation, such issues as school management, teaching and supportive staff availability and quality, teaching and learning accessibility, as well as our relationship with the community and parents are under consideration. Learner safety and school financial provisions are regarded as factors encouraging sustainable development of the learning process.

The basic method applied by CIS experts is called 'triangulation' (receiving information from three or more sources) that includes supervision of the educational process (lesson and school visits), interviews (conversations) with participants of the educational process (learners, parents, teachers, employees, administration) and documents revision.

It enables the experts to receive objective and valid information about school correspondence with the international accreditation standards.

Accreditation includes validation, preliminary and team visits after which CIS provides every school with a report and recommendations for further development and improving CIS standards.

In 2016, validation, preliminary and team visits have been held in 16 Intellectual Schools and the following results have been delivered:

- 20 Intellectual Schools now have membership in the international organization of Council of International Schools;
- 13 Intellectual Schools are «Candidates for Accreditation» and are currently undergoing self-assessment;
- 2 schools - Astana Intellectual School and Astana PhM, have been accredited by Council of International Schools.

Certificates and name badges of honor certifying the quality of NIS' educational services have been given to representatives of the parents' committee, learners' council and school principals.

In 2016, under the terms of preparation for self-assessment, the Endicott Research Center (USA) held a survey in 13 Intellectual Schools that enables learning the opinion of different participants of the educational process (learners, teachers, parents, graduates, school administration and others) about school management, and identify strengths and weaknesses for preparation for a school development plan.13,000 respondents took part in the survey.

The survey results are being used by the schools to identify strengths and weaknesses while writing the self-assessment report.

As a result of the survey and during the visits, the following aspects of NIS activity are mentioned:

- TEACHING and LEARNING - schools have a well-shaped subject program, objective assessment system and adherence to improving teaching in three languages; and the learners are highly involved in the educational process;
- MANAGEMENT and LEADERSHIP – the schools have a unique management structure, while the school principals have leadership and management skills, and there is effective cooperation between principals and NIS;
- HUMAN RESOURCES – the schools provide their teaching staff with different professional development opportunities, while the low number of learners per teacher makes it possible for individual learning;
- EDUCATION AVAILABILITY – the schools give individual support to learners (academic, language, psychological and so on), and the competitive selection of learners is performed considering the best world practices and encourages primary identification of learners' knowledge and skills;
- SCHOOL CULTURE – the schools actively cooperate with external organizations through the School Board, give support to graduates in professional orientation and have a unique educational system called Shanyrak;
- RESOURCES' PROVISION - schools have effective procurement and financial support that enables the arrangement of conditions for learning.

CIS holds activities intended to support the sustainable development of schools and improve the learning process. In 2016, at the CIS International Student Award contest, the student volunteer club of NIS Ust-Kamenogorsk won a prize for the project «Together, We Do Good!".

Grade 7 and Grade 9 learners at Uralsk NIS also took part in the contest with their project «NIS History: A Special Book for Special Friends».

To improve understanding of international accreditation and to deepen knowledge about international education the NIS teachers and administration took part in the following CIS activities:

- A symposium for accredited schools on the topic «Global Citizenship and Intercultural Understanding (London, Great Britain)»;
- A symposium for international school principals «Leading a World-Class School» (Melbourne, Australia).

CIS holds annual training for independent experts who participate in visits focusing on accreditation. In 2016, 8 NIS employees were invited to attend training for bilingual experts who speak both the Russian and English languages.

The NIS accreditation results have been presented at the VIII International Research-to-Practice Conference by NIS and CIS representatives.

The Intellectual Schools experience may be used to develop standards and procedure for the national accreditation of comprehensive schools, focussing on improvement of educational services provided.

UNIT 7.

STUDENTS' EDUCATIONAL ACHIEVEMENTS

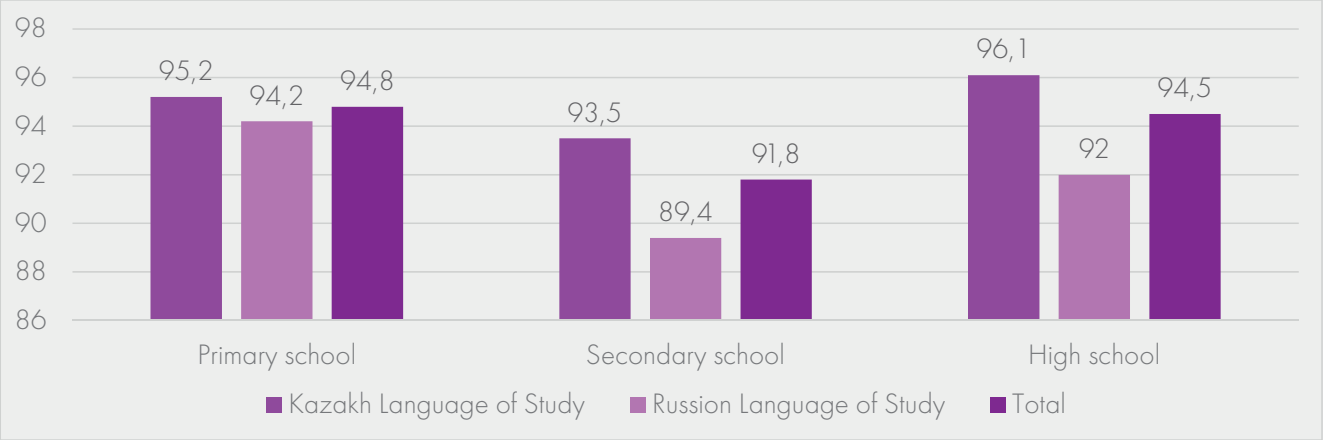
UNIT 7. STUDENTS' EDUCATIONAL ACHIEVEMENTS

7.1. ACADEMIC PROGRESS AND QUALITY ASSURANCE

By the end of the 2015-2016 academic year, 13,736 learners were studying at Intellectual Schools. 8 090 learners (59%) studied in the Kazakh language and 5 646 learners (41%) in the Russian language. According to the results, the 2015-2016 academic year performance of learners amounted to 100%, and the quality of knowledge to 92.4%.

The rates of quality of knowledge in classes where Kazakh is the language of studying is slightly higher than of those where Russian is the language of studying.

Diagram. Russian L2 monitoring results



Across the stages of studying, high rates of quality of knowledge exceed the strategic rates - on average by 13.7%.

Table. Rates of quality of knowledge

End of the year quality of knowledge	Expected values	2015-2016 academic year end quality of knowledge rates
primary school	90%	94,8
secondary school	70%	91,8
high school	80%	94,5

274 graduates received certificates of distinction by the end of secondary school, and 103 learners received honor certificates, while 55 learners were awarded with an «Altyn Belgi» by the end of high school. Every fourth learner finished school with «Excellent» marks, while 95.6% of learners graduated with either «Good» and «Excellent» marks, 19.1% out of which had only one «B» mark.

7.2. STUDENTS' RESULTS IN INTERNATIONAL AND NATIONAL OLYMPIADS, SCIENTIFIC COMPETITIONS AND CONFERENCES

One of the indicators of quality education is a learner's competitiveness and their competence in various fields of knowledge, which is demonstrated in different contests, competitions and Olympiads.

