International Telecommunication Union

Institute of Electronics and Telecommunications

«CONNECT SCHOOLS» INITIATIVE

FINAL EVALUATION REPORT
OF SHORT-TERM TRAINING OF RURAL SCHOOLS TEACHERS

Training for trainers

11.03.2019 - 03.05.2019

Training Staff:	J. Barakova	_____
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Course manager:	A.Sadyrbaeva	_____

Bishkek- 2019

I. GENERAL INFORMATION

PROJECT TITLE:	«CONNECT SCHOOLS»	
Goal:	Increase access to information and communication technologies, training for modern information technologies and improvement of rural schools teachers' skills	
Objective:	To organize short term courses for teachers in rural schools on infocommunication and web-technologies	
Courses name:	Short term courses:	
	1ˢᵗ course Information and Internet technologies	
	2ⁿᵈ course Web-technologies and programming	
	3ʳᵈ course Algorithms and programming	
	Presentation of the course "Internet safety", developed by the ITU.	
	Presentation of the developed interactive e-resources	
Courses contents:	**Information and Internet technologies**. This course help to improve the rural school teachers skills in the productive use of Microsoft Office tools, some software for creating educational support material and organizing informatics classes for pupils, as well as necessary skills to use the Internet space, graphic editors and the basics of programming	
	Web-technologies and programming. This course help to improve the development skills of web pages' elementary design, construction, placement and maintenance; give opportunity to learn programming in HTML and CSS	
	Algorithms and programming. Course helps to improve programming skills in Turbo Pascal programming language and building linen, conditional and loop algorithms	
Expected results of training courses:	As a **result** of this course participants should **be able to:** - use Microsoft Office tools; - find, save and organize the necessary information from the network using available technologies and software tools; - work with different browsers (IE, Opera, Firefox, Chrome, etc.) and finding information via Internet; - design, produce and host a Web pages; - program in HTML and CSS; - design and development programs using programming language	
DATE OF COURSES:		
Courses Start Date:	11.03.2019	
Courses End Date:	03.05.2019	
Duration of course:	5 days	
Evaluation Report Date:	15.05.2019	
Project Manager:	Director of Institute	G. Abdyllaeva
Course manager:		A. Sadyrbaeva
Course Staff :	PhD	J. Barakova
	Senior Lecturer	G. Karimova
	Senior Lecturer	A. Sarybaeva

II. COURSES CONTENT

2.1. Technical environments for training

Courses 1st, 2nd, 3rd   levels were organized for teachers in rural schools from Issyk-Kul, Osh, Zhalal-Abad, Chui and Talas regions of the Kyrgyz Republic. Courses were held in computer classes with Internet access.

2.2. Course program
The course duration was 5 days. *Tables 1, 2, 3* shows the courses programs:
1) Information and Internet technologies
2) Web-technologies and programming
3) Algorithms and programming

Table 1. The content of the course "Information and Internet technologies"

	1ˢᵗ day	
Time	**Theme**	**The used materials**
9.00-9.20	**Opening of trainings.** **Questionnaires for testing the level of knowledge**	**Presentation**
9.20-10.30	**Classification of software. Operating systems. The Windows operating system. MS Office** **Microsoft Office Word** − Text formatting. − Styles. Application, create, modify, delete styles. − Box objects. Formatting and color correction of the figure. Insert screen shots. Add the names of the objects in the document. − Insert and Edit formulas. − Work with table.	**Presentation**
10.30-11.00	*Coffee-break*	
11.00-12.30	**Microsoft Office Word** − Merge documents. − Merger procedure, using Mail Merge Wizard. − Working with forms and templates. Create a form and add controls − Working with Web documents. Insert hyperlinks. − Create PDF document.	**Presentation**
12.30-13.30	*Lunch*	
13.30-15.00	**Review of daily materials** **Tasks**	**Handouts** **Video Lessons**
15.00-15.30	*Coffee-break*	
15.30-16.30	**Microsoft Office Excel** − Books and worksheets. − Insert and edit formulas.	**Presentation**

