KYRGYZ REPUBLIC

MINISTRY OF EDUCATION AND SCIENCE OF THE KYRGYZ REPUBLIC	
KYRGYZ STATE TECHNICAL UNIVERSITY named after I.RAZZAKOV	
ISSYK-KUL STATE UNIVERSITY named after K.TYNYSTANOV	
ALA-TOO INTERNATIONAL UNIVERSITY	

CONCEPT
for adapting the Education System to the Digital Generation

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Chief Editor: M.CHYNYBAEV

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The main drafters of the Concept:

1. D. Bektasheva (Ministry of Education and Science of the Kyrgyz Republic)
2. M. Chynybaev (Kyrgyz State Technical University named after I.Razzakov)
3. I. Imanakuniva (Issyk-Kul State University named after K.Tynystanov)
3. J. Jakshylykov (Ala-Too International University)

Persons contributing to the drafting of the Concept:

1. B.Koshoeva (KSTU named after I.Razzakov)
2. A.Arzybaev (KSTU named after I.Razzakov)
3. A.Bakalova (KSTU named after I.Razzakov)
4. B.Samanchin (KSTU named after I.Razzakov)

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- ✓ Kyrgyz State Technical University named after I.Razzakov (Protocol No.1, 25.09.2019),
- ✓ Issyk-Kul State University named after K.Tynystanov (Protocol No. 1, 27.09.2019),
- ✓ Ala-Too International University (Protocol No. 2, 30.09.2019),
- ✓ and also agreed with the Ministry of Education and Science of the Kyrgyz Republic.

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JOHN DEWEY

Philosopher and education reformer
1859-1952
“If we teach today's students as we taught yesterday's, we rob them of tomorrow.”

INTRODUCTION

The Kyrgyz Republic is a dynamically growing innovation ecosystem that is integrated with the global world and attracts technology, investment and skilled personnel.

Digital transformation will make technological changes in the country and increase the competitiveness of our economy, the standard of living of citizens and the effectiveness of the state.

The Kyrgyz Republic will take its rightful place in the global economy thanks to technologies and innovations that will allow Kyrgyzstanis and local businesses to be competitive and in demand in the global market.

Advanced digital technologies such as artificial intelligence, big data and cloud computing will be actively used in the Kyrgyz Republic.

The digitalization of Kyrgyzstan poses a challenge to the education system, not only the digitalization of public services in this area, but also the introduction of new methods and approaches into the educational process.

It is necessary to adapt the education system to the digital generation by mass and effective application of ICT-based innovative educational technologies and didactic models. Along with this, it is necessary to actively use the research approach to learning, which is aimed at developing students' skills in scientific research and at the formation and development of creative abilities.

However, we must emphasize that information and communication technologies are not a panacea for all problems in the education system, but a tool that can make lectures and seminars more informative and attractive for the digital generation. **EDUCATORS WILL SAVE THEIR KEY ROLE IN THE INTERACTIVE LEARNING PROCESS ORIENTED BY THE NEEDS OF STUDENTS.**

It should also be noted that the reputation of the educator and the effectiveness of his activities will increasingly depend not only on the level of knowledge of the content of the course and on his pedagogical abilities, **AND ALSO FROM IN WHICH DEGREE HE APPLIES MODERN INFORMATION AND COMMUNICATION TECHNOLOGIES FOR THE COLLECTION, PROCESSING AND TEACHING OF SPECIFIC EDUCATIONAL MATERIAL.**

In other words, education in the digital age must be redefined and the educational paradigm must be changed, BECAUSE STUDENTS DO NOT LIKE TO LEARN IN THE TRADITIONAL WAY, AND TEACHERS SHOULD NOT CONTINUE LEARNING ON THE USUAL WAY.

Prerequisite

1. National concept of digital transformation “Digital Kyrgyzstan”
2. Education Development Strategy 2012-2020
3. Decree on declaring 2019 the "Year of the development of regions and the digitalization of the country"
4. DIGITAL EDUCATION ACTION PLAN 2020, adopted by the European Commission
5. The priorities of the Education, Audio-visual and Culture Executive Agency at the European Commission published in 2018, one of which is directed to the “MODERNIZATION OF HIGHER EDUCATION THROUGH NEW EDUCATIONAL TECHNOLOGIES“.

