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JSC “NATIONAL CENTRE FOR INFORMATISATION (NCI)”

REPORT

for the project:
«Expansion of Open and Distance Education delivery in Kazakhstan»

Almaty 2008
The report describes the implementation of UNESCO project "Expansion of Open and Distance Education delivery in Kazakhstan" by the National Center for Informatisation; the aims and objectives of the project are exposed, the needs in the public education resources for the professional development of teachers are analyzed, school security issues on communication link to Internet are considered, summary of the learning courses as well as the recommendation for financial, administrative and legal matters on introduction of open distance education are given.

The author is responsible for choice and presentation of the facts contained in the report, and also for the opinions expressed here which unessentially reflect a position of UNESCO, and do not impose the obligations to the organization.

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FOREWORD

One of UNESCO’s strategic objectives in education is to improve the quality of education by diversifying teaching and learning contents and methods, promoting experimentation and innovation, distributing and sharing good practices, as well as through policy dialogue.

The interdisciplinary project on “The Expansion of Open and Distance Education Delivery in Kazakhstan”, implemented by the National Centre of Informatization in Education (NCI), was designed to contribute to the above-mentioned objectives.

Designing and implementing efficient and effective tools using information and communication technologies (ICTs) and ICT-enabled teacher training programmes is central to educational reforms.

Some practical solutions to the increasing challenges in the educational environment in Kazakhstan are suggested in the present report.

The educators involved in the project have produced fifteen ICT based open education resource modules/ training courses for teacher training purposes. The content production was led by the NCIE, in collaboration with the Teacher Training Institute (RIPKSO). The materials are posted on the NCI website, http://moodle.nci.kz.

The materials can be downloaded for offline use, for use through local networks in the computer classes or used directly through internet. More than 300 teachers have been trained in the use of these materials. The goal is to give access to the materials for every rural teacher, who can then adjust them for their individual needs, taking into account the context where they will be used. New courses will be developed after all trainings to be posted on the NCI website for further access and maintenance.

Tarja Virtanen,
Head of UNESCO Almaty Cluster Office
INTRODUCTION

Information and communication technologies (ICT) play an important part in education requirements of advanced technology economy. According to the Strategy about Kazakhstan's aim of becoming the 50–most competitive countries in the world the Republic of Kazakhstan is known to be on the threshold of a new stage of development. More importantly, President of Kazakhstan N.A.NAZARBAEV has set a problem of developing more modern education system to support its growing economic and public modernization needs that would then be capable of sustaining the growth of human capital, innovation and competitiveness. This system will definitely ensure the future competitiveness of Kazakhstan among the leading countries.

The project "Expansion of Open and Distance Education delivery in Kazakhstan" implemented by NCI under UNESCO Almaty cluster office is head for improvement of the secondary education quality through information and communication technologies (ICT); creation and development of an education and information environment that ensure a single educational landscape throughout the country as well as improvement the education quality and teacher competence by up-to-date ICTs; support the teachers to attain their goals under the information society.

The project is an extended plan of UNESCO IITE and NCI "Distance education for rural schools of the Republic of Kazakhstan" started to work in 2002. Distance learning allows to implement a basic principle of the state education policy and ensure its availability for all population regardless of their geographically location.

A feature of this project is the possibility to create professional association of teachers, who jointly create open distance courses. Due to laptop flash UNESCO server, which allows any teacher regardless of their location it’s possible to develop their own learning materials to share with colleagues, to enrich and display for on–line server of NCI.

The main NCI project objectives are:
– creation of learning materials for open distance learning (ODL) jointly with UNESCO open access offline server;
– purchase of flash medium and distribution of learning courses;
– conducting the training courses for trainers of RIPKSO to use and create ODL courses (offline);
– distribution of learning courses for ODL at the portal “Moodle”.

Project program "Expansion of Open and Distance Education delivery in Kazakhstan" is based on the state program for the development of education in the Republic of Kazakhstan to 2005–2010, Law of the Republic of Kazakhstan "On education".

The project was carried out as part of the general strategy of NCI, that put much effort for development of Kazakhstan digital multimedia industry, digital interactive multimedia educational resources (DIMER) as a breakthrough of scientific and
technological projects that provide quality formation of an unified educational and communicatively–learning environment.

The project is implemented by support of the Ministry of Education and Science of Kazakhstan, JSC "Scientific and Technological Holding “Samgau”, NGO “Bilim” etc.

We would like to acknowledge the director of the Teacher Training Institute (RIPKSO) Tursynbek Moldahanovich Baymoldaev and deputy director for scientific and methodical effort Alexander Alexandrovich Semchenko for conducting the training courses within the framework "Expansion of Open and Distance Education delivery in Kazakhstan”.

We express our appreciation to the representative of UNESCO Almaty cluster office for Kazakhstan, Kyrgyzstan and Tajikistan Tarja Virtanen for support in development of ICT in Education, as well as UNESCO cluster bureau specialist Sergei Karpov for communication and information.
DEMAND FOR ODL CONTENT
TO DEVELOP THE PROFESSIONAL TEACHERS

Due to Kazakhstan’s vast territory and its scientific and technological centres located in the major cities there is sharp necessity in distance learning. There are about 8000 schools in Kazakhstan and more than 6000 schools (77.3%) are rural and part of them located at the remote villages. The rural schools have the special status: traditionally rural schools were considered not only as an education institution, but also as a social and cultural site of culture, national and regional traditions in the countryside. However, in remote rural schools trend of flow-out and the lack of teachers, poor school security with methodical learning resources, insufficient school students’ and teachers’ information culture, defining the path to self–knowledge, in terms of information society on the basis of modern ICT.