	– Insert functions. – Sort data. Filtering. – Creating and editing diagrams. The use of the layout and style of the chart.	
16.30-17.00	**Review of daily materials** **Tasks**	**Handouts** **Video Lessons**
2nd day		
9.00-9.30	**Previous days' materials review**	
9.30-10.30	**Microsoft Office Excel** – Consolidation. Adding the subtotals – Sorting and filtering – Link between different sheets.	**Presentation**
10.30-11.00	*Coffee-break*	
11.00-12.30	**Microsoft Office Excel** – Data protection in Excel. – Hiding formulas in Excel. – Data Analysis.	**Presentation**
12.30-13.30	*Lunch*	
13.30-15.00	**Review of daily materials** **Task: creating testing system in MS Excel**	**Handouts** **Video Lessons**
15.00-15.30	**Coffee-break**	
15.30-16.30	**Microsoft Office Power Point** – Create Presentation. – Add animation, sound, and video. Adding animation to a slide object (text, charts, etc.). – Insert sound and movies. Sound when the slide transition animations. – The transformation to a video presentation (new in 2010)	**Presentation**
16.30-17.00	**Review of daily materials** **Tasks: presentation, discussion of created presentations.**	**Handouts** **Video Lessons**
3d day		
9.00-9.30	**Previous days' materials review**	
9.30-10.30	**Computer networks.** – The main components of the network. – Physical addressing. – The structure of IP-address, subnet mask. – Assign static and dynamic address.	**Presentation**
10.30-11.00	*Coffee-break*	
11.00-12.30	**Fixing of the passed materials** **Tasks**	**Handouts** **Video Lessons**
12.30-13.30	*Lunch*	
13.30-15.00	**Basics of Internet resources** – What is the Internet and how to connect to it. – ISPs	**Presentation**

	– A description of the major search engines and their comparative performance. Electronic libraries. – What is e-mail. Sending documents by e-mail. Use of mailing lists. Spam. Anti-spam.	
15.00-15.30	*Coffee-break*	
15.30-16.30	**Cybersecurity** – Security Basics – Sources of Threats – Security Policy	**Presentation**
16.30-17.00	**Review of daily materials** **Tasks**	**Handouts** **Video Lessons**
4th day		
9.00-9.30	**Previous days' materials review**	
9.30-10.30	**eXe-learning - XHTML editor of the e-learning materials** – Structure window eXelearning. – Editing and formatting data. – Import text materials, inserting objects, pictures, audio and video information. – Set document properties.	**Presentation**
10.30-11.00	*Coffee-break*	
11.00-12.30	**Graphical tools (Adobe Photoshop and CorelDraw)** – Application – Practical implementation	**Presentation**
12.30-13.30	*Lunch*	
13.30-15.00	**Work with graphical tools**	**Practical task**
15.00-15.30	**Coffee-break**	
15.30-17.00	**Work with graphical tools**	
5th day		
9.00-9.30	**Previous days' materials review**	
9.30-10.30	**Basics in C++ programming** – Introduction, libraries – Structural programming	**Presentation**
10.30-11.00	*Coffee-break*	
11.00-12.30	**Basics in C++ programming**	
12.30-13.30	*Lunch*	
13.30-15.00	**Testing, questioning.**	
15.00-16.00	**Certificates Presentation** **Close Ceremony**	

Table 2. The content of the course "Web-technologies and programming"

Time	Themes	Used materials and responsible person
1st day		

Time	Themes	Used materials and responsible person
09.00-09.20	**Welcoming, opening training**	**Presentation**
09.20-10.00	**Introduction to subject**	**Presentation**
10.00-10.30	**Coffee Break**	
10.30-12.30	**Introduction to Internet** – What is the Browser (theory)? – How to work with browser (practice)? – Change browser settings? – Searching information in Internet Copy information to computer. – Classification of sites – What is the Email? – Email service. – Creating email. – Sending and receiving messages. – Browse file to the letter. **Provider**. – What is the provider? – Provider in Kyrgyz Republic	**Presentation**
12.30-13.30	*Lunch* time	
13.30-14.00	Review of daily materials *Task*	**Used materials** **Video lessons**
14.00-15.00	Web page, Introduction to HTMLtechnologies – What is Web page? – What is the Hyperlink? – How to create Hyperlink? – Creating web-page in text editor MS Word – Creating hyperlink in text editor – Classification hyperlinks	**Presentation** **Video lessons**
15.00-15.30	**Coffee Break**	
15.30-16.50	Review of daily materials *Practice tasks:* – Create web-page in text editor MSWord – Create several copies web-pages – Create hyperlink every page into main page	**Used materials** **Video lessons**
16.50-17.00	*Blank form: Proposes for the next lessons, questions*	
2nd day		
09.00-09.30	**Previous days' materials review**	
09.30-10.30	– Main structure of HTML documents – What is a "tag", attributes – title and paragraphs in HTML pages(<p>,<h>) – Tags and attributes for list and marking HTML pages (,) – TAG and creating hyperlinks(<a>)	**Presentation** **Video lessons**
10.30-11.00	**Coffee Break**	