Goal

The goal of the concept is to adapt the education system to the digital generation by introducing and effectively implementing innovative educational technologies and didactic models in teaching, thus providing the opportunity for EVERYBODY to learn at ANY time and at ANY place with the help of ANY lecturer using ANY end device – computer, laptop, tablet, phablet, smart phone, etc.

Tasks

1. KEEPING AND GRANTING THE LEADING ROLE OF EDUCATORS THROUGH TAKING TARGETED ACTION TOWARDS:

1.1. Writing a Guide to Innovative Educational Technologies.

1.2. Publishing the Guide and disseminating it to all educators in:

- paper version;
- interactive multimedia version in internet.

1.3. Creating a publicly accessible virtual library of video lectures on the main topics of the Guide.

1.4. Creating a national network of the centres for innovative educational technologies.

1.5. Organising training courses for educators on the following topics:

- using interactive presentation systems;
- creating internet connected, interactive and multimedia presentations for lectures and seminars;
- implementing distance learning in real time by using:
  - interactive presentation systems;
  - video conferencing systems;
  - virtual classrooms;
- implementing distance learning at any time by using e-learning resources in:
  - text/graphic format;
  - video format;
- using cloud technology;

- using virtual reality;
- using augmented reality.

2. DEVELOPING TRADITIONAL LEARNING:

2.1. Building a reliable and fast broadband wireless internet infrastructure within all universities.

2.2. Equipping all classrooms with interactive presentation systems, including laptops.

2.3. Equipping classrooms with interactive tables.

2.4. Providing educational software on various subjects and disciplines.

2.5. Training educators to create and use shared cloud resources in the teaching and learning process.

2.6. Equipping all classrooms with easily moveable and flexible furnishing articles that allow for quick transformation of the seating arrangements so that the learning environment becomes better suited to a digitally supported team and project work.

2.7. Using effective digital assessment tools and feedback systems during lectures.

2.8. Equipping the common areas of universities with interactive information screens (schedule, schedule of educational processes, navigation on training aud., announcements) which provide up-to-date information, incl. information for public, cultural, sporting and other events.

3. DEVELOPING ELECTRONIC, MOBILE AND UBIQUITOUS LEARNING:

3.1. Improving the virtual learning environment of the university – the e-learning platform.

- Integration of LMS and university information system (registration for courses and estimation);
- LMS adaptation in the educational process of the university with mobile devices (smartphones, tablets, laptops).

3.2. Publishing lectures and seminars of all main courses on the e-learning platform in:

- text/graphic format;
- video format.

3.3. Creating virtual laboratories for the engineering courses.

- Usage of engineering training technology based on the remote control of real equipment via the Internet and virtual simulators (for example, Labicom, Labview).

3.4. Creating electronic interactive multimedia study materials.

- Training materials should contain animation elements, if necessary sound support,
- Provide educators with special software for creating educational content.

3.5. Digitizing the library book fund and publishing it in the virtual library.

4. DEVELOPING BLENDED LEARNING (traditional + e-learning) as the main mode of preparing specialists who possess the relevant skills required for successful functioning in the digital society.

5. IMPLEMENTATING OTHER INNOVATIVE EDUCATIONAL TECHNOLOGIES:

5.1. Using smartphones in education and transforming them into virtual personal assistants of the students.

- voice assistant: Apple Siri, Amazon Alexa, Microsoft Cortana, Facebook M, X.ai, Viv, SoundHound, Alice;
- survey, test using smartphones

5.2. Using social networks in the teaching and learning process.

- In connection with the emergence of a large number of new social services and networks, teachers and students have great opportunities to use them in the educational process. These web services and networks are gradually becoming the socio-informational environment within which many of the tasks of the new education standards can be solved, requiring the use of radically new teaching methods and forms.

5.3. Learning in networks.

- organization of teamwork, discussions.

