Electronics and Telecommunication Institute

Kyrgyz State Technical University named after I. Razzakov

International Telecommunication Union

«CONNECT SHCOOLS» PROJECT

EVALUATION REPORT

OF SHORT-TERM TRAINING OF TEACHERS OF RURAL SCHOOLS
ON COURSE "BASICS OF ALGORITHMS AND PROGRAMMING»

Training for trainers

06.04.2015- 10.04.2015

Teachers Staff:	J.Barakova	*signature*
	A. Sarybaeva	*signature*
Course manager:	A.Tutlis	*signature*

Bishkek - 2015

I. GENERAL INFORMATION

TITLE OF THE PROJECT:	**«CONNECT SCHOOLS»**
The purpose of the project:	**Expanding access to information and communication technologies, training in modern information technology and improvement of practical skills of teachers in rural schools.**
Tasks:	Organize short-term training courses for teachers in rural schools by the method of programming.
TITLE OF THE COURSE:	**"The course of training teachers in rural schools on the basics of algorithms and programming"**
The purpose of organizing refresher course:	The **purpose** of the course is to train teachers in rural schools programming skills, develop logically correct and efficient algorithms, programs.
Expected learning outcomes:	1) Formation of skills of the principles of construction of algorithms, basic algorithmic structures, systems programming; 2) Formation of skills of construction of algorithms and programming in programming languages; 3) Formation of skills of work with modern software development tools.

DATE OF COURSE:	
Start Date:	*06.04.2015*
The End Date:	*10.04.2015*
Duration:	*5 days*
Evaluation Date:	*10.04.2015*

Project Manager:	*Director of Institute*	*signature*	Prof. B.Nurmatov
Course Staff :	Course Manager	*signature*	A. Tutlis
	Ph.D	*signature*	J.Barakova
	Senior Lecturer	*signature*	A.Sarybaeva

II. COURSE CONTENT
2.1. Technical environments for training

Organized outreach courses for rural schools teachers of Osh regions districts of the Kyrgyz Republic. Classes were held in, which has a modern material and technical base, equipped with multimedia classrooms and a computer with Internet access.

2.2. Course program

CONTENT

1th 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 algorithm • Properties and types of algorithm • The main characters are block - schemes of algorithms • Basic algorithmic structures **Develop flowcharts algorithms** • Develop flowcharts algorithms for problems of linear structure • Development block - schemes algorithms for problems branched structure • Develop block - schemes algorithms for problems of a cyclic structure	**Presentation**
10.30-11.00	*Coffee Break*	
11.00-12.30	**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**
2 th Day		
9.00-9.30	**Repeat passed materials of lessons**	
9.30-10.30	**The development of branching and cyclic programs** Using structured operators in the programs: - Organization of branching using conditional operators and selection; - Organization of programs cyclic structure.	**Presentation**
10.30-11.00	*Coffee Break*	

11.00-12.30	**Fixation passed materials of lessons** **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	**Develop programs cyclic structure:** - Programming cycles with a known number of repetitions; - Programming cycles precondition; - Programming cycles postcondition.	**Presentation** **Electronic books**
16.30-17.00	**Fixation passed materials of lessons** **Practical training.** **A homework assignment.**	**Educational materials** **Video lessons**
3 th 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**
4 th 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**
5 th Day		
9.00-9.30	**Repeate passed materials of lessons**	

9.30-10.30	**Graphics Programming**
	   – Initialization 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**	

There were 2 Coffee Breaks where participants could ask teachers and discuss about class and exchange experience between each other.

All practical and theoretical classes' tutorials were printed and provided to course students, also were shared soft copies of video class materials (see Appendix 2).

On the end of class all participants were tested by test program for knowledge level checking where questions relate with program topics.

Comment Book was created for course participants. Each student should leave opinion about course and give own suggestion according course, teachers, teaching methods and organization of training.