11.00-12.30	**Practice** *Tasks* **:** – Create 1-HTML page – Use tags and titles and forparagraphs – Enter marking and lists – Create link to the another page – Enter images into page – Create links to the images	**Presentation**
12.30-13.30	*Lunch time*	
13.30-14.00	**Practice discussion**	
14.00-15.00	**TAG and (*proposition*)** – TAG and table(<table>) – Attributes and TAG and table(border, color) – Tagspecify the font settings and his attributes(<font>,) – tagdefining color (<color>) – Insert images into pages (<img>) – Create link from the image (<a>)	**Video lessons**
15.00-15.30	**Coffee Break**	
15.30-16.50	**Practice review** *Task:* – Create table in HTML page – Change settings in the table – Insert table into down of – Change image settings – Create link from the image into another page	**Presentation**
16.50-17.00	***Blank form: Proposes for the next lessons, questions***	**Used materials**
	3ᵈ day	
09.00-09.30	**Previous days' materials review**	
09.30-10.30	Cascade Style Sheets(CSS) – Introduction to CSS – Types Selection – Selector of taggs – ID Selectors – The class selector – Group selector	**Presentation**
10.30-11.00	**Coffee Break**	
11.00-12.30	**Practice review** **Task:** – Create file style.css. saving – Connect style.css into web-page – Using selectors	**Used materials** **Video lessons**
12.30-13.30	*Lunch time*	
13.30-14.00	**Practice discussion**	
14.00-15.00	**Work with styles** – Properties Font-family? – Properties Font-size – Properties Font-color – Properties Font-style	**PresentationVideo lessons**

	– Properties Font-weight – Text-decoration **Work with text** – Properties Text-align. – Properties Text-indent ? **Work with background** – Properties Background	
15.00-15.30	**Coffee Break**	
15.30-16.50	**Practice review** **Tasks:** – Change style settings web-pages – Correct texts and selectrow – Change screen page – Insert images in screen page	**Presentation**
16.30-17.00	*Blank form: Proposes for the next lessons, questions*	**Использованные материалы**
	4th day	
09.00-09.30	**Previous days' materials review**	
09.30-10.30	**Macromedia Dreamweaver HTML Editor** – Download of Macromedia Dreamweaver – Main editor interface – Tools and window properties – Work with window design and code – Creating web-setting – Work with tables – Work with hyperlinks	**Presentation**
10.30-11.00	**Coffee Break**	
11.00-12.30	**Practice review** *Task:* – Create web-page with Macromedia Dreamweaver editor – Create table, – Create link to another page	**Presentation Video lessons**
12.30-13.30	*Lunch time*	
13.30-14.00	**Practice discussion**	
14.00-15.00	**Macromedia Dreamweaver (contd.)** – Connection file style.css into web-page – Work with styles – Stylish classes and work with it – Work with web-forms	**Used materials**
15.00-15.30	**Coffee Break**	
15.30-16.50	**Practice review** *Task:* – Macromedia Dreamweaver Editor attaching style.css on the web page – Work with class – Create web-form – (text row, checkbox, button and so on.)	
16.50-17.00	*Blank form: Proposes for the next lessons, questions*	

5th day		
09.00-09.30	**Previous days' materials review**	
09.30-10.30	**Domain and Hosting** – What is domain? – What is hosting? – Free hosting – Replace sites into hosting – Manage sites in hosting	**Presentation**
10.30-11.00	**Coffee Break**	
11.00-12.30	**Practice review** **Task:** – Register in the free hosting – To get domain. – Loading sites in domain – Work with program "total commander"	
12.30-13.30	*Lunch time*	
13.30-15.00	**Testing**	
15.00-16.00	**Rewarding the Sertificate**	

Table 3. The content of the course "Algorithms and programming"