Thus, Intellectual School learners regularly participate in various national, international olympiads and scientific competitions.

In 2016, **3 693** learners took part in 35 national and international Olympiads and competitions, with **1 949 of these learners earning top** places (1321 in 2015). These include 494 first places; 691 second places; and 764 third places (See Appendix).

Diagram. Grade 10 Learners in SA in 2015-16 Across Subjects

Olympiads		Scientific competitions		Contests		Remote internet olympiads		Total		
National	International	National	International	National	International	National	International	National	International	Total
120	**21**	**55**	**11**	**224**	**5**	**1338**	**175**	**1737**	**212**	**1949**

Intellectual school learners have shown high competitiveness by succeeding at the most reputable international subject olympiads and scientific project competitions, such as:

- International Mendeleyev Olympiad (Moscow, Russia),
- International Chemistry Olympiad (Tbilisi, Georgia),
- International Biology Olympiad (Hanoi, Vietnam),
- International Zhautykov Mathematics, Physics, Computer Science Olympiad (Almaty, Kazakhstan),
- «Silk Way» International Mathematics Olympiad (Almaty, Kazakhstan),
- International Asian Pacific Mathematical Olympiad (Almaty, Kazakhstan),
- «Nanotechnology - a breakthrough into the Future» Russian Olympiad (Moscow, Russia), «Tuymaada» International Mathematics, Physics, Chemistry, Computer Science School Olympiad (Yakutsk, Russia),
- International Mathematical and Mechanical Research Competition named after Zholdasbekov (Almaty, Kazakhstan),
- «Exploring the Science World» International Space Research Competition (Baikonur, Kazakhstan),
- International Invention and Innovational Technologies Salon «Archimedes-2016» (Moscow, Russia),

- International Competition «I-SWEEP» (Houston, Texas, USA),
- «On the Way to Childhood Without Corporal Punishment» Conference (Vienna, Austria), «Human-Earth-Space» Russian Academic Research Project Olympiad on Environmental Problems for Children and Youth (Korolyov, Russia),
- International Scientific Competition «Mathematics and Engineering» (Moscow, Russia), European Mathematicians Congress (Berlin, Germany),
- 13th International Juniors Physics Olympiad (IJSO) (Bali, Indonesia),
- and the International Young Biologists Competition (Moscow, Russia).

High placement in Olympiads and competitions is the result of the collaborative work of teachers and learners, and the implementation of the Scientist Learner project, within which framework cooperation, mutual creative, scientific and research work are taking place.

In addition, a national team consisting of 16 learners from comprehensive and Intellectual Schools (hereafter National Team) represented the country at the International Olympiad WRO-2016 from November 25 to 27, 2016, in New Delhi, India.

«In 2014 NIS acquired the status of the national organizer in conducting the robotics olympiad in Kazakhstan by the rules of World Robot Olympiad (WRO).

In September of the current year, a preliminary round of a robotics Olympiad was conducted, which saw 248 teams from Intellectual and comprehensive educational institutions, non-commercial and commercial organizations gather on the premises of Intellectual Schools. 89 teams showed the best results and made it to the national round, which took place from October 8-9 2016 on the premises of the International School of Astana. At this event, hosted by the Department of Education and Science and NIS, there were 178 learners from comprehensive and Intellectual Schools, with 16 of them entering as members of the National Team.

At WRO-2016 the National Team took part in seven categories: Regular Junior High, Regular Senior High, Open Elementary, Open Junior High, Open Senior High, Advanced Robotics Challenge, and Football.

In the Open Category, the National Team presented three creative projects:

1. **«Eco House» waste processing station**, designed by Grade 7 learners of NIS Almaty ChB **Yerkin Akzhan** and **Zhusip Yeskendir**.
2. **«Waste Sorting Plant»**, which was designed by Grade 9 Astana NIS learners **Nassyrov Sultan** and **Zhangulov Aldiyar**.
3. **«Robot-assisted Orbital Station for Space Debris Destruction in the Earth's Orbit»**, a station prototype designed by Grade 9 and 10 learners NIS Taldykorgan PhM **Bek Talgat** and **Alexeyev Anatoliy**.

As a result of the three-day competition **«Robot-assisted Orbital Station for Space Debris Destruction in the Earth's Orbit»** won one of the most reputable prizes - the WRO «LEGO Education Creativity Award». The project was recognized as the most creative and innovative among the presented projects.

This triumph once again proves the excellence of the course - nurtured as part of the development of the robot industry in the country – as Kazakhstan and talented Kazakhstani children show their worth on the global stage.

Using the experience gained at WRO-2016, in 2017 the national robotics Olympiad will be held at the premises of EXPO-2017.

Aside from this, Intellectual School learners the following **registered objects of intellectual property** in 2016:

1. **Abdiraman Aizat**, Kyzylorda NIS learner – Certificate of Copyright Registration. Theme: «Trigonometric digit clock» - the copyright object was created on June 23 2010, registered as #847 circa June 24 2013.
2. **Aubakirova Dana, Akanov Akyl** Ust-Kamenogorsk NIS – Innovational invention patent for «tutsan-based composition» - the priority was established on 30.12.2014, and on 28.12.2015 the innovational patent of the Republic of Kazakhstan and the Eurasian invention patent for «Tatsun-based antidepressant» were given, 02.12.2015. The Eurasian request priority was set KZ2015/055.
3. **Fedorovskiy Artyom**, Pavlodar NIS, topic: «Method of producing an adsorbent for cleaning water from oil pollution», a utility model patent dated 3.11.2016.
4. **Bissenova Akmaral**, Kyzylorda NIS learner, topic: «Method of producing 1-methylpentyl acetate», the date of request: February 12, 2016.

The continued work on organizing and promoting Olympiad activities in Intellectual Schools:

- provides an appropriate environment for learners to meet their needs, and to develop their talents and interests;
- ensures the timely discovery of the vocations of learners who show a great interest towards learning a certain educational area;
- provides specialized training for university entrance;
- helps learners consciously choose their future profession.

Participation in intellectual competitions shows both the knowledge of factual material and the abilities to apply the knowledge in new, unfamiliar situations that require creative thinking; it develops the skills of functional literacy, task-focus, and smooth decision-making in a pressing situation. All of these listed qualities are important areas of competence for a learner in modern world.

7.3. STUDENTS' RESULTS IN INTERNATIONAL EXAMINATIONS

Learners of Grade 12, Intellectual Schools take IELTS (International English Testing System), an annual international exam which identifies the quality and level of their English language. The results of this exam are recognized by leading universities around the world.

In the 2015-2016 academic year, 2071 graduates from 16 Intellectual Schools took the IELTS exam. The average score for all of the schools was **5.8**, and at schools where graduates had been passing the exam for more than 3 years it was **6.1.**

The highest result, of **6.4**, was shown by NIS Astana PhM graduates.

52% of all graduates have an average score of 6 and more, with 11% gaining the very high result of 7 and above.

