

ESTABLISHMENT OF COMPUTER LABS IN 226 FDE SCHOOLS
FOR GIRLS

AN
IMPACT
ANALYSIS



No nation can rise to the height of glory unless your women are side by side with you.

Muhammad Ali Jinnah

CONTENTS

1. Acknowledgement	3
2. Background of the project	4
3. Implementation of the project	5
4. Impact Assessment of the project	7
5. Students' response	9
5.1 Learning / improvement aspects	10
5.2 Outcome of training	11
5.3 Feedback / Opinion	13
5.4 Students' awareness with ICT	14
6. Teachers' response	16
6.1 Course Content.....	16
6.2 Are students benefitting from the course?	17
6.3 Shortcomings of the program	17
6.4 Improvement/Suggestions for program.....	18
6.5 Personality Development	18
6.6 Advantages of the program.....	19
7. Principals' response	21
7.1 Feedback about teachers	21
7.2 Retention of Computer lab.....	21
7.3 Uses of PC lab	22
8. Some takeaways from field surveys	23
9. Shortcomings and Suggestions	25
9.1 SHORTCOMINGS.....	25
9.2 SUGGESTIONS.....	25
10. Conclusion	26
11. References	27
12. ANNEXURE 1	28
13. ANNEXURE 2	34

1. ACKNOWLEDGEMENT

The Quality Assurance & Monitoring team was assigned an impact assessment study in 226 institutes of Federal Directorate of Education (FDE) in Islamabad Capital Territory, where Universal Service Fund (USF) had established IT labs in collaboration with FDE. The study, particularly data collection tools, were designed by a team of survey and design experts at Universal Services Fund. Quantitative data was collected from 3 sample sub-groups through an online questionnaire devised by the team.

On the online platforms, Pak Multi Services provided due support. The students, senior school teachers (SCTs) and heads of educational institutions (Principals) were highly responsive. Their feedback helped in collating various aspects of data and formed the helped in finalizing this report. The impact analysis study was an organized team effort and its outcomes reflect the efforts of various individuals involved in this assignment; each one of whom worked with dedication, zeal and fervor to give various endeavors a definitive shape.

USFCo Impact Assessment Team comprised of:

Survey Questionnaire, Data compilation, Analysis, Report writing

Tahira Malik, Faisal Habib, Shahid Mehmood under supervision of Usman Wadud.

Field Survey Teams

Asma Afreen, Aamir Zeb

Implementation Partners

Coordination and support of Mrs. Sameena Zia, Deputy Director FDE and Mr. Muhammad Masood Asghar, CEO PMS remained available throughout this study. They were instrumental in bridging the gap between USF team and students, SCTs and Principals and helped in clarifying various aspects of the survey to various stakeholders. Even though students were busy in their examinations, they responded in large numbers to online survey.

Training Partners

Pakistan's womenfolk form 50.8% of the nation's population [\[1\]](#). It is therefore important to inculcate self-reliance in our female population to enable them to become useful members of the social fabric and effective contributors to nation's GDP.

USF approached its various training partners - UN Women, Facebook and Microsoft - to assist in providing training to SCTs. As a result, a select group of SCTs were imparted training as Master Trainers. The training from Microsoft helped in developing an effective curriculum, while that from Facebook and UN Women focused on enhancing entrepreneurship and business awareness among course recipients.

2. BACKGROUND OF THE PROJECT

Article 25-A of the Constitution of Islamic republic of Pakistan makes it clear that the Government must provide free education to all children from the ages of five to sixteen. Still many children continue to be overlooked. {2}

According to the Human Rights Watch report, titled ‘Shall I Feed my Daughter or Educate Her?’, more than 33% of Pakistani girls are not attending primary school, compared to 21% of boys. Only 13% of girls are still in school by 9th grade. With a low literacy rate of 53%, the ICT literacy rate in Pakistan especially in the rural areas is negligible. {3}

Right now, many girls are not developing the skills they will later need to secure work. In Pakistan, nearly 23 million children are out of school; majority of these children are girls. Due to social norms, girls tend to face specific limitations on their ability to make decisions, affecting their education and work. {4}

Even ITU had a theme in 2016 that emphasized on ICT entrepreneurship for social impact. Keeping this in view, it was realized that since girls are generally lagging in some fields, a concrete effort is needed to bring them at par with boys. The most feasible option for USF was to equip girl students with IT education so that they could be provided with opportunities to learn about ICT related technologies and implement them in their lives. ICT is the lever of economic progress and USF ensured that this project would empower girl students from all sections of the society.