The social significance of introduction ICT in education is to liquidate information inequality. The introduction ICT in education allows the students to get an equal knowledge regardless of their geographical location of schools and teachers’ qualification.

In 2007, more than 7458 schools (96.31%) connected to the Internet, including 5706 rural schools (95.37%). 100% Schools of Almaty, Astana, North Kazakhstan, Karaganda and Pavlodar regions are connected to the Internet. Currently, the Internet is also connected to 98% of schools Atyrau, Eastern Kazakhstan, Western Kazakhstan, Kostanay areas, 96.5% of schools Akmola and Almaty areas 95.55% Aktobe region, 94% Kyzylodinskoy areas in 90% of schools South Kazakhstan and Mangistau areas, 87% of schools Zhambyl region.

At the same time there are a number of problems with the distribution open distance education via the Internet.

Above all the development of communication link that provides connectivity to the Internet is still a crucial issue. Small rural schools are connected to the Internet by analog exchanges. The outdated analog exchanges provide very slow traffic about 15–30 Kbits/sec, which prejudice the Internet efficiency at school.

In some countryside it’s not possible to provide rural schools with an e–mail without telephone communication (6% of rural schools).

The less number of individual work place is connected to the Internet; generally 1 computer in the computer class or directors’ room at rural schools is connected to a global network.

There are the difficulties with the local network and server support in rural schools, and a system administrator and regular electrical power are required as well as a skilled specialist for the server installation of special software.

The issue of maintenance the schools with printed learning materials updates the importance of developing ODL content.

Moreover the issue of training the high qualified teachers within the framework of informatisation in education is still important. Today's teacher should have
computer literacy: to work with the applied software and Internet; realize pedagogical opportunities of digital educational resources; should be able to use the digital educational resources in multimedia linguaphone classes, with interactive boards etc.; and the main thing for the up-to-date teacher is to reconstruct the lesson action within the modern ICT.

One of the important solutions of these issues is to create and distribute open Flash-Web server based on UNESCO AMPMG server.

AMPMG–Flash server is a set of portable programs implementing web technology in offline mode (not connected to the Internet):

- A – Apache Web Server
- M – Database Management System MySQL
- P – Generation Language web pages PHP
- M – Distance Learning System MOODLE
- G – Greenstone Digital Library

In addition, a flash–server includes a set of portable programs working directly with flash, that not require special installation:

- PortableFirefox – Web Page Browser;
- PortableAbiWord – Word processor compatible with MSWord;
- PortableGimp – Graphics Editor;
- Audacity – Sound Editor;
- Claim – Antivirus;
- FoxitReader – PDF files;
- PortableDeepBurner – Burning a CD and DVD disks, the creation of auto lunch and stickers;
- XnView – Multimedia Collections View.

Figure 1. AMPMG–flash–server
An idea to create AMPMG server is belong to Communication and Information Department of UNESCO Almaty cluster office within the framework “Development of Free Software in Central Asia”.

“e-Knowledge” UNESCO version was used in the beginning of the project. During the project its title had been changed to the version “e-Learning”, which reflects more precisely the meaning of ODE process than notion of “knowledge”.

This flash server is designed for teachers to create their own education content and use more than 30 teaching methods based on modern ICT; allows to select individual learning paths for students: is a set of digital library and software for test, graphics, sound, supports all modern multimedia formats can record CD and DVD drives, has updated antivirus.

A feature of this software is that flash server can copy and distribute legitimately because it includes a set of open source software.

Accordingly the project "Expansion of Open and Distance Education delivery in Kazakhstan” is well-timed and aimed to provide rural schools teachers and students with ODL content.

Server AMPMG was made by Communication and Information Department of UNESCO Almaty cluster office, within the framework "The Development of Free Software in Central Asia".

Teacher training to use, modify and improve ODL content is an important factor of informatisation in education. Demand for teacher training at various levels to use opportunities of MOODLE technology and UNESCO Flash Server requires holding the workshops and trainings, as well as the development of teaching materials.

This is a big step to teacher training for preparation the specialists with the purpose to introduce the open distance learning in education and UNESCO strategy for introducing distance education in remote rural schools of the Republic of Kazakhstan.

In October 15–16, 2007 the workshop "Basic Skills to Create Network Education Materials for Open Distance Education" for the republican trainers took place at the National Centre for Informatisation accordingly to the workshop programme (Annex 1–2).

The main idea of the seminar is an integration of education and information-communication technologies through cooperation of the following education institutions: National Center for Informatisation (NCI) and the Republican Teacher Training Institute (RIPKSO).

The purpose of the seminar was to develop content of OER on the basis of joint creative work and free software; train the skills to create and publish DE network.

About 6 specialists of RIPKSO participated in the workshop (Annex 3). The participants faced to the requirements below:

a) the basic ICT skills: copying, archive files, registration on the site;
b) to use the application Word;
c) to use the Internet browser;
d) the basic graphics editor skills;
e) to have the own user name, password and e–mail.