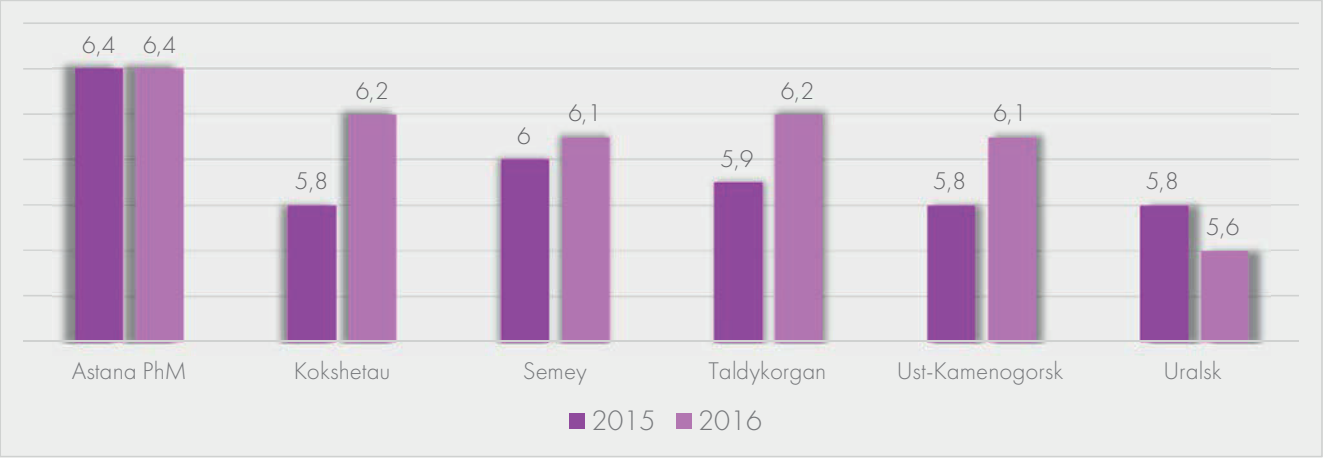
Table. IELTS results in 2015-2016

№	Intellectual School	Number of participants	the average score
1	Astana PhM	130	6,4
2	Kokshetau PhM	116	6,2
3	Semey PhM	111	6,1
4	Taldykorgan PhM	90	6,2
5	Ust-Kamenogorsk ChB	106	6,1
6	Uralsk PhM	170	5,6
Average score (working more than 3 years)		**723**	**6,1**
7	Karaganda ChM	170	6,0
8	Aktobe PhM	183	5,7
9	Shymkent PhM	129	5,8
10	Shymkent ChB	122	5,9
11	Atyrau PhM	182	5,3
12	Pavlodar ChB	78	5,9
13	Kyzylorda PhM	149	5,5
14	Taraz PhM	145	5,5
Average score (working less than 3 years)		**1158**	**5,7**
15	Almaty PhM	161	5,8
16	Kostanay PhM	29	5,2
Average score (for the first time):		**190**	**5,5**
OVERALL Grade point score:		**2071**	**5,8**

There is an upward trend in the improvement of performance almost in all schools compared to 2015.

Diagram. Grade 10 Learners in SA in 2015-16 Across Subjects

Results of over 3-year old schools



INTERNATIONAL EXAMINATIONS: SAT-1, SAT-2, and ACT

If graduates of the Intellectual Schools desire to enter leading foreign universities, they must take international exams such as the SAT, which check their academic ability to learning.

According to the results of the SAT-1 test in 2015, the number of graduates who got more than 1 800 was 19, with 32 graduates (50%) getting more than 1 600.

Moreover, 10 (6%) graduates got 800 points out of 800 in the SAT - 2 (which tests for Mathematics, Physics, and Biology)

These results allow them to enter the top USA universities.

According to the data from 2016, 65 graduates of the Intellectual Schools in Astana, Kokshetau, Semey, Uralsk, Karaganda, Shymkent (2), Pavlodar and Kyzylorda have achieved international certificates for SAT-1.

In addition to SAT-1, graduates of Intellectual Schools also passed the international SAT-2 exams for Physics (64), Mathematics (56), Mathematics 2 (17), Chemistry (89) and Biology (91).

The highest average score of the SAT-1 (2 057 out of 2 400) was received by a graduate of the Intellectual School in Karaganda.

The highest scores for the SAT-1 were received by:

- Zharmukhametova Laura - 2140 points out of 2 400 (Intellectual School in Karaganda ChB)
- Akhmetzhanova Aizhan - 2140 points out of 2 400 (Intellectual School in Karaganda ChB);
- Baitan Bakdaulet - 2 060 points out of 2 400 (Intellectual School in Shymkent ChB).

3 graduates of Intellectual Schools in Ust-Kamenogorsk have received ACT certificates. ACT (Academic College Testing) is an analogue of SAT, and is a standardized test for admission in United States universities and colleges. Orazgaliyeva Anel got 34 points put of 36 for this test, which matches 2 260 points in the SAT.

7.4. UNIVERSITY ADMISSIONS

2 071 learners graduated from Intellectual schools in 2015-2016 academic year. Their next educational steps included the following:

- 401 graduates entered Nazarbayev University, with 36 enrolled foundation-free straight to year 1.
- 1 443 graduates entered other universities in Kazakhstan.
- 224 graduates entered universities in geographically close or non-CIS countries.

Out of total enrolled graduates, 1 814 (or 88%) won grants, with 179 learners among them winning international grants in 22 countries around the world.

346 out of 700 grants (50%) for the Foundation program at Nazarbayev University, or essentially every second grant, were won by graduates of Intellectual Schools. However, 29 graduates who were offered grants for Nazarbayev University chose another university for their further education.

The most popular higher educational institutions among NIS graduates are the following: Nazarbayev University, Al-Farabi Kazakh National University, Gumilyov Eurasian National University, Suleyman Demirel University, International Information Technology University, and Kazakh-British Technical University among others others.

Image. The results of graduates' university entrance in 2016

Nazarbayev University

401 or 19,4 % graduates

(399 of them– on a fellowship basis, 2 –on a paid basis*)

Higher educational institutes of the RK

1 443 or 69,7 % graduates
(1 236 of them – on a fellowship basis, 207– on a paid basis)

Higher educational institutes of CIS

78 or 4 % graduates

(70 of them - on a fellowship basis, 8–on a paid basis)