Although constraints posed a challenge, at the same time, they became the driving force for this initiative. USF made up a plan to help girl students enrolled in these institutions, spread over urban and rural terrain of Islamabad Capital Territory (ICT). The aim was to make them computer literate and bring them at par with students elsewhere in the world. {5}



Figure 1: Students at IMCG, G-10/4

3. IMPLEMENTATION OF THE PROJECT

The main theme of the project is to impart ICT education to girl students with the aim to reduce gender disparity and to bring female students at par with their male counterparts in the field of ICT.

3.1 Inception of the Project

A feasibility survey was conducted by USF, which highlighted the following two categories of schools in Islamabad Capital Territory.

- Type A, where enough space is available to establish an IT lab.
- Type B, where space is not available for setting up an IT lab. 51 primary schools fall in this category. Each school is provided with 40" LED television connected to a PC in designated classrooms.

In all, 226 schools in jurisdiction of Federal Directorate of Education (FDE) were identified. After principle approval from USF Board for establishment of IT labs in these schools, a collaboration with FDE was established and 2 MoUs were signed. MoU 1 was for establishment of 107 PC labs, predominantly in rural Institutions, whereas MoU 2 aimed at establishment of 119 PC labs in girls' schools located in urban areas.

3.2 Project highlights

There were four key stakeholders – USF, FDE, Pakistan Multi Services (PMS) and the Contractor. USF provided funds for the project, FDE provided space, infrastructure and facilitation to implement this program whereas PMS hired human resource (ICT teachers) for the labs. The contractors, M/s Analytical Solutions Pvt Ltd (ASL) and M/s Computer Marketing Company (CMC) were the fourth stake holder. They were selected after a rigorous bidding process and provided PCs and other requirements for the PC labs.

The project was completed in two phases:

- Phase I- Establishment of computer labs in 107 FDE institutes for girls in Rural ICT. This phase was awarded to CMC.
- Phase II- Establishment of computer labs in 119 institutes in Urban ICT. This phase was awarded to ASL.

The main scope of the project consisted of the following;

- 1- Establishment of 226 computer labs in as many educational institutions for girls. This setup would have an annual capacity of providing ICT exposure and facilities to more than 100,000 girl students.
- 2- Each lab was to be equipped with computers (count as per availability of space), multifunction laser printer, biometric attendance, wireless LAN, high speed internet and UPS for power backup.

- 3- Provision of furniture, tables for computers & printer and chairs, to be provided at Type A schools where ample space was available for computer lab.
- 4- Provision of 40" LED television connected to a PC in designated classrooms of Type B schools.
- 5- Identification plaques for all labs.

3.3 Hiring of Human Resource

While going through a transparent hiring process, Pak Multi services hired 202 highly qualified ICT teachers for 226 institutes. Type A schools were assigned dedicated teachers, whereas in certain type B schools, one teacher was assigned teaching responsibility in two nearby schools.

3.4 Training of human resource

USF selected a group of teachers on merit who were designated as Master Trainers. They were trained by Microsoft, UN Women and Facebook. The course contents of these trainings encompassed syllabus, entrepreneurship and teaching methods. Details are as follows:

- A Training of Trainers was conducted by Microsoft on basic ICT skills to be taught to students. Microsoft also developed the curriculum for primary classes.
- UN Women trained the trainers on various aspects of Entrepreneurship. A workshop for these teachers was also conducted.
- Facebook conducted training on Digital Safety and Entrepreneurship under the auspices of its renowned initiative "SheMeansBusiness".



Figure 2: ICT Teachers' Training

The implementation of Phase II was completed on 10th August 2018 and Phase I was completed a week later, on 17th August 2018.

4. IMPACT ASSESSMENT OF THE PROJECT

After successful operation of several months, an impact assessment activity was initiated. A methodology described in articles 4.1 through 4.4 was employed to assess the impact of usage of IT facilities in these labs on students' lives.

4.1 Online survey

Online survey forms were designed and placed on USF server. Students, Senior Computer Teachers (SCTs) and Principals of all FDE institutions were invited to fill in the survey forms online from 14th May 2019 till 3rd June 2019. After data acquisition and filtering, it was noted that a total of 1568 students, 207 SCTs and 179 Principals/Heads of institutions had responded to the survey. These responses were analyzed and given the shape of a report.

Following were the fixtures of the survey:

Survey Forms Activation Date	14-May-19		
Survey Forms Deactivation Date	03-Jun-19		
Students Participation Count	1568	Count of Questions for Students	11
SCTs Participation Count	207	Count of Questions for SCTs	13
Principals Participation Count	179	Count of Questions for Principals	9

Table 1: Survey participants

4.2 Data acquisition & analysis

The filled-up questionnaires contained rich information. USF team members were assigned the task of analyzing this data and tabulating their responses in graphical format. This task was completed with a painstaking effort.