Results of the survey at the beginning of the course

№ п/п	Ф.И.О. участника	Have you participated in previous courses held within the project "School Connect"		Have you conception's about algorithms?		What programming languages do you know?			Did you work with PascalABC?		Have you conception's about graphical algorithms?		Do you have textbooks in Kyrgyz language?	
		Yes	No	Yes	No	Pascal	Basic	C, C++, Java	Yes	No	Yes	No	Yes	No
1	Murzakulova Tolgonai	+		+			+			+	+		+	
2	Tanikulov Tynybek	+			+					+		+		+
3	Ismanova Gulsun		+		+					+		+		+
4	Kalykova Venera		+	+			+			+	+			+
5	Matmusaeva Aizharkyn		+	+			+			+	+			+
6	Matkasymov Almazbek	+		+			+			+	+			+
7	Matmusaev Turusbek	+		+			+			+	+			+
8	Shabdanov Zikiriya		+	+			+			+	+			+
9	Nasirdinova Gulshoda		+		+					+		+		+
10	Babnova Aigul		+	+			+			+	+			+
11	Egamkulova Tursun		+	+			+			+	+			+
12	Mamyrova Aizirek		+	+						+		+		+
13	Zakirova Sharipa		+	+			+			+		+		+
14	Apsalam k. Zulphia		+		+					+		+		+

15	Tazhikova Gulzhan		+		+					+		+		+
16	Jusupova Mahlie		+							+		+		+
17	Kuchkanova Madina		+							+		+		+
	в процентах	**23,5**	**76,5**	**53,0**	**47,0**	**0**	**53,0**	**0**	**0**	**100,0**	**47,0**	**53,0**	**6,0**	**94,0**

The results of the questionnaire to rate indicate that:
1) 23.5% of the participants took part in previous courses held within project "Connect a School";
2) 53% of the participants was engaged on Basic programming language;
3) almost all of the participants did not work in PascalABC;
4) rural schools are not provided with textbooks on programming in the Kyrgyz language.

Results of the survey at the end of the course

| № п/п	What topics are not necessary for you, and what topics are you more like and want?	Are all the topics of the course have been passed?	You enjoyed the level of the course? Your opinion about the course	Do you want to participate in the course of the next level? Ifso, onwhat?
1	All subjects are needed	Yes	The course is held at a high level. I got a lot of useful information.	Yes, I want to participate in courses on MS Access, MS SQL Server
2	There was so unnecessary. All themes are very much needed	Yes	The course is held at a high level, practical exercises helped to master the course al approach to each student	Yes, I want to participate in courses
3	All themes are necessary and useful for me	Yes	Classes are held at high level and I really enjoyed teaching methods trainers	Yes, I want to participate in courses on programming
4	All themes are necessary and actual	Yes	In a short time could increase the level of qualification	Yes, I want to participate in courses on programming
5	All passed topics we really need	Yes	I have received a lot of useful information available on the Kyrgyz language	I learned a lot, and want to participate in future courses of this level
6	All passed topics needed	Yes	I want to note the excellent teaching quality of teachers	I want to participate in courses on object-oriented programming
7	All passed topics needed	Yes	The course is held at a high level, especially liked the handouts, which also include electronic textbooks in the Kyrgyz language	Yes, I would like to participate in courses on programming languages
8	No unnecessary topics	Yes	We got a lot of useful information available on the Kyrgyz language, as there are no textbooks in Kyrgyz	Yes, I would like to participate in courses organized you
9	All themes are very necessary to us	Yes	Trainers show their professionalism, liked their attitude and individual approach to each	Yes, I would like to participate in courses on site creation and hosting

10	All themes are very necessary to us	Yes	I want to continue the course, I liked these courses	I would like to participate in courses on database creation
11	All passed topics needed	Yes	Trainers showed their proffesionalizm liked their attitude, and individual attention to each	Yes, I would like to participate in courses on Excel, Word
12	All themes need	Yes	In rural schools do not have the conditions to improve the knowledge of teachers, so these courses are so necessary for rural schools	Yes, I would like to participate in courses on internet programming
13	All themes are very necessary to us	Yes	In rural schools do not have the conditions to improve the knowledge of teachers, so these courses are so necessary for rural schools	Yes, I want to participate in all courses on MySQL, SQL Server
14	All themes are necessary and useful for me	Yes	The course is held at a high level, I want to express my gratitude to our coaches	Yes, I want to participate in all the courses the next level
15	All themes are necessary and useful for me	Yes	The course is held at a high level, practical exercises helped to master the course	Yes, I want to participate in all courses next level
16	All themes are necessary and useful for me	Yes	The course is held at a high level, I want to express my gratitude to our coaches	Yes, I want to participate in all courses next level
17	All themes are necessary and useful for me	Yes	Classes are held at high level and I really enjoyed teaching methods trainers	Yes, I want to participate in courses on programming

As shown by the results of the questionnaire after the course, participants noted the high level of courses, thanked the organizers of the course and wish to participate in courses on software engineering.