Higher educational institutes of countries outside the CIS

146 or 7 % graduates

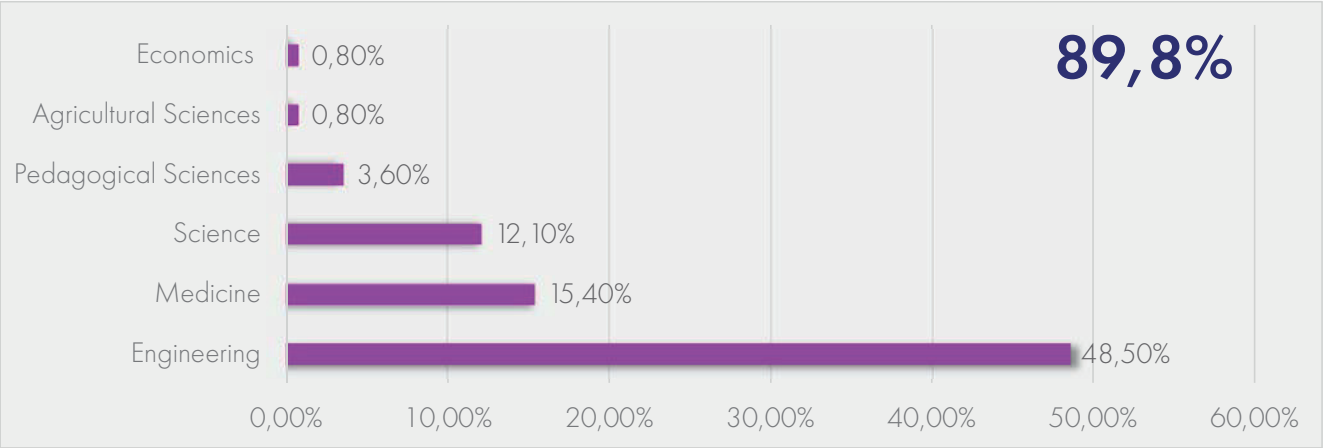
(109 of them- on a fellowship basis, 37–on a paid basis)

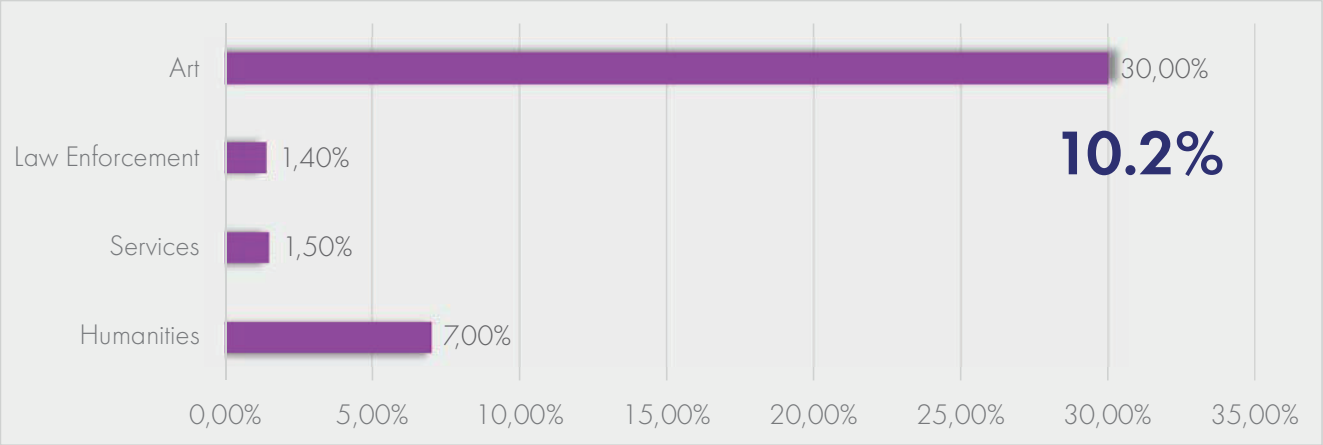
Table. List of the most popular Kazakhstan universities in 2016.

№	Name of higher education institution	Number of enrolled learners	Portion of total number of graduates
1	Nazarbayev University	401	19,4
2	Al-Farabi Kazakh National University	302	14,6
3	Gumilyov Eurasian National University	251	12,1
4	Suleyman Demirel University	112	5,4
5	International IT University	111	5,4
6	Kazakh Brititsh Technical University	84	4,1
7	Kanysh Satpayev Kazakh National Technical University	63	3,0
8	Karagandy State Medical University	57	2,8
9	Medical University Astana	41	2,0
10	Almaty University of power engineering and telecommunications.	37	1,8

Graduates of Intellectual Schools currently study at 27 universities around the world: Princeton University, Korea Advanced Institute of Science & Technology (KAIST), Management Development Institute (MDIS), Strasbourg School of Architecture, Hong Kong Polytechnic University (PolyU), Pusan National University (South Korea), Moscow State University (the Russian Federation), Czech National Technical University, and HAMK University of Applied Sciences (Finland).

Out of the total number of graduates who completed their secondary education at Intellectual Schools in the last six years, more than 80% choose technical majors (38,8%) such as Science (22.3%), Medicine (15.3%), Pedagogy (3.4%) and Economics (8.5%) for further education.





There are some other majors that have been chosen, such as «Aerospace Engineering», «Robotics and Mechatronics», «Nuclear Physics», «Applied Physics», «Energy and the Oil and Gas Industry», «Information Technology, Computer Science and Software», «Radio Engineering and Electronics», «Ecology», «Inorganic Chemistry», «Biophysics», «Biotechnology», «Chemical Engineering of Organic Substances», «General Medicine», «Pharmacy», «Public healthcare», «Dentistry», among others.

Table. NIS learners by grades (as of 20 November 2016)

Schools	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	TOTAL
Astana PhM							137	168	141	224	167		837
Astana IB							135	180	163	133	111	93	815
Aktau ChB							153	145	188	58		89	633
Aktobe PhM							125	138	97	84	176		620
Almaty PhM							140	147	96	251	221		855
Almaty ChB							98	153	350	128		149	878
Atyrau ChB							143	157	76	75	176		627
Karaganda ChB							131	160	82	89	191		653
Kokshetau PhM	60	58	56	57			120	94	74	105	90		714
Kostanay PhM							83	175	149	120	99		626
Kyzylorda ChB							100	116	113	169	136		634
Pavlodar ChB							77	137	134	132	137		617
Petropavlovsk ChB							105	172	138	92		78	585
Semey PhM							171	139	77	118	139		644
Taldykorgan PhM	60	57	57	36	35	34	120	88	88	80	75		730
Taraz PhM							102	137	138	106	167		650
Uralsk PhM							134	139	81	84	84		522
Ust-Kamenogorsk ChB							102	142	140	93	81		558
Shymkent PhM							134	118	133	90	163		638
Shymkent ChB							169	118	93	179	99		658
Total	**120**	**115**	**113**	**93**	**35**	**34**	**2479**	**2823**	**2551**	**2410**	**2312**	**409**	**13494**