5.4. Gamification of the teaching and learning process.

- "Gamification is the application for Application Software and Websites of approaches specific to computer games in non-game processes with the aim of attracting users and consumers, increasing their involvement in solving applied problems, and using products and services."
- Web quest development is a creative process, where a lot depends on the skills and ideas of the author. Equally important is the choice of tools for creating an educational web quest.

5.5. Using Internet of Things (IoT) in the teaching and learning process.

- Usage by subjects of the educational process of electronic services, including "cloud".
- Use Google Drive file hosting services such as Google Drive for Work and Google Drive for Education.
- Use services such as Yandex.Disk, OneDrive, Dropbox, Cloud@mail.ru, iCloudDrive.

5.6. Using Internet of Everything (IoE) in the teaching and learning process.

- Usage of artificial intelligence algorithms in the management of the educational process.

5.7. Using robots in the teaching and learning process:

- as objects of control;
  - automated training systems,
  - analysis of student performance,
  - the effectiveness of the use of electronic resources.
- as teacher's assistants.

5.8. On-line control of the physical activity and health of students.

5.9. Creating training companies in universities.

5.10. Creating conditions for giving universities the status of INNOVATIVE UNIVERSITY.

5.11. Creating a virtual university – a model of the university in the virtual educational space (web site) providing not only comprehensive information about the university but also a full set of administrative and educational services, and, most importantly, efficient distance learning.

6. IMPLEMENTING INNOVATIVE EDUCATIONAL TECHNOLOGIES IN THE TEACHING OF STUDENTS WITH SPECIAL EDUCATIONAL NEEDS

6.1. Creating interactive educational tools for students with special educational needs.

6.2. Developing an e-learning platform for students with special educational needs.

6.3. Training educators for integrating specialized methods and tools for students with special educational needs.

7. IMPLEMENTING INNOVATIVE EDUCATIONAL TECHNOLOGIES TO ATTRACT STUDENTS FROM ALL OVER THE WORLD

Active introduction of innovative educational technologies in the educational process will increase the availability of education and increase the attractiveness of educational programs for foreign students.

8. IMPLEMENTING INNOVATIVE DIDACTIC MODELS

8.1. Converting traditional didactic models into innovative models using innovative educational technologies.

8.2. Applying the "Flipped Classroom" model – it is a modern approach in teaching, which offers to swap class and homework and thereby increasing the involvement and motivation of students in the learning process.

9. INTEGRATING RESEARCH-BASED PRACTICES IN EDUCATION

Using the project method in the educational process allows you to develop additional competencies necessary for a modern graduate, such as the ability to work in a team, the ability to perceive and analyse information, the ability to solve non-standard professional tasks, etc.

10. ANALYSING THE RESULTS FROM THE IMPLEMENTATION OF INNOVATIVE EDUCATIONAL TECHNOLOGIES AND DIDACTIC MODELS

It is necessary to analyse the impact of using innovative educational technologies and didactic models in order to evaluate the improvement of the quality of the educational process and learning outcomes.

11. PROMOTING AND MULTIPLYING RESULTS AND GOOD PRACTICES through:

11.1. The media.

11.2. Regional and national workshops.

11.3. National and international conferences.

11.4. Social networks.

11.5. National network of centres for innovative educational technologies.

UNITS RESPONSIBLE FOR THE IMPLEMENTATION OF THE ACTION PLAN (CONCEPT):

- At national level:
  - Ministry of Education and Science;
- At the regional level:
  - Rectors of universities,
  - Deans of faculties;
  - Heads of departments.

FUNDING:

- From projects under regional, national and international programmes;
- From donations;
- From the university budget.

ADDITION:

WHAT DIGITAL SKILLS AND COMPETENCES SHOULD BE ADOPTED BY EDUCATORS IN ORDER TO FACILITATE AND MAINSTREAM THE DIGITAL TRANSFORMATION OF EDUCATION?

1. In the field of traditional learning:

- use an interactive board / interactive monitor;
- make internet connected, interactive and multimedia presentations for lectures.