4.3 Field visits

Two USF colleagues visited 50 schools, spread across rural and urban ICT. Their objective was to audit and inspect the functionality of these labs. In addition to this, they were asked to randomly interview students and SCTs about their experience and opinion of the program. These visits lasted from 8th May 2019 till 21st May 2019. The list of schools visited is given in Annexure II. The Labs were found to be operational with required BoQ and internet connectivity.

4.4 Report

The final task was to prepare an Impact Analysis Report, which was prepared in graphical and text formats. This task was completed on 21st September 2019, encompassing all aspects of the impact analysis study.

IMPACT OF THE PROJECT



“My interest in computer sciences increased a lot after I got access to this lab because it gave me an opportunity to learn the practical side of IT. Now I can perform all the basic computer operations and MS office tools.”

Aeman Noor, student of class 9th

“I got exposure of internet via this lab. I come from a small village and had no access to computer or internet prior to this lab. I have learnt basic Computer operations, MS office and Internet browsing during this lab.”

Hina Ali, student of class 10th

5. STUDENTS' RESPONSE

The survey questionnaire designed for impact analysis was aimed at covering multiple aspects of how these IT labs are influencing students. Students actively participated and their feedback formed the basis of this analysis. The following table mentions the number of students who participated in the survey:

Standard	Student Participation Count	Student Participation %age
Primary (Classes 5,6)	102	6.51
Middle (Classes 7,8)	672	42.9
SSC Matric Science Group	556	35.5
SSC Matric Humanities Group	8	0.51
HSSC Science General Group (ICS)	96	6.12
BS Computer Sciences	91	5.8
BS Psychology	32	2.04
BS Mass Communication	11	0.7

Table 2: Students' Participation

The questions were related to academic interests, activities in the lab and personality development. In addition, there were questions on how students gauged teachers' interest and about their feedback for improvement. The responses were reproduced in graphical form whose analysis provided ample grounds to reach conclusions on the impact of the project. The main target of the survey were students from grade 5 till intermediate level, however, some of these institutions offer graduate level studies and among the survey respondents are 134 undergraduate students. Their feedback has also been incorporated in this study.

All questions were mandatory, and some had the option of multiple feedback. Due to responder's ability to choose multiple answers to certain questions, the combination of responses to some questions exceeded the number of respondents.



Figure 3: Students at a lab

Some of the most unique and interesting data sets are:

5.1 LEARNING / IMPROVEMENT ASPECTS

The aim of any educational endeavor is to provide a conducive environment for learning along with teachers with the right skillset and teaching abilities. Some of the questions were targeted to gauge students' response on learning environment.

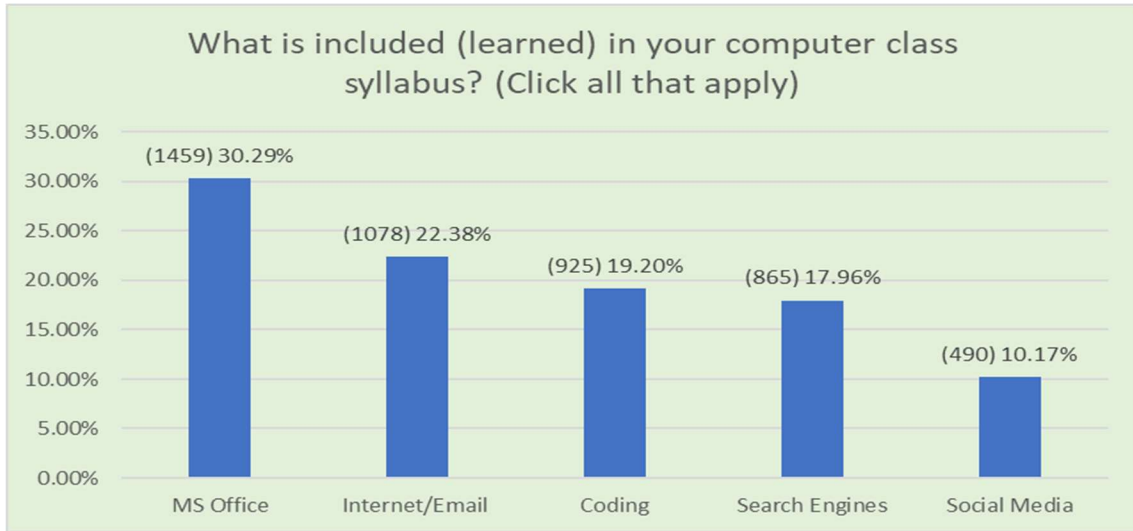


Figure 4: Students response on Syllabus

The syllabus is set to work for both primary and secondary level schools. The major part of the syllabus comprises of MS office, coding, internet, email and social media. The next wave of education promises to breakaway from traditional teaching modes. Internet seems to be the harbinger of this change through search engines, social media and online instruction.