Diagram. Grade 10 Learners in SA in 2015-16 Across Subjects

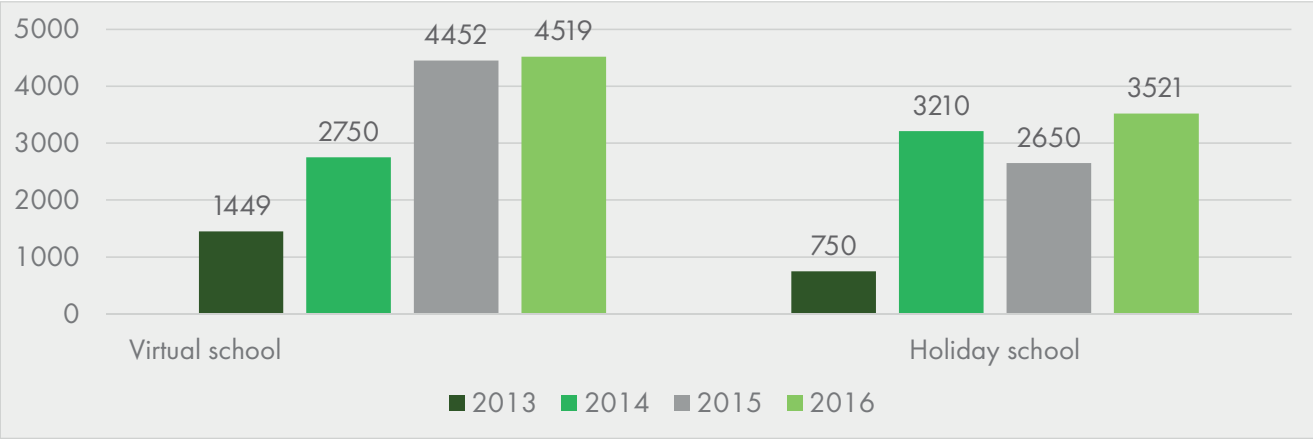


Table. Number of participants in Virtual School in 2016

№	Intellectual School	Participants VSCH (grade 5)	Participants VSCH (grade 6)	Total
1	Astana NIS PhM	110	219	**329**
2	Aktau NIS ChB	101	103	**204**
3	Aktobe NIS PhM	76	124	**200**
4	Atyrau NIS ChB	42	107	**149**
5	Almaty NIS PhM	119	167	**286**
6	Almaty NIS ChB	111	153	**264**
7	Karaganda NIS ChB	114	202	**316**
8	Kokshetau NIS PhM	48	172	**220**
9	Kostanay NIS PhM	12	88	**100**
10	Kyzylorda NIS ChB	29	172	**201**
11	Pavlodar NIS ChB	191	294	**485**
12	Petropavlovsk NIS ChB	22	75	**97**
13	Semey NIS PhM	60	211	**271**
14	Taldykorgan NIS PhM	41	86	**127**
15	Taraz NIS PhM	24	73	**97**
16	Uralsk NIS PhM	34	130	**164**
17	Ust-Kamenogorsk NIS ChB	67	170	**237**
18	Shymkent NIS PhM	105	112	**217**
19	Shymkent NIS ChB	150	405	**555**
	TOTAL	1456	3063	**4519**

Table. Number of holiday school participants as of 20 November, 2016

№	Intellectual School	Participants VSCH (grade 5)	Participants VSCH (grade 6)	Total
1	Astana NIS PhM	118	218	**336**
2	Aktau NIS ChB	63	100	**163**
3	Aktobe NIS PhM	66	91	**157**
4	Atyrau NIS ChB	57	89	**146**
5	Almaty NIS PhM	71	133	**204**
6	Almaty NIS ChB	69	86	**155**
7	Karaganda NIS ChB	108	152	**260**
8	Kokshetau NIS PhM	37	62	**99**
9	Kostanay NIS PhM	25	43	**68**
10	Kyzylorda NIS ChB	52	75	**127**
11	Pavlodar NIS ChB	137	169	**306**
12	Petropavlovsk NIS ChB	32	173	**205**
13	Semey NIS PhM	38	126	**164**
14	Taldykorgan NIS PhM	12	31	**43**
15	Taraz NIS PhM	40	69	**109**
16	Uralsk NIS PhM	60	123	**183**
17	Ust-Kamenogorsk NIS ChB	57	154	**211**
18	Shymkent NIS PhM	73	86	**159**
19	Shymkent NIS ChB	121	305	**426**
	TOTAL	**1236**	**2285**	**3521**

Table. Total Library Fund

№	Intellectual School	General Fund	Textbooks	Fiction	Textbook complexes	Additional Literature	Electronic Publications	ictionaries	Encyclopedia	Periodocal Literature
1	Aktobe PhM	28622	14132	3921	7721	1855	484	108	379	22
2	Aktau ChB	15601	8777	3681	1637	1107	63	28	284	24
3	Almaty PhM	22834	12591	4610	2820	2250	266	102	172	23
4	Almaty ChB	20219	13275	3571	1010	1876	133	19	323	12
5	Astana IB	25956	12870	7869	616	3735	240	337	265	24
6	Astana International School	34865	18039	9884	2665	3913	359			5
7	Astana PhM	29591	15043	4282	2437	7504	295			30
8	Atyrau ChB	55836	31812	10629	6610	5646	308	272	534	25
9	Kokshetau PhM	43498	20155	9456	7020	5646	524		673	24
10	Kostanay PhM	15236	9702	3224	325	1016	152		795	22
11	Kyzylorda ChB	23709	15113	3491	2889	1422	256	61	455	22
12	Karaganda ChB	23408	13566	3866	2276	2926	266	106	379	23
13	Petropavlovsk ChB	14159	5879	3968	1250	2533	55		446	28
14	Pavlodar ChB	25463	15849	3899	2667	2337	274	132	279	26
15	Semey PhM	37944	20510	5265	5199	6089	418	218	223	22
16	Taldykorgan PhM	55964	27361	7555	11741	8293	550	221	216	27
17	Taraz PhM	25778	15168	3996	3443	2340	279	122	389	41
18	Uralsk PhM	33096	21063	5099	3290	2807	365	212	238	22
19	Ust-Kamenogorsk ChB	37570	25570	3374	5903	1102	400		1200	21
20	Shymkent ChB	27919	19178	4053	1837	1748	472	608		23
21	Shymkent PhM	27770	13272	3169	8139	2279	396	89	329	25
	Total	**625038**	**348925**	**108862**	**81495**	**68424**	**6555**	**2635**	**7579**	**491**

Table. The number of winners of national and international contests of science projects and Olympiads

№	Intellectual School	Olympiads				Scientific Competitions				Competitions		Remote Internet Olympiads		Total	
		National		International		National		International							
		2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
1.	Astana PhM	6	8	-		-	3	-	3	6	7	-	61	12	82
2.	Astana IB	5	9	7		2	1	7	1	5	4	-	68	26	83
3.	Aktobe PhM	-		1		22	2	5		2	4	-	58	30	64
4.	Aktau ChB	-	2	-		-	3	-	1	-	2	-	10	-	18
5.	Almaty PhM	9	14	32	1	11	1	2		33	11	-	121	87	148
6.	Almaty ChB	-	18	-		-	6	-		-	13	-	170	-	207
7.	Atyrau ChB	1	1	-		-	2	-		7	6	17	161	25	170
8.	Karaganda ChB	2	6	-		3	12	-	1	1	10	5		11	29
9.	Kokshetau PhM	2	2	-		6	4	-		210	8	6	23	224	37
10.	Kostanay PhM	-	4	-		-	2	-		-	9	-		-	15
11.	Kyzylorda ChB	1	2	-		1	2	2	1	-	4	545	117	549	126
12.	Pavlodar ChB	6	6	9	10	-	2	-		44	4	6	110	65	132
13.	Petropavlovsk ChB	-	7	-		-	3	-		-	7	-	18	-	35
14.	Semey PhM	5	3	3	1	2		4		4	3	2	193	20	200
15.	Taldykorgan PhM	8	5	4	6	1	1	-	1	1	109	-	110	14	232
16.	Taraz PhM	-	7	-		5	5	-		2	7	3	23	10	42
17.	Uralsk PhM	18	6	-		-	1	-	1	35	2	-		53	10
18.	Ust-Kamenogorsk ChB	3	2	51	3	5	3	-	2	112	8	9	210	180	228
19.	Shymkent PhM	2	8	-		1	1	-		-	6	6	30	9	45
20.	Shymkent ChB	1	10	-		5	1	-		-	5	-	30	6	46
	Total	69	120	107	21	64	55	20	11	462	229	599	1513	1321	1949