The short lectures, presentations, group tasks and guided tours for real jobs had been widely used at the workshop as well as the discussion and practical training. The equipment such as the workstations, flash media projector, interactive whiteboard, the server on–line, etc. were used. The methodical manual for DE network and direction to launch of flash server developed by the NCI specialists were used as manuals.

![Figure 2. During seminar “Basic skills of creation the network learning materials for ODL”](image)

The following issues had been discussed at the seminar:

1. Philosophy MOODLE. The main course elements in LMS MOODLE.
2. Review of content within the framework of UNESCO.
3. Features of LMS MOODLE as distance learning courses and remote control system educational process.
4. Work with users (access levels; user authorization, the creation of groups).
5. The methodological and technical bases with resources.
6. The methodological and technical base work with the course elements (activities, tests, questionnaires, schedule, forum and chat)
7. Presentation of the interface system.
8. The methodological and technical bases with the navigation panel.
9. The methodological and practical tips for creating Web texts, HTML syntax basis.
The seminar outcome was the addition to DE content new modules; the forums and chats were tested as new social teaching methods as well as test courses and modules had been developed.

FEEDBACK FROM RIPKSO TRAINERS

Monitoring and evaluation of the training effectiveness were being undertaken by specialist of UNESCO Almaty cluster office Sergei Karpov participated in training as well as by conducting pre–tests and post–tests with the participants of the seminar, evaluation of the seminar (Application 4).

The results of questioning confirm that seminar participants had learned the creation and editing of training courses on MOODLE technology using UNESCO flash server.

The seminar–training was highly appreciated by the participants. As the most positive point of view is an individual approach, work with the server, creating courses and the creation of tests, professionalism and lecturer’s methods of teaching and counselling.

According to the candidate of pedagogical sciences, professor of the department of RIPKSO "The Content and Education Quality", the author of school-book for Mathematics Kainbaev Zhanbolat Tursyngozhaevich noted that during seminar he fully realized the need for computer in education and distance learning. He will use new skills to train the mathematics teachers in the future.

Amangul Shakarbekovna Orakova, Senior lecturer of RIPKSO, reported: "Now we can better represent our future training for IPK instructors, it is necessary to
expand its program by creating learning materials for the development of DE training modules on specific subjects. We would like to work with IPK instructors to create individual portfolio with texts, drawings and academic tests to use these materials for creating their own DE content".

On completion the training seminar participants will be able to create and modify training courses on school subjects using MOODLE technology, as well as clearly and competently provide meaningful line for refresher training educators in the open distance education.

Due to this training the participants have gained the skills to create and modify training courses on MOODLE technology using UNESCO flash server, and the skills of creating community online.

The certificates of training course and flash drive with software as well as learning courses are given to all participants. 1 flash drive has been sent to UNESCO Cluster office.

Upon completion the course participants have learned to create and modify the courses on MOODLE technology (lecture, quizzes, assignments, exercises, questionnaire, forum, chat) using UNESCO Flash server, as well as train RIPKSO instructors.

The training provided an opportunity to train 32 people from the regional training institutions based on RIPKSO.

The seminar-training "Distance education for rural schools in Kazakhstan" was held at the Republican Teacher Training Institute in November 18–20, 2007. The methodologists from the regional teacher training institutes took part in the workshop.
An important part of the seminar outcome for participants is to train 360 methodologists from 16 regions of Kazakhstan including rural teachers to create the own ODL content.

**RECOMMENDATIONS ON FINANCIAL, ADMINISTRATIVE AND LEGAL ASPECTS OF ODL DELIVERY**

Due to the work carried out within the framework of the project and the NCI experience for informatisation in education it’s possible to draw conclusions and recommendations.

**On financial aspect:**

It is necessary to address RBK RK the suggestion of scaling the project "Expansion of Open and Distance Education delivery in Kazakhstan" to all schools of the republic and provide all teachers with UNESCO flash servers.

Taking into account that there are about 300 thousands teachers in the Republic of Kazakhstan, and the cost of flesh server preparation including training of one teacher is 35 thousands tenge (without the cost of learning course design), the project will need about 9,5 billion tenge.

**On administrative aspect:**

An additional unit staff “ICT Coordinator” within the development of informatisation in education based on ICT and need the teachers consultation to use ODL content will raise efficiency management for application of ICT and facilitate informatics teacher’s additional no-charge work.

2. It is necessary to reconsider the program of future teacher preparation in the secondary and higher vocational education to introduce into curriculum the specialized courses on methodology and ODE technology on the basis of ICT, into the qualifier of specialities applicate the speciality as ODL tutor and develop the special program of their preparation.

3. It is necessary to develop effective techniques for adults training in open distance, to include such preparation in plans of teacher training institutes. It needs to distribute an advanced pedagogical experience on introduction of ICT and use of ODL content in education.

**RECOMMENDATIONS ON AMENDMENTS TO LEGAL ACTS**

A number of the legal documents regulating the activity of distance learning in education institutions have been confirmed in Kazakhstan:

1. Rule of the education organization for distance education giving higher professional education, additional vocational education of the RK approved by MES RK Decrees №404 July 19, 2006 registered at the Ministry of Justice RK in August 16, 2006 №4348;
2. Distance learning hardware and software. General technical requirements (ST RK 34.016-2004, the Committee Order on Standardization, Metrology and Certification of the Ministry of Industry and Trade of the RK July 10, 2004).