2.3. List of Participants

There were 17 rural teachers from Osh regions districts of the Kyrgyz Republic and 13 of them were women:

№	District/city	School	Name	
1	Osh city	Osh institute of education	Murzakulova Tolgonai	Teacher on Informatics
2	Alay	Secondary school named after Madaniyat	Tanikulov Tynybek	Teacher on Informatics
3	Uzgen	Secondary school named after Zhusupbekov	Ismanova Gulsun	Teacher on Informatics
4	Kara-Kulzha	Secondary school named after E.Osmonov	Kalykova Venera	Teacher on Informatics
5	Kara-Kulzha	Secondary school named after A.Osmonov	Matmusaeva Aizharkyn	Teacher on Informatics
6	Uzgen	Secondary school named after Karahanid	Matkasymov Almazbek	Teacher on Informatics
7	Uzgen	Secondary school named after Kyzyl-Too	Matmusaev Turusbek	Teacher on Informatics
8	Osh city	Osh institute of education	Shabdanov Zikiriya	Teacher on Informatics
9	Kara-Suu	Secondary school named after K.Zhusuev	Nasirdinova Gulshoda	Teacher on Informatics
10	Kara-Suu	Secondary school named after Zairov	Babnova Aigul	Teacher on Informatics
11	Kara-Suu	Secondary school named after Zhamankulov	Egamkulova Tursun	Teacher on Informatics
12	Kara-Suu	Secondary school named after N.Isanov	Mamyrova Aizirek	Teacher on Informatics
13	Osh city	Secondary school named after U.Salieva	Zakirova Sharipa	Teacher on Informatics
14	Kara-Suu	Secondary school named after Sh.Zhumaev	Apsalam k. Zulphia	Teacher on Informatics
15	Kara-Suu	Secondary school named after Teshebaev	Tazhikova Gulzhan	Teacher on Informatics
16	Nookat	Secondary school N3	Jusupova Mahlie	Teacher on Informatics
17	Nookat	Secondary school N6	Kuchkanova Madina	Teacher on Informatics

Kara-Kuldzha;
11,76%

Nookat; 11,76%

Alay; 5,88%

Osh; 17,65%

Kara-Suu;
35,29%

Uzgen; 17,65%

- Nookat
- Alay
- Osh
- Uzgen
- Kara-Suu
- Kara-Kuldzha
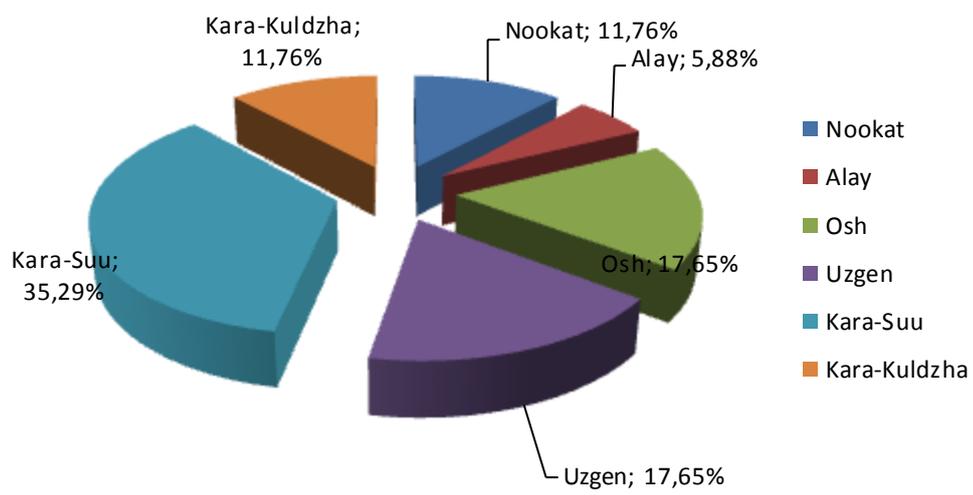
III. COURSE TEST RESULTS