Table. Grade 12 holders of certificates with honors, (%)

№	Intellectual School	2012 -13 Academic Year Proportion of Holders	2013 -14 Academic Year Proportion of Holders	2014 -15 Academic Year Proportion of Holders	2015 - 16 Academic Year Proportion of Holders
1	Astana PhM	14,0	11,6	12,1	11,5
2	Astana		6,8	0,0	
3	Kokshetau PhM	8,5	3,8	13,7	5,2
4	Semey PhM	10,0	3,1	6,0	3,6
5	Taldykorgan PhM	6,3	1,3	3,1	4,4
6	Ust-Kamenogorsk ChB	9,7	1,1	4,5	1,9
7	Uralsk PhM		4,3	6,8	9,4
8	Karaganda ChB			5,4	12,4
9	Aktobe PhM			2,2	3,8
10	Shymkent PhM			0,8	6,2
11	Shymkent ChB			0,8	3,3
12	Atyrau ChB			2,3	2,7
13	Pavlodar ChB			0,6	2,6
14	Kyzylorda ChB			1,0	2,0
15	Taraz PhM			0,0	0,7
16	Almaty PhM				3,1
17	Kostanay PhM				3,4
18	Almaty ChB				
19	Petropavlovsk ChB				
20	Aktau ChB				
	Total	9,8	4,6	3,8	5,0

Table. Number of Altyn Belgi holders by year and graduates

№	Intellectual School	2009-2010 academic year		2010-2011 academic year		2011-2012 academic year		2012-2013 academic year		2013-2014 academic year		2014-2015 academic year		2015-2016 academic year	
		Total number of school graduates	Altyn Belgi	Total number of school graduates	Altyn Belgi	Total number of school graduates	Altyn Belgi	Total number of school graduates	Altyn Belgi	Total number of school graduates	Altyn Belgi	Total number of school graduates	Altyn Belgi	Total number of school graduates	Altyn Belgi
1	Astana PhM	38	10	41	9	45	12	86	18	86	18	91	5	130	5
2	Astana	-	-	-	-	41	3			44	4	42	0	-	-
3	Kokshetau PhM	-	-	34	6	79	21	82	8	78	15	95	7	116	4
4	Semey PhM	-	-	57	16	71	7	80	5	64	5	83	0	111	1
5	Taldykorgan PhM	-	-	-	-	66	9	79	9	75	5	97	8	90	7
6	Ust-Kamenogorsk ChB	-	-	-	-	80	16	124	38	90	13	67	7	106	3
7	Uralsk PhM	-	-	-	-	-	-	-	-	46	9	133	7	170	4
8	Karaganda ChB	-	-	-	-	-	-	-	-	-	-	166	6	170	7
9	Aktobe PhM	-	-	-	-	-	-	-	-	-	-	135	0	183	1
10	Shymkent PhM	-	-	-	-	-	-	-	-	-	-	127	2	129	0
11	Shymkent ChB	-	-	-	-	-	-	-	-	-	-	129	0	122	0
12	Atyrau ChB	-	-	-	-	-	-	-	-	-	-	176	16	182	0
13	Pavlodar ChB	-	-	-	-	-	-	-	-	-	-	160	9	78	1
14	Kyzylorda ChB	-	-	-	-	-	-	-	-	-	-	101	7	149	1
15	Taraz PhM	-	-	-	-	-	-	-	-	-	-	97	0	145	1
16	Almaty PhM	-	-	-	-	-	-	-	-	-	-	-	-	161	15
17	Kostanay PhM	-	-	-	-	-	-	-	-	-	-	-	-	29	5
TOTAL		**38**	**10**	**132**	**31**	**382**	**68**	**451**	**78**	**483**	**69**	**1699**	**74**	**2071**	**55**

Table. Areas and names of professional development courses for the pedagogical staff of Nazarbayev Intellectual Schools within the country and abroad

Course Title	Number of People Trained	Result
Development of Teachers' Linguistic Competency		
CELTA Teachers Training	4 people	English teachers that have international certification
DELTA Teachers Training	2 people	English teachers that have advanced TEFL/TESOL international qualification
Intensive English Learning Online (General English/IELTS Online)	100 people	Subject Teachers (Physics, Chemistry, Biology, ICT) mastering English for their enhanced teaching in English.
Development of subject and professional skills and competency		
Learners Experimenting in PASCO laboratories	6 people	Teachers have learned advantages of using technologies and the PASCO lesson plan in order to to involve learners in real scientific practice, SPARK research opportunities for data collection and analysis, and advance their professional competency, enabling them to efficiently use Nazarbayev Intellectual School equipment as best they can.
Practice of the 'Theory of Chances' in Great Britain secondary schools	15 people	Participants have been introduced to CLIL teaching and its use in scientific disciplines.
«Triple Science» Integration	15 people	Participants have learnt the integrative approach to teaching Chemistry, Physics and Biology for the development of learners' thinking through the integrated, synthesized and systematized perception of questions on corresponding subjects.
Distribution, storage and administration of narcotic drugs, psychotropic substances and precursors	332 people	Nazarbayev Intellectual Schools Managers, Specialists and Employees are aware of safety rules when administering, storing, transferring and disposing of psychotropic substances and precursors (As per: Law of the Republic of Kazakhstan on «Civil Protection»).
«Accrual Method»	56 people	Course participants have been introduced the relationship between income and expenditure due to operations performed by the organization (accrual method and cash-basis method). The knowledge gained encourages proper and efficient financial management of the organization and its branches.
«Basic Resuscitation»	20 people	Practical methods for how to deliver basic resuscitation within an educational setting have been worked out.