Time	Subjects	Used materials
1ˢᵗ Day		

Time	Subjects	Used materials
9.00-9.20	**Opening of trainings, greeting.** **Questionnaires to check the level of knowledge**	**Presentation**
9.20-10.30	**Basics of algorithms** • The concept of algorithms • Properties and types of algorithms • Basic algorithmic structures **Develop flowcharts algorithms** • Develop linear structure flowcharts • Development conditional structures flowcharts • Development loop structures flowcharts	**Presentation**
10.30-11.00	*Coffee Break*	
11.00-12.30	**Introduction to languages and programming methodology** - Classification of programming languages - Methodology of programming - Structured programming - Object-oriented programming - Declarative programming - The parallel programming	**Presentation**
12.30-13.30	*Lunch Time*	
13.30-15.00	**Fixation passed materials of lessons** **Practical training**	**Educational materials** **Video lessons**
15.00-15.30	*Coffee Break*	
15.30-16.30	**Software for PC** **Programming in Pascal** • The structure of the program; • Data, data types; • Operators.	**Presentation**
16.30-17.00	**This lesson materials** **Hands-on Lab** **A homework assignment.**	**Educational materials** **Video lessons**
2ⁿᵈ Day		
9.00-9.30	**Repeat passed materials of lessons**	
9.30-10.30	**The development of conditional and loop programs** Using structured operators in the programs: - Organization of conditional and selection operators; - Organization of loop programs.	**Presentation**
10.30-11.00	*Coffee Break*	
11.00-12.30	**Fixation passed materials oflessons** **Practical training**	**Presentation**
12.30-13.30	*Lunch Time*	

13.30-15.00	**Develop programs with branching structure:**
	   - Programming using conditional statements
	   - Programming with select statements
		Educational materials
		Video lessons

15.00-15.30	*Coffee Break*	

15.30-16.30	**To develop programs with loop structure:**
	   - Programming loop with a known number of iteration;
	   - Programming loop with precondition;
	   - Programming loop with postcondition.
		Presentation
		Electronic books

16.30-17.00	**Fixation passed materials of lessons** **Practical training.** **A homework assignment.**	**Educational materials** **Video lessons**
3rd Day		
9.00-9.30	**Repeat passed materials of lessons**	

9.30-10.30	**Develop a program using arrays:**
	   - Accessing elements of array;
	   - Programming tasks using one- dimensional arrays;
	   - Programming tasks using multidimensional arrays.
		Presentation

10.30-11.00	*Coffee Break*	
11.00-12.30	**Fixation passed materials of lessons** **Practical training.**	**Educational materials** **Video lessons**
12.30-13.30	*Lunch Time*	

13.30-15.00	**The development of complex software products**
	General information about the subroutines:
	   – Programming with subroutines;
	   – Procedures and functions as a kind of subroutines;
	   – Organization of libraries of user subroutines.
		Presentation

15.00-15.30	*Coffee Break*	
15.30-16.30	**Development of procedures and functions in the programs:** - Develop tasks using by the procedures; - Functions defined by user.	**Presentation**
16.30-17.00	**Fixation passed materials of lessons** **Practical training** **Homework**	**Educational materials** **Video lessons**
4th Day		
9.00-9.30	**Repeat passed materials of lessons**	

9.30-10.30	**Working with data files:**
	   – Description of the file type
	   – Typed text and typed files
	Procedures and functions for working with files
	Text files as a source of input data:
	   – Initialization text file;
	   – Writing information to a text file;
	   – Reading data from a text file/
		Presentation

10.30-11.00	*Coffee Break*	

11.00-12.30	**Fixation passed materials of lessons** **Practical training**	**Educational materials** **Video lessons**
12.30-13.30	*Lunch Time*	
13.30-15.00	**Working with records:** – Announcement records; – Accessing elements record.	**Presentation**
15.00-15.30	*Coffee Break*	
15.30-17.00	**Fixing of studied materials** **Practical lesson** **Homework**	**Handouts** **Video tutorials**
5th Day		
9.00-9.30	**Repeate passed materials of lessons**	
9.30-10.30	**Graphics Programming** – Introduction graphic mode; – The simplest graphical operators (procedures) language TurboPascal	**Presentation**
10.30-11.00	*Coffee Break*	
11.00-12.30	**Fixation passed materials of lessons** **Practical training**	**Handouts** **Video tutorials**
12.30-13.30	*Lunch Time*	
13.30-15.00	**Testing. Questioning**	
15.00-16.00	**Presentation of certificates**	

2.3. List of Participants

There were 120 participants from rural schools of different Kyrgyz Republic regions. Table 4 and Figure 1 shows a participants.

The amount of participants in frame of courses -120
- Information and Internet technologies - 34
- Web-technologies and programming-14
- Algorithms and programming-72