At the same time, there is a necessity of amendments to the legal base of ICT introduction into education, including the implementation of continuous preparation of experts within the open distance learning; development of digital educational resources; creation of the single information and education environment. There are such documents as:

- the Concept of open distance education in continuous training of experts in the RK
- the Program of implementation of the continuous training of experts within the open distance education in the RK
- the Plan of measures of continuous preparation the continuous preparation of experts within the open distance education in the RK
- the Standard of development of a portal of open education in the RK
- the Instruction on filling components of a portal
- the Instruction on implementation of examination of a portal
- the Instruction on implementation of approbation of a portal
- the Instruction of work of the system manager of a portal
- the Instruction of work of the organizer of a portal
- the Instruction on the organization of tutor’s work, normalization and payment of their work in distance learning system.
- License specifications of accreditation parameters and procedure of an estimation of experts training quality in open lifelong learning etc.

Update of the concepts connected with informatisation in education, should be done regularly once in 3 years. It is related with pace of development of the modern computer and telecommunication industry which educational opportunities should be constantly analyzed and introduced to educational process to improve their quality. Improvement of the legal base should be carried out systematically and objectively in compliance with the current legislation of the Republic of Kazakhstan.

Kazakhstan legislation should contain the articles that promote effective functioning of ODL system. One of the basic moments in this connection is the official recognition and, hence, legalization by the state of ODL system.

As a rule, in education institutions there is no internal policy in the field of creation of educational resources based on ICT.

**EXPERIENCES ON OER CONTENT DEVELOPMENT**

There are 10 learning courses had been developed within the framework of the project that include:

- Geography* (5 grade),

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* Accordingly to the government obligatory standards of basic secondary education in the RK 5 grade pupils study the subject «Natural science» instead of «Geography».
- Algebra (7 grade),
- Geometry (7 grade),
- Algebra (8 grade),
- Geometry (8 grade),
- Physics (8 grade),
- Chemistry (9 grade),
- Kazakh Language (9 grade),
- Russian Language (9 grade),
- English Language (9 grade).

ODL content for History of Kazakhstan, Algebra and Biology 9 grade had been updated.

For this work were brought experienced teachers, higher category teachers, and Ph.D. and candidates of pedagogical sciences, teachers of pedagogical universities, etc.

Contents of all subjects includes at least three methods of distance education, in particular: a) thematic lectures; b) tests at the end of each lecture; c) to consolidate job training material; d) generated by the final test.

Subject lectures briefly and laconically expound the essence of program material.

The self-testing after each subject helps to determine the extent of absorption of the material and identify gaps in knowledge. For each subject there is interactive quiz of 10 questions with the multiple choice answer. Students send their answer and can immediately verify its right. After testing a pupil can obtain a detailed protocol respond.

There are links to literature and the recommended learning program.

Course "Natural science 5 grade" (Author: Ableeva A.) dedicated to the main theme of this class: "Earth is the planet of solar system." This course is designed for those who love nature and rush to preserve through knowledge for future generations. Also who rush to discover interesting things and processes in the world around us.

The unique feature of this course is that students can not only receive information and do the tasks that enhance their knowledge, but also to set interest on the subject matters.

Teachers-educators involved in our courses will be able to send their teaching methodology and the individual topics to discuss the method of presentation of a matter of course "Natural science", offer their solutions to the issues of teaching. This experience will certainly enrich the education of pupils middle managers.

The courses are based on the school curriculum subject "natural science" for fifth grade. Design includes separate modules relevant to large sections of the school curriculum, classes and topics, including:

**Sun-star**
- The starry sky
- The star systems
- Sun
The sun system
Space exploration
The moon

Earth-planet
The shape and size of the earth
The Image of the earth on globes and maps
Rotation of the earth around of an axis. Movement of the earth around of the sun
Studying of the earth by the man
The geographical environment
The internal structure of globe
Rocks
Ground
The Water environment of the ground
Protection of waters
The atmosphere
Weather and a climate
Biosphere of the ground

To control knowledge at the end of each subject, there are activities, and tests and assignments after each module throughout the module. For the 5 grade pupils activities are presented in the form of an interesting game (riddles, rebus, etc.) For curious in each topic, there is heading: "It is interesting to know."

Figure 5. Fragment of ODL course “Natural science 5 grade”
“Algebra 7 grade” (authors: B. Kadyrov, K. Tuenbaeva) is intended to synthesize and consolidation of knowledge on repeat Algebra for 8 grade. It includes the following topics:

**Integral expression with actions**
- Degree with natural indicator
- Monomial
- Properties and the schedule function \( y=ax^2 \)
- Properties and schedule functions Resources

**Polynomial**
- Polynomial
- Actions with polynomials
- Formula of short multiplication
- Polynomial division to monomial and polynomial
- Decomposition of polynomial to factorizations

**Algebraic fractions**
- Algebraic fractions
- Actions with algebraic fractions
- Degree with a measure
- The function \( y = k/x \), and the timetable for its properties
- Approximate values
- A feature of this course is that each topic included in the sample solution examples

"Geometry 7 grade " (authors: S.E. Chaklikova, doctor of pedagogical sciences, professor, N. Zhandybaeva) includes the following topics:

**Basic concepts of planimetry**
- Basic concepts of planimetry
- Points and directs
- Segment and its length

**Angles**
- The beam and angle
- Equality of geometric figures and equal angles
- Measurement of angles
- Related and vertical angles

**Parallelism and direct perpendicularity**
- Perpendicular lines
- Direct Parallel
- Direct parallel properties
- Theorems and axioms

**Triangles**
- Triangle and its elements
- Angles of a triangle
- Signs of triangles equality
- Isosceles triangle
- The relationships between the sides and angles of the triangle
- The third sign of equality triangles

**Circle**
- Circle and its elements
- Diameter perpendicular to saving
- Circle described around the triangle
- Circle inscribed in the triangle

**Construction problem**
- Geometric points place
- Construction angle equal to this
- Construction angle bisector
- Construction direct perpendicular
- Construction middle segment
- Construction a direct parallel
- About construction problem
- Construction of the triangle on the three elements

Independent unit devoted to the tasks of the entire course.

"**Algebra 8 grade**" (authors: B. Kadyrov, K. Tuenbaeva) is intended to synthesize, and the consolidation of knowledge on replay Algebra class for 8 grade. It includes the following topics:

**Arithmetical root**
- Arithmetical root
- Real numbers
- An arithmetic square root
- The use of the properties of arithmetic square root

**Square equation**
- The roots of quadratic equation. Decision of quadratic equation.
- Decision of quadratic equations by allocating binomial square
- Formula roots of quadratic equation
- Properties of quadratic equation roots
- Square trinomial

**Quadratic function**
- Quadratic function
- Function graph

“**Geometry 8 grade**” (authors: S.E. Chaklikova, doctor of pedagogical sciences, professor, N. Zhandybaeva) includes the following topics:

**Square**
- General properties of squares
- Parallelogram
- Rectangle
- Rhombus
- Square
- Fales theorem
- Generalized Fales theorem
- Median of triangle
- The remarkable points of triangle
- Trapezoid
- Median of trapezoid

**Pythagorean theorem**
- Sinus, cosine and tangent of the acute angle
- Pythagorean Theorem
- Coordinate method. Distances between points
- Triangle Inequality
- Sinus values, cosine and tangent of angles to 30°, 45° and 60°

**Square area**
- The concept of space
- Rectangle area
- Triangle area
- Heron Resource Formula
- Parallelogram area
- Trapezoid area

"Physics 8 grade" developed by physics teacher M.M. Muhametov, school № 23, Kostanai city.

At present the course includes the theme "Internal energy." In succeeding the course will be expanded.
In addition to theoretical material the course provides the activities and examples of their solutions as well as tests for each topic and final test.

"Chemistry 8 grade" (author: I. Nesterenko) includes topics such as:
- Basic chemical concepts
- Substances and their properties
- Simple and complex substances
- The physical and chemical phenomena

"English language 9 grade" (author: the department head of Foreign languages, "Kainar” university associate professor) consists from the content with the introduction to the lexical theme of "Health Rules", provides a dictionary, activity including:
- Activities: Give names to the passages
Activities: Read the text and complete the sentences
Activities: Answer the questions
Test

"Kazakh language 9 grade" (author: K.I. Sarieva, the doctor of pedagogical sciences, senior lecturer) is for pupils of Russian teaching schools and is aimed to intensification of learning the language, vocabulary acquisition of Kazakh words and developing the skills to use the grammatical constructions etc. The course includes theoretical and practical parts. Each topic of theoretical part is accompanied with activities.

The practical part includes work on the dialogue, verification and test.

"Russian language 9 grade" (author E.Maschenskih) includes the introduction to themes:

Composite sentence
- Composite sentence structure determination
- Composite sentence with the various types of bonds
- General classification of composite sentences

Complex sentence
- The definition of general secondary part of a sentence in complex sentence
- Difference of complex sentence from the simple sentence with uniform part
- Each topic has practical exercises to perfect the syntactic structures.

The content of OER on History 9 grade (author: E.G. Zoi higher category teacher, school №165, Almaty) covers the period of History Kazakhstan in the twentieth century. The first part "Kazakhstan during the First World War and the revolts in 1916" is devoted to history of Kazakhstan in the years of the First World War.
- Kazakhstan during the First World War and the revolts in 1916
- National liberation movement in 1916
- Kazakhstan during the February and October Revolution in 1917

The second part "Kazakhstan in the early years of a totalitarian regime" is devoted to the beginning of the establishment of a totalitarian system in the country:
- The establishment of Soviet authority in Kazakhstan
- Kazakhstan in the years of civil war and foreign military intervention. KAUSR Education
- Kazakhstan Chronicle

The third part “Kazakhstan in Soviet members (1921-1991),” dedicated to seventy-year history of Kazakhstan was contained in the Soviet Union.
- Kazakhstan in the years of NEP (1921-1926)
- Socialism Construction Plan
- Kazakhstan during the Great Patriotic War (1941-1945)
- The cultural construction in Kazakhstan (1920-1945)
- Kazakhstan in the post-war period (1946-1960)
- Chronicle Kazakhstan
- Kazakhstan in 70-80s
- The cultural life of Kazakhstan (1946-1985)
- Kazakhstan in the years of reorganization (1986-1991)
- The fourth part is devoted to the history of independent Kazakhstan:
  - Heading toward Independence
  - Social and political development of independent Kazakhstan
  - The cultural and spiritual life of the country

A feature of this course is to update the perception of history and different historical periods of pupils through the activities "Chronicle of My Family", "History of My Life", etc. Examples of such assignments:

"Perhaps somebody from your family, grandfather or grandmother, in the past, experienced or knew from their parents about these times. Write briefly exposition how Kazakhs lived at the time. The information should include one or two paragraphs and no more than one printed sheet.