Professional development of accountants of the Republic of Kazakhstan	1 person	Theoretical and practical issues concerning international and national standards of financial reporting, legislation of the Republic of Kazakhstan on accounting and financial reporting and other issues related to economics, finance, audits, taxes, civil, banks, insurance and pension legislation and IT in accounting were studied.
«Contract work: issues of interest, judicial practice, and tax consequence consideration»	2 people	Course participants have become familiar with the ways of legal risk management in contractual relationships.
«Modern approaches to teaching Science and Math subjects»	80 people	Subject teachers (Math, Physics, Chemistry, Biology) have studied the ways in which to solve challenging tasks and manage classroom situations that encourage the development of unusual and creative thinking.
«Risk management in accounting and budgeting. Special aspects of risk management in taxing»	33 people	Course participants have become familiar with the techniques and methods of risk management in accounting, budgeting and taxing. The knowledge gained allows them to initiate the development of such documents as Regulation on Risk Management, risk maps, risk registers, risk matrices and controls.
Assessment Standardization in terms of pedagogical staff and equal status employees.	88 people	Methodological recommendations have been worked out for the management of pedagogical staff assessment in terms of their personnel appraisal.
ICT Competency Development and application of new technological tools in the educational process		
Training course on the elective course «Robotics»	80 people	80 trainers for Robotics have been taught and trained for further training of teachers at comprehensive schools (action point of the Minister of Education and Science according to the minutes of the meeting dedicated to new educational content dated 19 March, 2016)
Professional development course on STEM + Robotics and STEM + Computer Science	80 people	Attendees learnt the ways how to integrate Science through the use of robotics and info-communication systems.
Development of communicative and personal competencies necessary for efficient interaction inthe lesson, dialogue-based teaching and application of active methods		
«School and Family - Family and School»	240 people	There has been training in terms of psychological support of the educational and bringing-up process on topics of interest, and appraisal of professional personnel competency held by the psychological service of the Nazarbayev Intellectual Schools.
«Applied aspects of the psychological service rendered for German education»	18 people	The psychological service used for German education has been studied in order to introduce efficient systems in the educational process.
«The Big Psychological Game (BPG) in working with learners and teachers: developing improving, diagnostic and projecting game opportunities»	20 people	This training expanded participants' professional insight about the opportunities and limitations of the Game Method in psychological and pedagogical work, as well as their learning of how to plan the BPG, and development of their reflective skills.

«Emotional intelligence. Gifted Children Support»	40 people	In the course of the training participants have become familiar with classical and modern tools of how to support and develop learners' emotional competency, ways of how to develop positive consciousness and the efficient technique of psychological educational support.
«Inclusive approach to working with gifted children»	40 people	They have studied modern theories and practical differentiation tools when considering individual psychological and physiological make-ups and methods for solving specific psychological and behavioral problems.
«Assessment Center»	56 people	Training course participants have studied the method of comprehensive personnel appraisal based on modelling the key insights of the employees to identify the level of their professionally relevant skills. As a result we have developed a plan of comprehensive personnel training on rendering the psychological service.
«No Stress at School: integrative kinesiology in the educational practice»	53 people	Course participants have become aware of systems of different methods, exercises and techniques which can be used to effect the physiological, emotional and spiritual levels that leads to the increase of mental and spiritual well-being and harmony in the learner's personality.
Leadership Program		
«Professional Development for Managers of NIS branches»	17 people	The managers of Intellectual Schools have been introduced the important leadership knowledge and skills that are necessary for efficient personnel management, their coordination in achieving the objectives and making decisions, as well as their controls and analysis in terms of changes delivered to education.
Monitoring of linguistic and ICT competency of the pedagogical staff		
Linguistic and ICT Competency Assessment Test ICT Kaztest APTIS	325 people 333 people 344 people	Regular monitoring of teachers' linguistic and ICT competency based on recognized external assessment
Professional development courses with the participation of CIE		
Professional development course on the theory how to develop the educational program	27 people	Course participants have learnt to set clear objectives to develop the educational program and its' basic terms and principles. This course will be useful for further development, introduction and assessment of the quality of the NIS AOE educational program.

Professional development course for practical work in Science	151 people	Participants have understood the theoretical prerequisites for practical work in Science, and the problems and difficulties in practical work; they have learnt to observe safety procedures while doing practical work and to correctly plan the experiments. This Course will be useful for practical experiments and further scientific research.
Professional development course on the advanced project management	25 people	Course participants have gained a thorough understanding of quality control, human resources management and risk management; they can apply this knowledge and skills in practice in project management when developing, introducing and monitoring the educational program and related documents. This course will be useful for managers of different projects in NIS to assess the quality, manage human resources and risks.
Professional development course on planning principles and efficient learning	25 people	Course participants have been introduced to development principles and efficient learning applying strategies of active learning. This course will be useful for the CPM specialists when planning and holding efficient professional development courses and workshops; when applying strategies of active learning; and supporting assessment in NIS through efficient teachers training.
Professional development course on allocation of marks and points	3362 people	Course participants have been supported when assessing, moderating and allocating marks during the assessment of examination papers for Grades 10 and 12. This course is useful for building the capacity of teachers to bring the assessment procedures and instructions up to standards and follow them.
Professional development course on formative assessment integration with learning	643 people	Course participants have gained clear understanding of "good" formative assessment practice and become confident in giving feedback to learners. This course will help teachers introduce course plans and integrate formative assessment with the learning process.
Professional development course for primary school teachers	47 people	Course participants have understood generally recognized STEM principles, gained practical experience in using STEM for primary school learners, and are ready to confidently introduce inter-subject themes.

Table. Areas and names of professional development courses for the pedagogical staff of Nazarbayev Intellectual Schools within the country and abroad

№	Наименование программы/курса обучения	Кол-во
1	*Giftedness program trainers, Johns Hopkins University*	43 people
2	*Assessment experts for Giftedness program, NIS Centre of Pedagogical Measurements*	9 people
3	*Trainers for level-based COE training programs, NIS Centre of Excellence*	57 people
4	*Assessment experts for level-based COE training programs, NIS Centre of Excellence*	10 people
5	*Introduction to Robotics program trainers, Nazarbayev University*	9 people
6	*Critical thinking trainers, Cambridge International Certificate for Teachers and Trainers*	21 people
7	*Teaching Knowledge Test trainers, TKT*	7 people
8	*Distributed Leadership programme trainers, University of Pennsylvania*	3 people
9	*Trainers and test developers, Cito Centre of Pedagogical Measurement*	62 people
10	*PISA trainers, Pearson*	24 people
11	Microsoft trainers, Microsoft company	11 people
12	*Language competencies trainers (four skills), NIS Centre of Excellence*	21 people
13	*Robotics programme trainers, NIS Centre of Excellence*	49 people
14	*CELTA certificate holders, Cambridge English Language Assessment*	13 people
15	*DELTA certificate holders Cambridge English Language Assessment*	19 people
16	*CLIL trainers, Docetis International*	3 people
17	*Trainer for Educational Renewal in Kazakhstan, NIS Centre of Excellence*	47 people
18	*International Baccalaureate trainers, International Baccalaureate Organisation*	34 people
19	*International Baccalaureate trainers, International Baccalaureate Organisation*	12 people
	Total number of trainers:	**454 people**