Table 4. The number of course participants

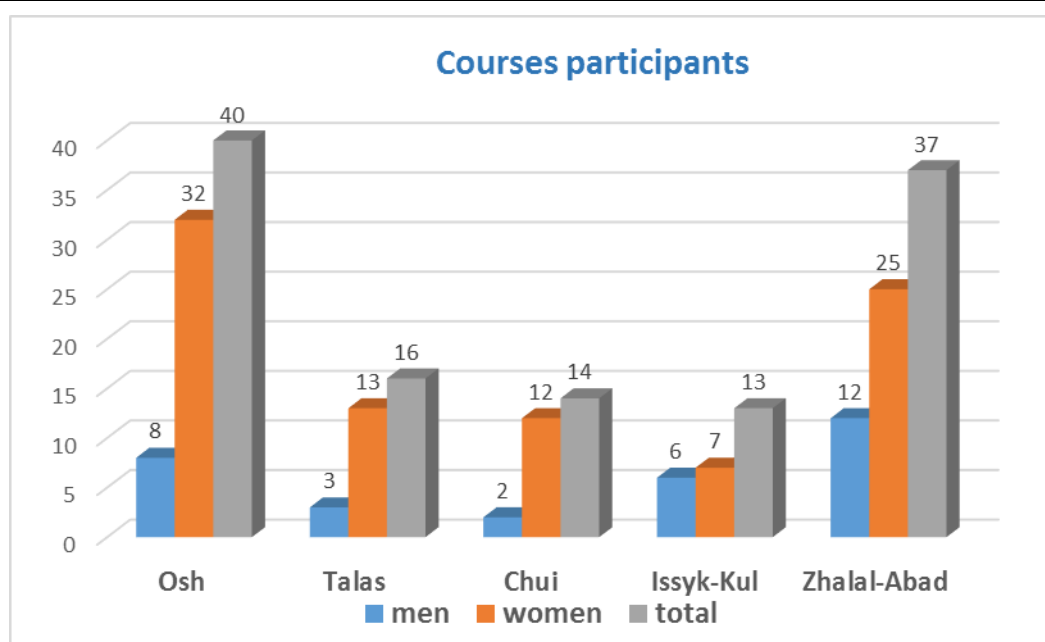| N	Region	Date	Level	The amount of participants	
				Man	Woman
1.	Osh group 1 *(Fig.2)*	11.03.2019-15.03.2019	1	4	17
2.	Osh group 2 *(Fig.3)*	25.03.2019-30.03.2019	3	4	15
3.	Talas *(Fig.6)*	08.04.2019-12.04.2019	3	3	13
4.	Chui *(Fig.3)*	08.04.2019-12.04.2019	2	2	12
5.	Issyk-Kul*(Fig.4)*	15.04.2019-19.04.2019	1	6	7
6.	Zhalal-Abad group 1 *(Fig.5)*	22.04.2019-27.04.2019	3	9	16
7.	Zhalal-Abad group 2 *(Fig.5)*	29.04.2019-03.05.2019	3	3	9
Total: 120				**31**	**89**