How to perform this task?
Open the file in Word on your personal computer and write some story from your relatives. Then go to the course exercise and attach an answer. The file name should be written in English letters, for example zdn_tema1".

The course also offers pupils to participate in a forum where they can ask questions on topics that are difficult for self-study.

Training courses for secondary education had been developed in compliance with the requirements of the government standards for basic secondary education and the school curricula approved by the Ministry of Education and Science of Kazakhstan.

**THE DESCRIPTION OF ODL NETWORK**

All developed open education resources are publicized at the distance education Portal «Modular Object Oriented Digital Learning Environment (MOODLE) » [http://moodle.nci.kz//](http://moodle.nci.kz//)

This Portal functions since the beginning of 2006; it is attached to RCIE (NCI) in the framework of the “Distance education with information-communication technologies usage for back lands and vulnerable regions secondary schools” UNESCO project and directed to education quality perfection.

MOODLE is the open program package created for effective distance education. This system has GPL international license (General Public License), which allows replicating, duplicating and distributing that material.

The MOODLE project was started by Martin Dougiamas (Australia) in August, 2002 and originally was directed to teachers. Now MOODLE has a big and various association with more than 100000 registered users on that site, more than in 70 languages and in more than 150 countries.
The MOODLE can be compared with famous commercial LMS, at the same time it favorably differs by distribution in open source, this let reconstruct the system to features of specific education project, and in case of need to build in a new elements.

The MOODLE is established on the Open Source, Apache; PHP web-platforms; SUBD MySQL.

Designing and developing of the MOODLE learning courses follows by special education philosophy, way of thinking, which determine can be dedicated as “Pedagogic of social constructivism”.

The users of MOODLE portal can register and get free access to education materials on school subjects, perform tasks, pass the tests and get methodical help.

MOODLE lets organize study in the joint process of tasks resolution of studies, accomplish interchange of knowledge. One of strong feature of MOODLE is the broad opportunity for communication. The system supports file exchanges of all formats, among teacher and pupil, also among pupils or among teachers.

Figure 6. Distance education portal MOODLE http://moodle.nci.kz/
The portal main menu lets move to news, advertisement, main projects, chat and forum. There is RSS-news feature on the portal. The basic portal categories are:

- General secondary education
- Get ready to United National Test
- Information space for students of basic level
- Festival of the high-developed experiences
- Educational Ideas Festival
- Collection of teacher’s articles

The materials of the «general secondary education» category are prepared under education program of secondary schools and contain 13 subjects. With each course works tutors. All courses are divided into themes; each theme contains short lecture, tasks, tests and discussions, forum.

Distribution service allows quickly inform all course users or separate groups about current events.

The “Dialog” and “Comment” services intends for individual communication between teacher and pupil. It means work reviews, discussion of individual study problems. The control tools of that study course are the constant connection (as the problems become available) with tutors (e-mail and telephone was given) and forums.

The Forum gives the possibility to organize training discussion of problems, at the same time discussions might be conducted among groups. Any format files can be attached to forum messages.

The “Teacher’s forum” (it is an analogue of teacher’s room in traditional school) allows teachers to discuss professional problems. There is a function of appraisal report both by teachers and pupils. Chat allows organize educational discussion of problems on-line and hold a meeting.

“Get ready to United National Test” category intends for pupils training level increase to pass United National Test. Short lectures which are contained in that category include most of test questions. There are several variant of test tasks in that category; using which everybody can check preparation level for United National Test.
«Information space for students of basic level» category consists of three parts: «For teachers», «Advice to parents» and «Student’s section». The section «For teachers» contains materials of finished scripts of celebrations, open lessons, Teachers’ forums. Trained teachers can get opinions of educational specialists of Almaty or resource centers by off-line/on-line while preparing subject contents for MOODLE.

Taking into account the necessity in virtual contact among colleagues as well as with the purpose of progressive experience distribution new heading “Educational Ideas Festival” was entered to practice. All Kazakhstan teachers can show its methodical workings and share using experience of information-commercial technologies usage in educational process. This can be considered as condition of constant professional self-perfection of teachers. Any pupil of these schools may get to know them working, pass tests, and get an advice from educational specialists of Almaty or resource centers.

School’s teachers also can get an opinion by off-line/on-line while preparing subject contents for MOODLE.

Based on users’ opinions there is User’s Guide on Russian language on the site. At that moment approximately 800 users are registered on MOODLE NCI republic portal; not only from Kazakhstan, Belarus, Uzbekistan, Tadzhikistan, Kyrgyzstan, and Russia also.

There are such user’s categories as teachers, students, parents and university entrants and etc. The most active users are East-Kazakhstan region, Kostanay and Almaty’s schools. Certainly, it is not much on a republic scale, which says about necessity of popularization and teachers qualification level increase.

Also open educational recourses developed by NCI are available on «e-Learning» flash-server. Within the bounds of this project, NCI with a help of UNESCO bought and wrote 107 pieces of flash-servers, which contain AMPMG and MOODLE software.