Table. The list of publications about Nazarbayev Intellectual Schools in English

Scientific publications about Nazarbayev Intellectual Schools (including road maps, and international reports) as well as those where NIS are mentioned	
№	Publication (according to APA)
1.	Ayubayeva, N., Bridges, D., Drummond, M., Fim'yar, O., Kishkentayeva, A., Kulakhmetova, A., et al. (2013). Development of strategic directions for education reforms in Kazakhstan for 2015-2020: Final Report of the Early Years and Secondary School Working Group. Cambridge/Astana: Cambridge University & Nazarbayev University. Retrieved December 5, 2016, from https://www.google.kz/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0ahUKEwiZv_bBtNzQAhUJAZoKHZFKApwQFggjMAE&url=http%3A%2F%2Fnur.nu.edu.kz%2Fbitstream%2Fhandle%2F123456789%2F335%2FDIAGNOSTIC%2520REPORT.pdf&usg=AFQjCNGkbk11BzO5MvuK7flDVsn2bYu1lg&cad=rja
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8.	Kovalchuk, V. (2015). Teaching Staff Advanced Training in Russia, the Republic of Kazakhstan, the USA and Canada. Comparative Professional Pedagogy. 5(4), 16-20. DOI: 10.1515/rpp-2015-0059
9.	Mehisto, P. (2015). 7 KAZAKHSTAN: From Twenty Trilingual Schools. Building Bilingual Education Systems, 109. https://books.google.kz/books?hl=ru&lr=&id=MGPTCQAAQBAJ&oi=fnd&pg=PA109&dq=Nazarbayev+Intellectual+Schools&ots=ETU91fh0gc&sig=3QtrP6o8xNzpwWzwKpqIdGaihWE&redir_esc=y#v=onepage&q=Nazarbayev%20Intellectual%20Schools&f=false
10.	McLaughlin, C., & Ayubayeva, N. (2015). 'It is the research of self experience': feeling the value in action research. Educational Action Research, 23(1), 51-67. http://www.academia.edu/11386420/It_is_the_research_of_self_experience_feeling_the_value_in_action_research

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№	Publication (according to APA)
1	Ramazanova, A., Abisheva, I., & Saltybayeva, Zh. (2016). 2010 Alumni's Perceptions of Nazarbayev Intellectual Schools Impact on Preparedness for University Studies and Careers. Retrieved December 5, 2016, from http://www.eera-ecer.de/ecer-programmes/conference/21/contribution/37426/
2	McHutchon, D., Shilibekova, A., & Mustafina, A. (2016). Nazarbayev Intellectual Schools' Integrated Criteria-Based Assessment Model (ICBAM) as an effective assessment system. Retrieved December 5, 2016, from http://www.eera-ecer.de/ecer-programmes/conference/21/contribution/39178/
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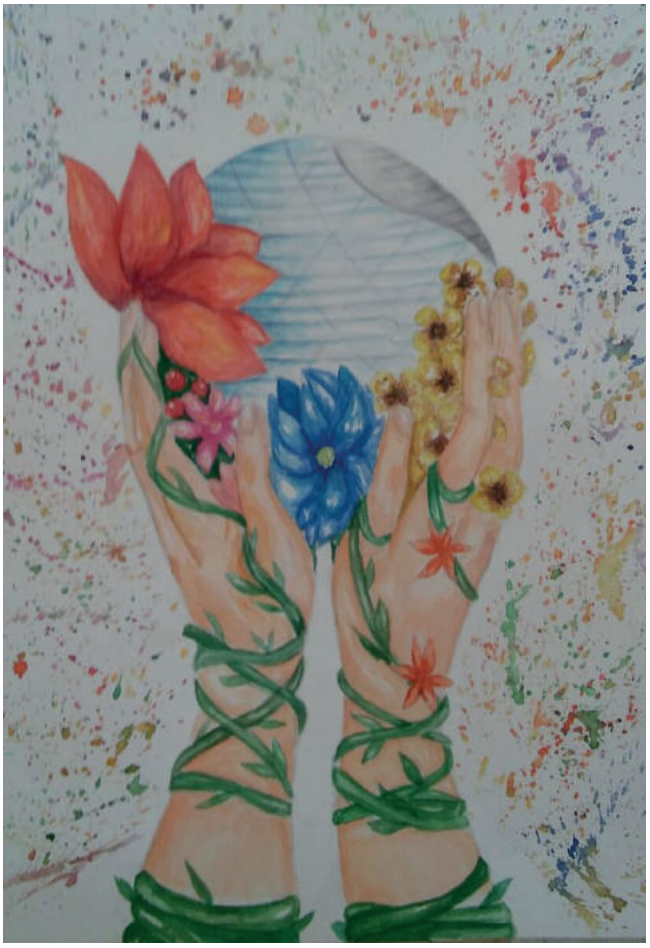
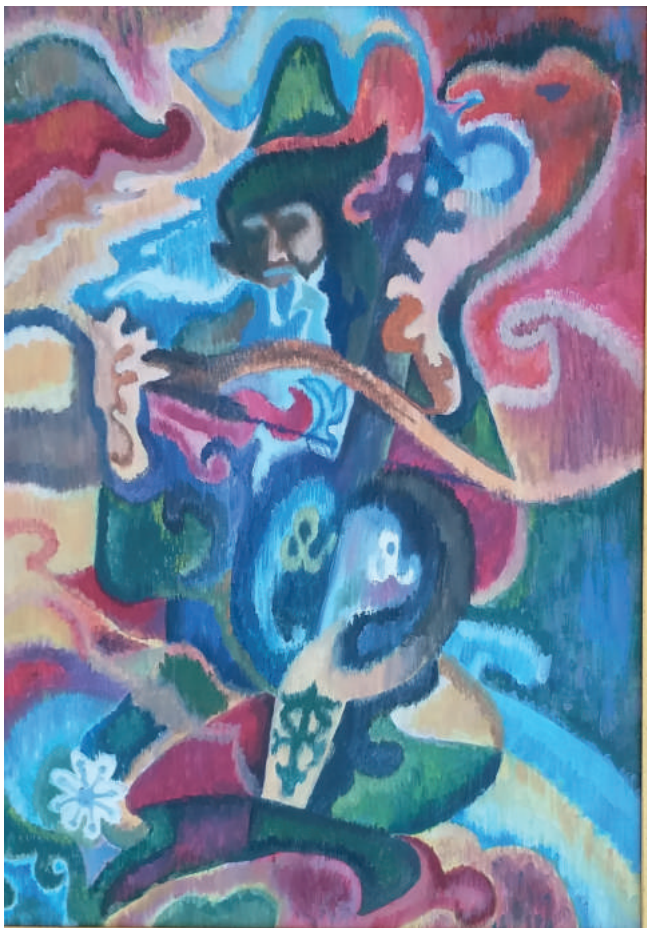
Journalistic articles and stories about Nazarbayev Intellectual Schools in the international Mass Media

№	Publication (according to APA) http://www.sciencedirect.com/science/article/pii/S1877042815021850
1	SCHOOL SHOCK: Australia's education system is slipping backwards, and fast, according to a new global report card https://www.facebook.com/9News/videos/1309187359129098/?hc_ref=NEWSFEED
2	David McHutchon (2016) Global Citizenship's Rich/Poor Paradoxhttps://www.linkedin.com/pulse/global-citizenships-richpoor-paradox-daibhidh-mac-%C3%B9isdein, linkedin
3	David McHutchon (2016) Quit Denigrating Kazakhstan Mathematics https://www.linkedin.com/pulse/quit-denigrating-kazakhstan-mathematics-daibhidh-mac-%C3%B9isdein, linkedin

Notes





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