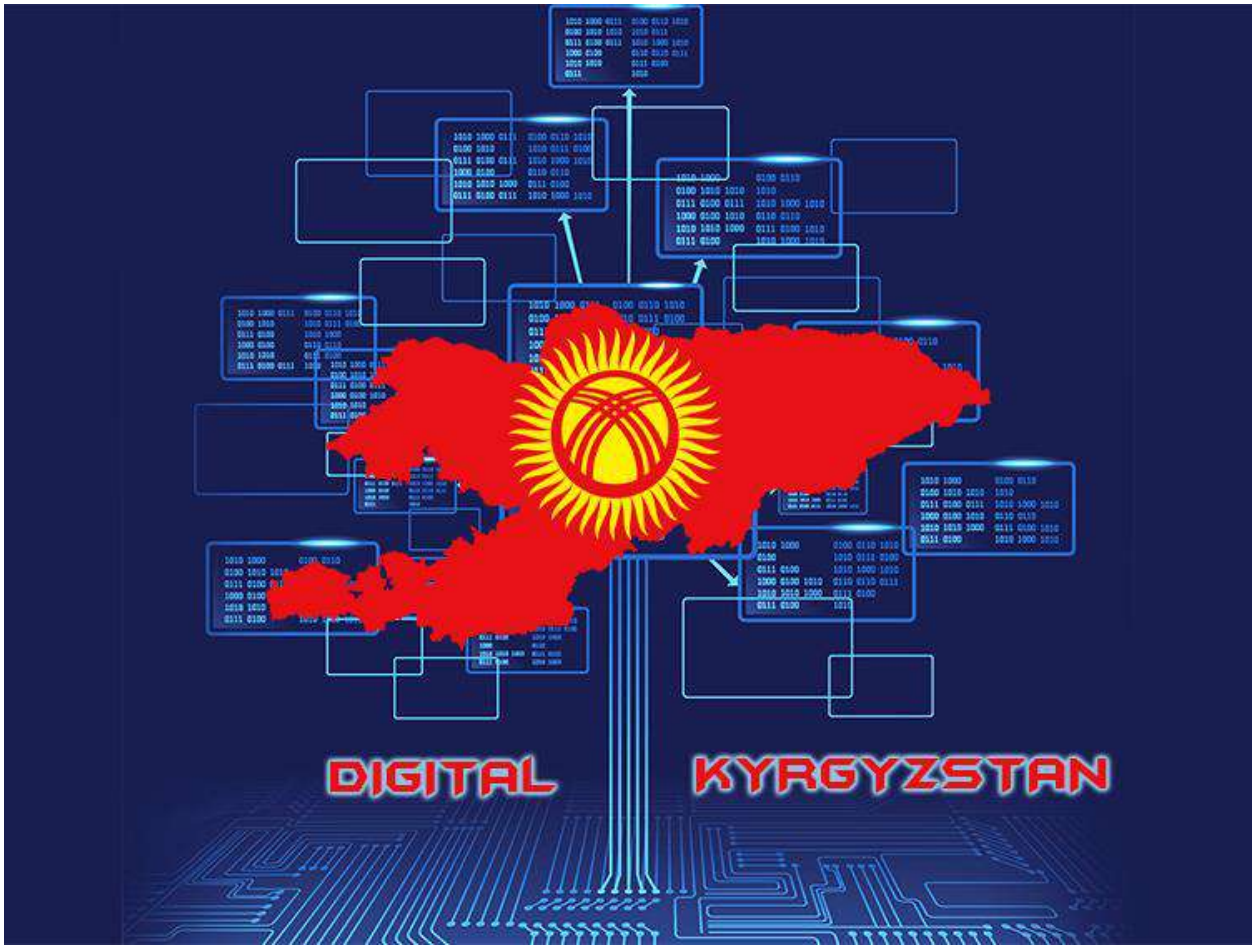
2. In the field of synchronous distance learning (in real time):

- use videoconferencing;
- use virtual classroom.

3. In the field of asynchronous distance learning (at any time):

- create and publish in internet interactive multimedia study materials;
- record and publish in internet video-lectures;
- use cloud technology.

4. In the field of blended learning: combine traditional learning and e-learning in the most appropriate way to ensure active involvement of students and allow them to be managers of their own learning, e.g. use the “Flipped Classroom” model.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