**SUMMARY: ODL ASSESSMENT/EVALUATION/BEST PRACTICES/PROBLEMS SUMMARIZED**

During problems solving, there are following results achieved:

1. Educational courses of Physic (8th form), Chemistry (8th form), Algebra (7th form), Algebra (8th form), Geometry (7th form), Geometry (8th form), Natural science (5th form), Kazakh language (9th form), Russian language (9th form) and English language (9th form) were developed.

2. Flash-servers open off-line access were bought and written (107 pieces of flash USB-devices, 2.0 class, 1 Gb, 11 Mb/sec reading speed, 8 Mb/sec writing speed).

3. Users Guide of MOODLE for RIPKSO trainers and “Flash-server start Guide” were developed (Word format).
4. There were conduct “Basic knowledge of network educational materials creation” training courses for RIPKSO trainers.

5. The level of the trainers’ and teachers’ professional and information competence have been raised in using ICT, development of learning materials for education portals.

6. The first step to promote the introduction of open distance education in Republic of Kazakhstan had been made.

7. After receiving UNESCO flash server teachers have an opportunity to create new courses on this server; as well as the documents, presentations, video and audiomaterials, modify available courses on MOODLE, check documents with the help of the anti-virus program.

   However it is necessary to notice the following: as the preparation of flash server with necessary software is very much labour-intensive process and requires participation of high skilled experts. The peculiarity of the preparation is the complete database transfer to flash server and control system of MySQL databases. It needs special time to adjust and record other software. After the completion of preparation each recorded flash server is tested to serviceability.

   Thus not each expert may adjust the flash server. Besides, during the work it had been found out that it is impossible to transfer the software from one flash-carrier to the other by simple copying process.

   During development of learning courses the problem of teachers’ computer literacy had been revealed. Indicator of teacher readiness to use ICT in education is also low in Kazakhstan, as objective preconditions (computerization, school internetization and development of digital education resources) to its formation in the mass plan have been developed only for the last 5-6 years.

   Some of them possess an extensive knowledge in the subject, own a technique of teaching, are experts of the maximum category, but haven’t thus elementary skills of work on the Internet, not able to use e-mail. Thus, preparation of tutors also demands special attention and time. Inexperience of a greater part of teacher’s low activity of users in work of forums and chats speaks also.

   Thus, the project "Strengthening of delivery opened distant formations in Kazakhstan" is actual for Kazakhstan where for today the powerful infrastructure of information formation (presence of computer park at schools, connection to the Internet of the organizations formation is created), but remains to the sharpest a problem of readiness of the pedagogical staff to introduction ODL in Republic. The project of delivery ODL by means of flash-service UNESCO demands expansion and involving of the widest pedagogical society.
**Syllabus**

1. **The name of course:** Training for teachers “Basic skills of creation the network learning materials for ODL”
2. **The organizer:** UNESCO Almaty cluster office/JSC NCI, within the framework of “Expansion of Open and Distance Education delivery in Kazakhstan”
3. **Participants:** 6 methodologists and RIPKSO leading experts.
4. **The purpose of the training course:** Training the creation and publication skills of DE network courses.
5. **The outcome:** On completion of the course leading experts will be able to create, modify the courses on Moodle technology by using the following methods: lecture, test, task, exercise, interrogation, forum, and chat on the basis of UNESCO flash-servers and also to have the skills of training RIPKSO instructors.
6. **Requirements to participants:**
   - the basic ICT skills: copying, archive files, registration on the site;
   - to use the application Word;
   - to use the Internet browser;
   - the basic graphics editor skills;
   - to have the own user name, password and e–mail.
7. **Methods of training:**
   - Short lectures (10-20 minutes)
   - Presentations,
   - Group exercises,
   - Practical tasks,
   - Discussions,
   - Excursion,
   - The review of opportunities of network technologies DO (except for the listed methods, network technologies DO possess 35-40 methods of training).
8. **The equipment:**
   - Flash-discs
   - The projector,
   - The server for on-line training
   - The individual workstations connected to AVS of flash-service training.
9. **Language of training:**
   - Lecture, exercises, distributing materials - in Russian.
   - Discussion, excursion, presentation of participants - Kazakh/Russian
10. **The schedule of training on October, 15-16th, 2007 from 9.30 - 18.00**
    - Coffee-break 11.00
    - Dinner 13.00-14.00
    - Coffee-break 15.00 Supper 18.00 (15.10.07)
11. **Manuals:**
    1. 6 flash-disks
    2. The methodical material on usage of DO network
    3. Flash-server starting instruction.
    4. Badges, pens, notebooks, the program.
United Nations Educational, Scientific and Cultural Organization
UNESCO ALMATY CLUSTER OFFICE
for Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan
JSC «National Centre for Informatisation»

Training course
“Basic skills of creation the network learning materials for ODL”

Almaty, Zhandosov st. 61a,
15-16 October 2007

Monday, 15.10.2007
9.30 Registration
10.00 Seminar Opening. Welcome of UNESCO representatives and JSC “NCI”.
10.10 Purpose and tasks of course, meeting with participants, their experience of ICT using (2 min. for 1 person)
10.30 Exercise «Heating of ice»
10.40 Connection of flash-server for work
10.50 ODL and OOR Theory, joint creation, license
11.00 Coffee break
11.15 Answers on theoretic parts of ODL, discussion.
11.30 Review of developed courses in the frame of UNESCO project: 5 existing courses, 10 developing.
11.50 Introduction on-line ODL: address of server, review of users, review of servers, categories, review of methods
12.20 Exercise «Individual registration on server with confirmation of administrator»
12.50 Lecture «Alternative registration».