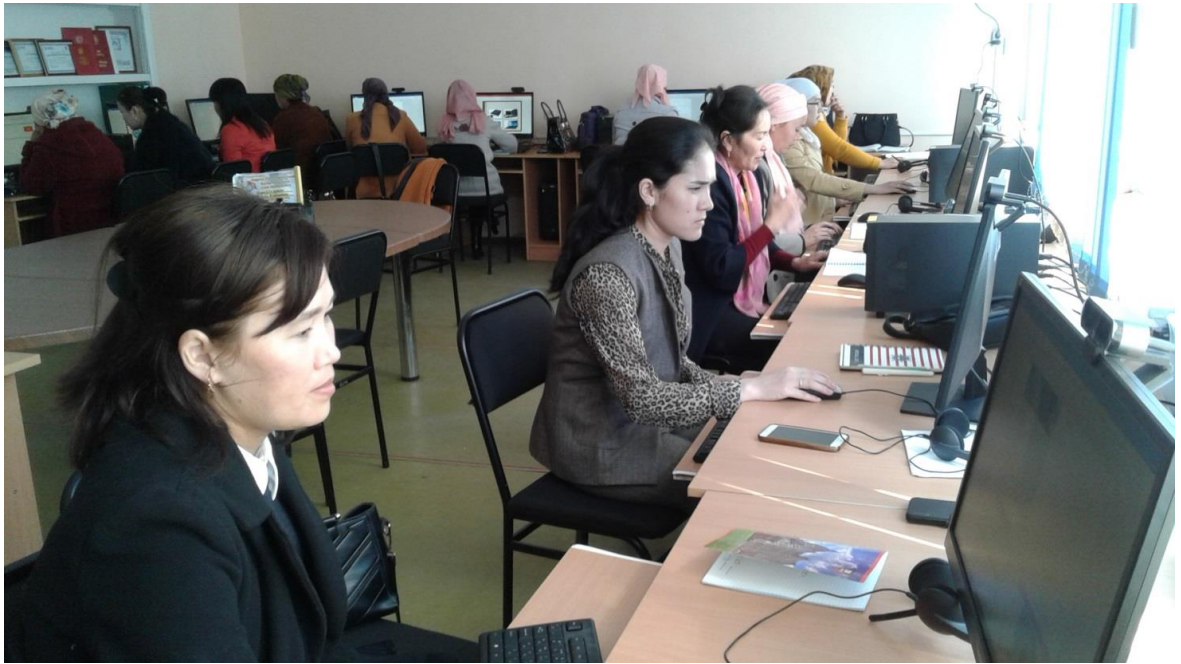*Fig.1. Number of course participants*

Fig.2 Rural schools teachers of Osh region (group 1) in class

Fig.3 Rural schools teachers of Osh region (group 1)
Group Photo

Fig.4 Rural schools teachers of Osh region (group 2) in class

Fig.5 Rural schools teachers of Osh region (group 2)
Group Photo

Fig.6 Rural schools teachers of Talas region in class

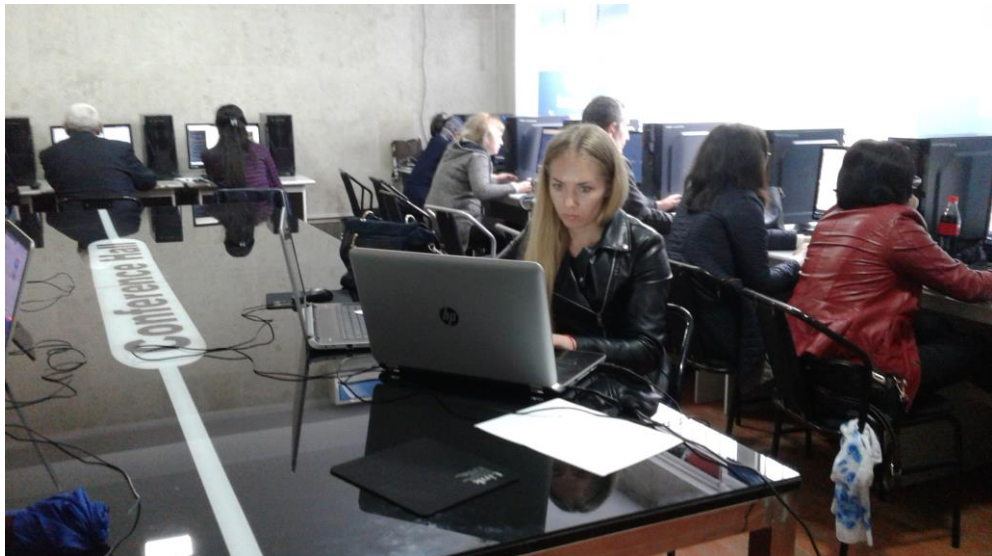*Fig.7 Rural schools teachers of Talas region*
Group Photo

Fig.8 Rural schools teachers of Chui region in class

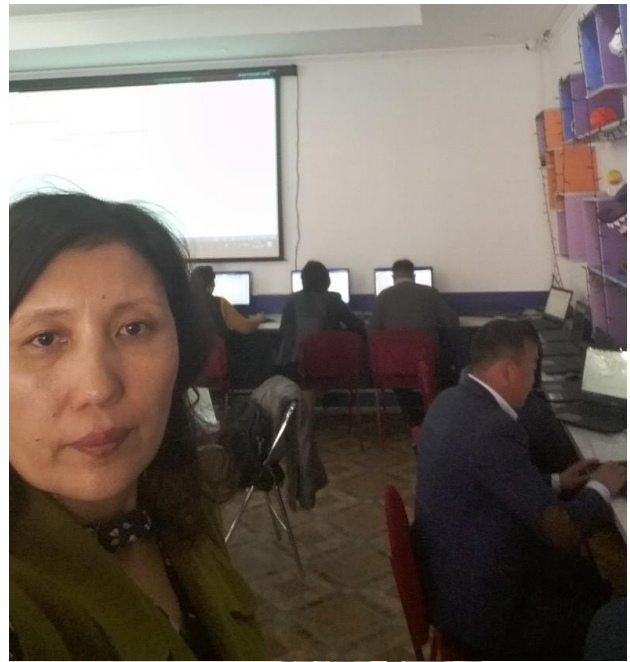*Fig.9 Rural schools teachers of Chui region*
Group Photo

Fig.10 Rural schools teachers of Issyk-Kul region in class

Fig.11 Rural schools teachers of Chui region
Group Photo

Fig.12 Rural schools teachers of Zhalal-Abad region (group 1) in class

Fig.13 Rural schools teachers of Zhalal-Abad region (group 1)

Group Photo

Fig.14 Rural schools teachers of Zhalal-Abad region (group 2) in class

Fig.15 Rural schools teachers of Zhalal-Abad region (group 2)
Group Photo

2.4. Questionnaires

All participants tested according the content of course in order to identify the level of knowledge. The results of those tests showed in Tables 5, 6, 7.