3.1. Testing exam

On the end of course participants was tested according passed tutorials. All result papers attached in *Appendix 3.*

Exam Sheet № _____   Exam Data: *10.04.2015*

N	First, Surname	Number of correct answers	Number of incorrect answers	Percent age of correct answers	Grade
1	Murzakulova Tolgonai	18	7	72%	4
2	Tanikulov Tynybek	16	9	64%	3
3	Ismanova Gulsun	20	5	80%	4
4	Kalykova Venera	19	6	76%	4
5	Matmusaeva Aizharkyn	18	7	72%	4
6	Matkasymov Almazbek	20	5	80%	4
7	Matmusaev Turusbek	24	1	96%	5
8	Shabdanov Zikiriya	18	7	72%	4
9	Nasirdinova Gulshoda	16	9	64%	3
10	Babnova Aigul	22	3	88%	4
11	Egamkulova Tursun	18	7	72%	4
12	Mamyrova Aizirek	21	4	84%	4
13	Zakirova Sharipa	18	7	72%	4
14	Apsalam k. Zulphia	17	8	68%	3
15	Tazhikova Gulzhan	15	10	60%	3
16	Jusupova Mahlie	17	8	68%	3
17	Kuchkanova Madina	17	8	68%	3
	Average	**18**	**7**	**76%**	**4**

Total: **17**

"excellent"	*1*	*6%*
"good"	*10*	*59%*
"satisfied"	*6*	*35%*
"notsatisfied"	*0*	*0%*
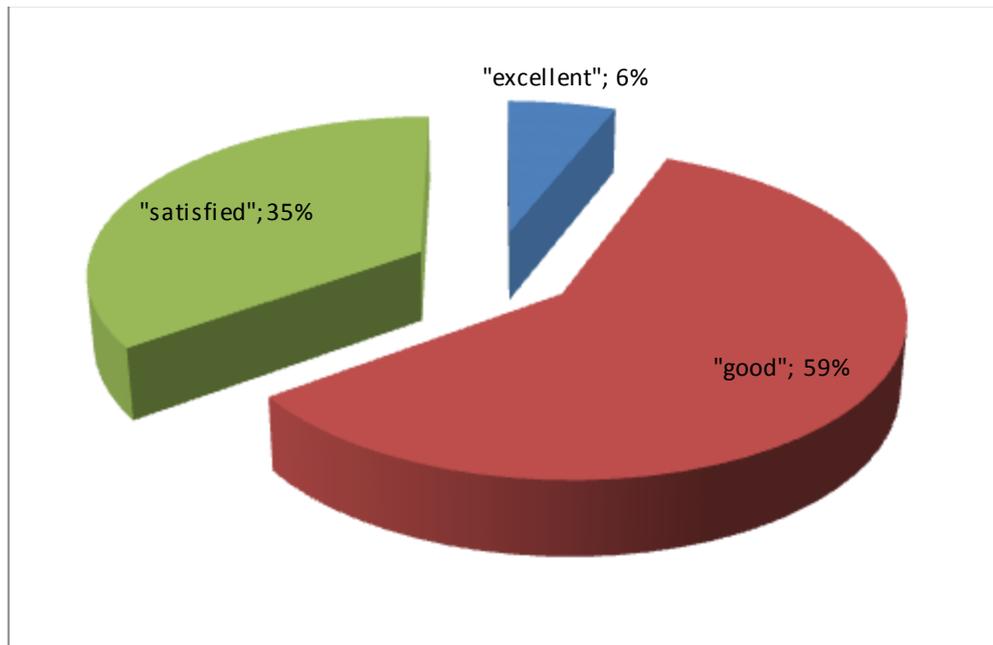
Test program was installed on every participants computer and test time was 40 min. After completing test everybody could see own results automatically. Heretest paper number,name, surname of tested person, questions and answer, scores and finally amount of correct answers, and it percentage representation and grade. Testsresultview:

ЭЛЕКТРОНИКА ЖАНА ТЕЛЕКОММУНИКАЦИЯЛАР ИНСТИТУТУ

ТЕСТТИН ПРОТОКОЛУ №__

Фамилиясы, аты, атасынын аты	**Закирова Шарипа**	
Датасы	**10.04.2015**	
Окулган курс	**Алгоритмдер жана программа тузуунун негиздери**	

№	Суроо жана ага берилген жооп	Баллы
1	Procedure Tangens(f:real; var t:real); деп аныкталган процедурага кантип туура кайрылууга болот? *tangens(pi/2,t);*	1
2	summa := sqr(x)+3*a операторунда озгорулмолор болуп ... саналат? *x, a*	1
3	Массивдеги жуп элементтердин санын эсептоо керек, кайсы шарт туура жазылган деп эсептейсиз? *if A[i] mod 2 = 0 then K:=K+1*	1
4	x=6; DEC (x, 4); операторлорунун жыйынтыгы эмнеге барабар? *2*	1
5	Озгорулмолор болуму томонку кызматты сочу менен аныкталат: *VAR*	1
6	Томонку операторлордун тизмегин A:=4; B:=2; X:=A mod B аткарууда X оргулуосунун мааниси эмнеге барабар? *0*	1
7	N! эсептоо учун туура жазылган операторду корсоткуло *p:=1; for i:=1 to n do p:=p*i;*	1
8	Программанын жыйынтыгы эмнеге барабар? *2*	1
9	Программаны жогорку деңгээлдеги тилден томонку деңгээлдеги тилге которуу учун томонку программа колдонулат. *компилятор*	1
10	Томонку операторлорду аткаргандан кийин X тин мааниси эмнеге барабар болот? *5*	1
11	Жогорку деңгээлдеги программалоо тили болуп томонку тил эсептелет. *Паскаль*	1
12	P[1..12] массивинин акыркы мааниси кандай аныкталат? *P[12]*	1
13	x = 8; INC (x, 5); операторлорунун жыйынтыгы эмнеге барабар? *3*	0
14	Томонку программанын жыйынтыгы эмнеге барабар? *11*	0

№	Суроо жана ага берилген жооп	Баллы
15	Төмөнкү программанын жыйынтыгы канчага барабар: S:=-5;x:=0;repeat s:=s*(x+2);x:=x+1; until x<2;write(s); *-30.0*	1
16	Төмөнкү программанын жыйынтыгы эмнеге барабар : k:=6; for i:=1 to 5 do inc(k); write(k,' '); *11*	0
17	Массив туура эмес аныкталган ...? *VAR W:ARRAY[5,7] OF INTEGER;*	1
18	Кайсынысы туура эмес жазылган? *VAR i,max:integer; a,max:real;*	1
19	Төмөнкү операторлорду аткаргандан кийин Xтин мааниси эмнеге барабар болот? x:=12; while x:=12 do begin x:=x+5; end *17*	1
20	Алгоритмде кадамдардын кайталанбай биринин артынан бири аткарылышы кандай алгоритм деп аталат? *түз*	1
21	Туура эмес жыйынтыкты аныктагыла? *11 div 5=1*	1
22	Туура жазылган функцияны аныктагыла. *FUNCTION Faktor (a:integer):integer;*	1
23	procedure summa(x:integer; var y:integer); процедурасын кайсы оператор аркылуу кайрылууга болот? *N: = summa (5,a)*	0
24	Массив туура эмес аныкталган ... *VAR A:ARRAY[1..20] OF REAL*	0
25	X = 6; IF X>0 THEN Y: = Sqr(x) ELSE Y:=Sqrt(x); операторлорунун жыйынтыгы эмнеге барабар? *36*	1

Туура жооптун саны _____20_____

Туура эмес жооптун саны _____5_____

Туура жооптун пайызы _____80%_____

Баасы _____4_____

- 80 % Туура
- 20 % Туура эмес
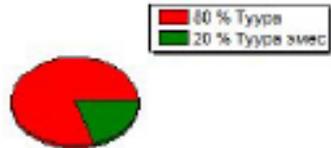
Мугалимдин фамилиясы, аты, атасынын аты _____

_____

_____

On the end of course each participant express his own opinion about course and give own suggestion according course, teachers, teaching methods and organization of training. Teachers noted that courses were very useful and informative.

According test results participants got Certificates.