13.00-14.00 Lunch
14.10 Excursion to server
14.25 Lecture «Preparation to exercise history course modification, 9 forms». Theme adding practice «Changes in constitution of the RK»
14.40 Studies «Edition of the subject»

15.00 Coffee break
15.15 Discussion of different appeared questions
15.25 Lecture «Edition exercise to Kazakh history course, «Changes in constitution RK»
15.45 The system of exercise estimation
16.15 Lecture «Creation of a new course «Computer science»
16.30 Exercise «Creation of a new course»
17.30 Home task (to prepare graphic files with symbols and word files)
18.00 Dinner

Tuesday, 16.10.2007
9.30 Lecture «The text addition «one among many» to Kazak history course, the theme «Constitution». The system of estimation
10.00 Exercise «The text edition «Constitution RK»

11.00 Coffee break
11.15 Lecture «Introduction with elements of system Moodle course».
11.45 Exercises

13.00-14.00 – Lunch
14.00 Discussion of the lessons learnt: registration, theme addition, exercises, text.
14.30 Lecture «Reserve copying and recovering, data transmission by e-mail to the manager of joint-stock company “NCI”
15.00 Coffee break
15.15 Exercises «Reserve copying and recovering»
15.45 Lecture «Work with images, insert of picture, and creation of archive»
15.55 Studies «Work with images»
16.35 Forum, Chat - theory and exercises
16.50 Totals of course. Advises and wishes
17.10 Course Estimation
17.20 Speech of studies participants
17.40 Closing speech
17.50 Service of certifications
18.00 Closing ceremony
List of the seminar participants “Basic skills of creation the network learning materials for ODL”

<table>
<thead>
<tr>
<th>№</th>
<th>Name</th>
<th>Position</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mukhametzhanova Saule Talapedenovna</td>
<td>Manager of centre for IT&amp;DE c.p.s., associate professor</td>
<td>Author of educational materials on computer program (more than 30 books), lecturer – trainer. She had took part in International conference by ICT</td>
</tr>
<tr>
<td>2</td>
<td>Kudaibergeneva Kulzada Sakenovna</td>
<td>Manager of rostrum «Maintenance and quality of education», c.p.s., associate professor</td>
<td>Author of educational materials by chemistry and monograph, lecturer - trainer. She had took part in International conference by different spheres of education</td>
</tr>
<tr>
<td>3</td>
<td>Kaiynbaev Zhanbolat Tursyngozhaevich</td>
<td>Professor of rostrum «Maintenance and quality of education», c.p.s.</td>
<td>Author of educational mathematic and monograph materials, lecturer - trainer. He had took part in International conference by different spheres of education</td>
</tr>
<tr>
<td>4</td>
<td>Orakova Amangul</td>
<td>c.p.s., chief teacher rostrum of «Maintenance and quality of education»</td>
<td>Author of educational materials in Kazakh language and literature, lecturer - trainer. She had took part in International conference by different spheres of education</td>
</tr>
<tr>
<td>5</td>
<td>Suleymenova Gulnara Abdullaevna</td>
<td>Chief teacher rostrum of «Maintenance and quality of education»</td>
<td>Lecturer - trainer</td>
</tr>
<tr>
<td>6</td>
<td>Zhartynova Zhanar Alibekovna</td>
<td>Teaching methods specialist of centre IT&amp;DE</td>
<td>Lecturer - trainer</td>
</tr>
</tbody>
</table>
NCI seminar-training course estimation by RIPKSO trainers
«Basic skills of creation the network learning materials for open distance education»

1. What did you study?
   1. We leant to create courses, to add elements of course and theme, text, tasks, to insert images, to communicate by forum, chat, to create reserve copy of courses.
   2. We have got knowledge of distant and technology studies (module).
   3. We learn the technology of Moodle.
   4. I completely realized the necessity of computer in education and special facilities of distant education.

2. What methods were used?
   1. Lectures, exercises, practical tasks.
   2. Creation of courses, preparation of tests, editing of ready text, to make reference for material, to insert images, to archive creation etc.
   3. Preparation of courses, creation of text and archive
   4. The practical and visual teaching methods were mainly used while the course.

3. What did you like more?
   1. Halima’s studying methods, her consultations
   2. I liked method of individual approach.
   3. Work with server, creation of courses and creation of text
   4. Professionalism and good knowledge of our lecturer

4. What you didn’t like?
   1. There were some problems with organizations, but it was details, which were ready later
   2. When you use flash you can’t find server from different place, and It’s block chat and forum

5. What would you like to improve?
   1. Information is about participants for badges must be informed from participants. When you see some mistakes in your names it’s really unpleasantly.
   2. Advanced studies of modules
   3. Facilities of server
4. I’d like to increase the time for course and to notice the level of knowledge for listeners.

6. How do you use this knowledge?

1. Teachers should reach good knowledge in our course
2. We have got good knowledge, which I will use in my course
3. I will use this knowledge for profession development of our teachers