The results of the survey shows that for more than 50% of the participants the course materials will be new.

Table 5. *Results of the survey before 1ˢᵗ course starts*

Region	Have you ever participated in courses in frame of project "Connects school"		The level in using MS Office (Word, Excel, Power Point)?			Do you have programming skills?		Do you have knowledge in computer Network and Internet technologies?			Can you work with graphic tools?		Do you have knowledge in cybersecurity?		
	Yes	No	Good	Not very good	Bad	Yes	No	Yes, have	Not very good	No	Yes	No	Yes	Not very good	No
Osh (group 1)	0%	100%	47,6%	33,3%	19,0%	57,1%	42,9%	14,3%	61,9%	23,8%	14,3%	85,7%	42,9%	28,6%	28,6%
Issyk-Kul	23%	77%	60%	20%	20%	31%	69%	7%	69%	23%	7%	93%	0%	0%	100 %
Average:	**11,5%**	**88,5%**	**53,8%**	**26,6%**	**19,5%**	**44,05%**	**55,9%**	**10,65%**	**65,45%**	**23,4%**	**10,6%**	**89,35%**	**21,4%**	**14,3%**	**64,3%**

Table 6. *Results of the survey before 2nd course starts*

Region	Have you ever participated in courses in frame of project "Connects school"		Do you have knowledge in computer Network and Internet technologies?		Do you have knowledge in cybersecurity?		Do you use Adobe Dreamweaver?		Do you learn HTML?		Do you learn CSS?	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Chui	0%	100%	93%	7%	71%	29%	0%	0%	7%	93%	7%	93%

Table 7. *Results of the survey before 3rd course starts*

#	Regions	Have you ever participated in courses in frame of project "Connects school"		Do you have knowledge bout programming?					Do you use PAscal ABC?		Do you have Internet access?		Do you have tutorials in kyrkyz language?	
		Yes	No	Yes	No	Pascal	Basic	C, C++, Java	Yes	No	Have access	Via USB- (O, Beeline, Megacom)	Yes	No
1	Osh (group 2)	0%	100%	68,42%	31,58%	10,53%	73,68%	0%	10,52%	89,48%	31,58%	47,37%	15,79%	84,21%
2	Talas	0%	100%	68,75%	31,25%	18,75%	56,25%	0%	12,5%	81,25%	62,50%	43,75%	12,50%	81,25%
3	Zhalal-Abad region (group 1)	0%	100%	88%	12%	8%	80%	0%	8%	92%	84%	60%	28%	80%
4	Zhalal-Abad region (group 2)	0%	100%	75%	25%	16,67%	83,33%	0%	16,66%	83,33%	66,67%	50%	16,66%	83,33%
	Average:	0%	100%	75%	25%	13,4%	73,3%	0%	11,92%	86,5%	61%	50%	18%	82%

III. COURSE TEST RESULTS

3.1. Testing exam

At the end of course participants pass exam according learnt courses materials. The test results shown in *Table 8 and Fig.16.*

Table 8. Test results

N	Region	Excellent	Good	Satisfied	Not satisfied
I	The 1st course	18	15	1	0
1	Osh (group 1)	15	6	0	0
2	Issyk-Kul	3	9	1	0
II	The 2nd course	7	7	0	0
3	Chui	7	7	0	0
III	The 3rd course	11	43	18	0
4	Osh (group 2)	3	11	5	0
5	Talas	2	10	4	0
6	Zhalal-Abad region (group 1)	3	15	7	0
7	Zhalal-Abad region (group 2)	3	7	2	0
	Total	36	65	19	0
	%	**30%**	**54%**	**16%**	**0%**

All participants passed the test and more than 80% of them have shown good results (Fig.8).
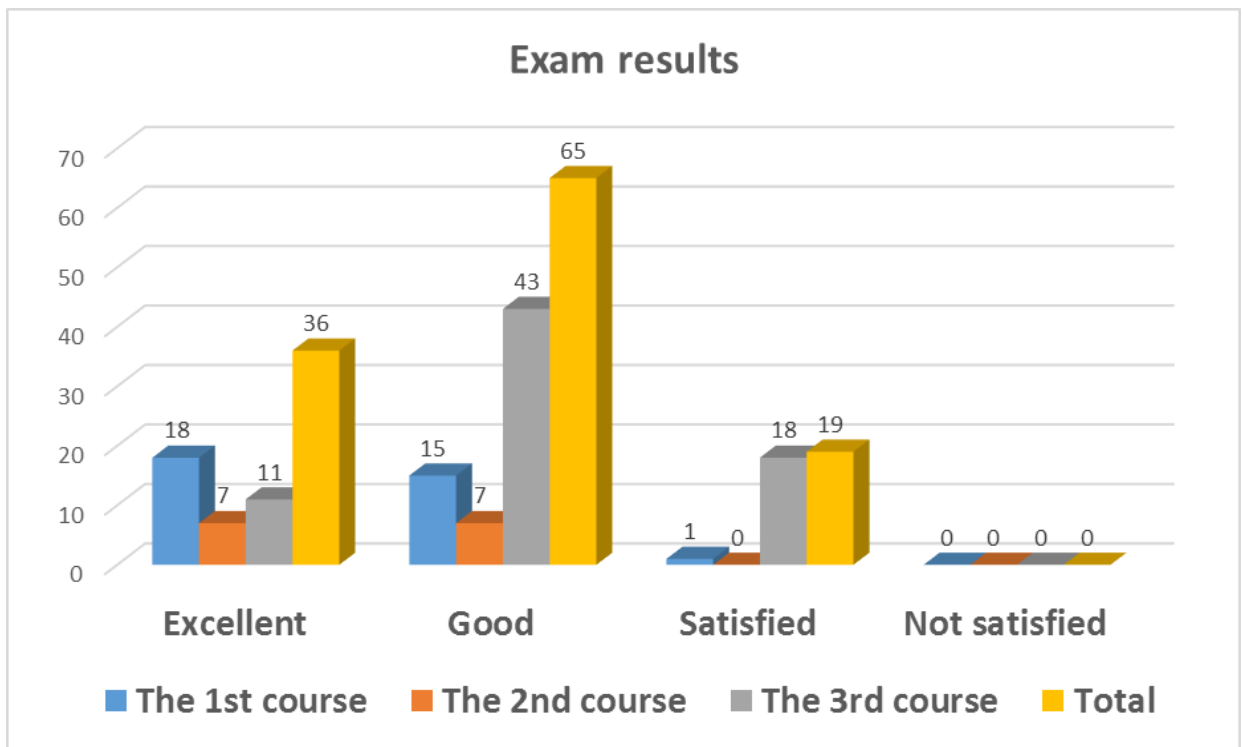
Fig. 17. Test results

After courses in order to assess, the level of participants' knowledge according conducted courses each participants must surveyed. The results of this survey given in *Table 10.* It shows that all participants satisfied with course materials and expressed gratitude to the organizers: the International Telecommunication Union and to trainers from Institute of Electronics and Telecommunications and wish to continue those courses.

Table 9. Results of the survey at the end of the course

Total amount of participants	You enjoyed the level of the course?		Do you want to participate to the course of the next level?		How you estimate your level of knowledge after a course?		
	Yes	No	Yes	No	Excellent	Good	Satisfied
120	**100%**	**0%**	**100%**	**0%**	**31%**	**63%**	**6%**

IV. CONCLUSIONS

During the period of the course 11.03.20196-03.05.2019 within the project "Connect a Schools" attended courses and received certificates of 120 people from different rural schools in Issyk-Kul, Osh, Jalal-Abad, Chui and Talas regions of Kyrgyzstan.

All course participants noted the importance of such courses because such courses really help to improve the ICT competence of schools teachers.

The participants noted the high professional level of course' trainers, usefulness and richness of the course materials. They expressed that the course helped them to love their work, once again make sure in the future of the profession. In addition, teachers kindly ask to continue courses and teach them Internet programming technology (PHP, MySQL, Jscript, Apache, etc.) and databases.

In order to continue the sustainable improvement of rural teachers skills it is necessary

1. To increase ICT competence of teachers in other subjects of schools, i.e. continuing education of school teachers in ICT;
2. To help in development of textbooks on information and infocommunication technologies in the state language;
3. Conduct online cyberspace security training.

Recommendation:

1. Continue to conduct training courses for teachers in rural schools.
2. Conduct separate courses on cyberspace security and use as an additional source of information an interactive multimedia guide on the Internet safety developed by ONAT named Popov.
3. Encourage the best participants in the courses with information and communication technology manuals in Kyrgyz language, developed by the course trainers.