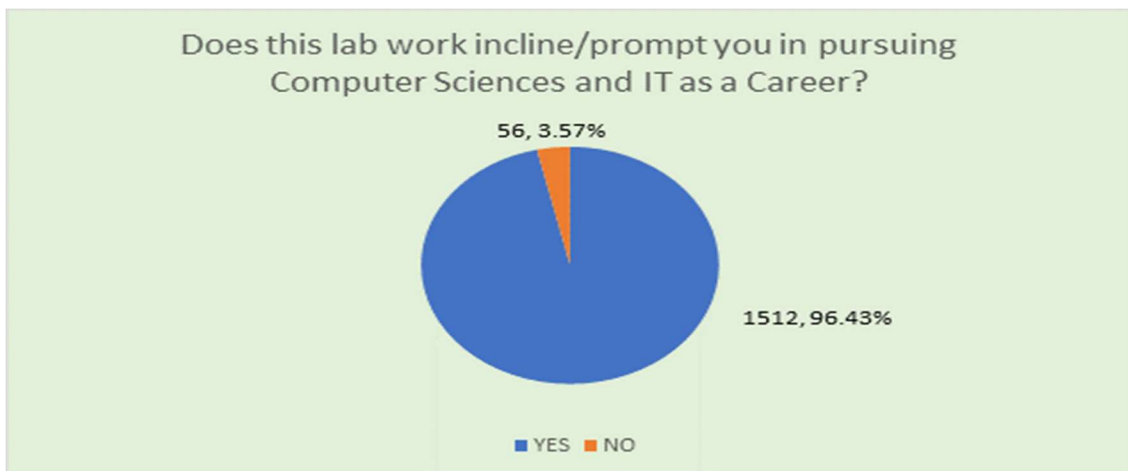


Figure 5: Students response on pursuing IT career

Figure 5 tells us that this program is inspiring students to pursue ICT as a career. Technology is rapidly evolving, and it is anticipated that in the near future, machines would start competing

with humans for most of the routine, repetitive jobs. For future generations, menial strength would not be that important as would be intelligence and creativity. An education and career in ICT is a sound basis for keeping machine intelligence at bay. Looking at the technological horizon, the fourth industrial revolution has started taking roots. Its main enablers include high speed communication technologies such as 5G, Internet of Things (IoT), Artificial Intelligence (AI), Augmented Reality (AR) and robotics. It is expected that soon, cyber physical systems would make their presence felt.

5.2 OUTCOME OF TRAINING

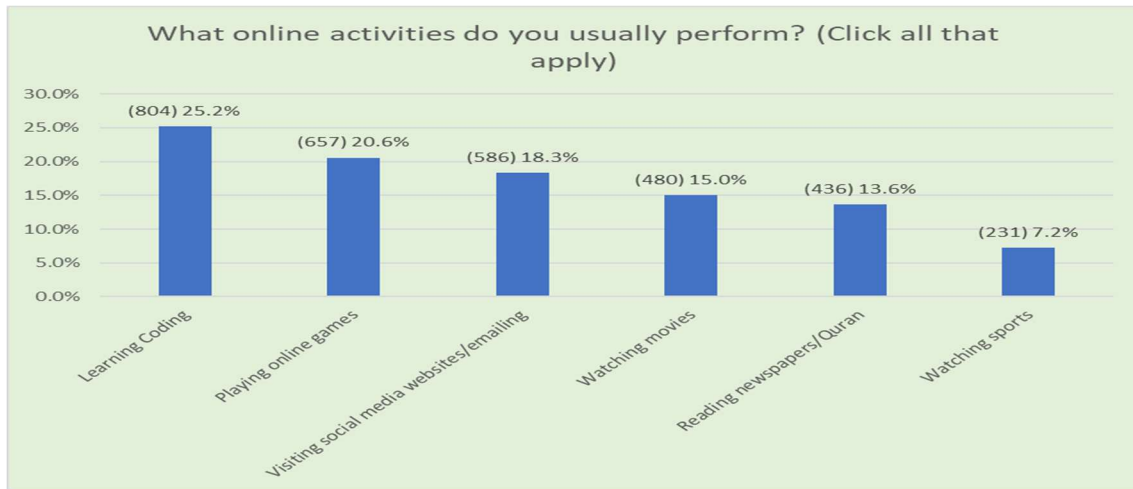


Figure 6: Students response on their online activities

Figure 6 indicates that one quarter of the students are engaged in online learning activities. More than 50% of the responses indicate that they play online games or surf the internet for recreational activities. This shows positive and productive engagement.



Figure 7: Students response on course meeting their academic requirements

Almost all students agree that they are benefiting from this project. This facility is meeting their current academic requirements.

Another question asked students about how this course is helping them in their personality development. Most students believe that with access to information technology, they have gained more knowledge and feel more confident as they have greater exposure to the world through learning.

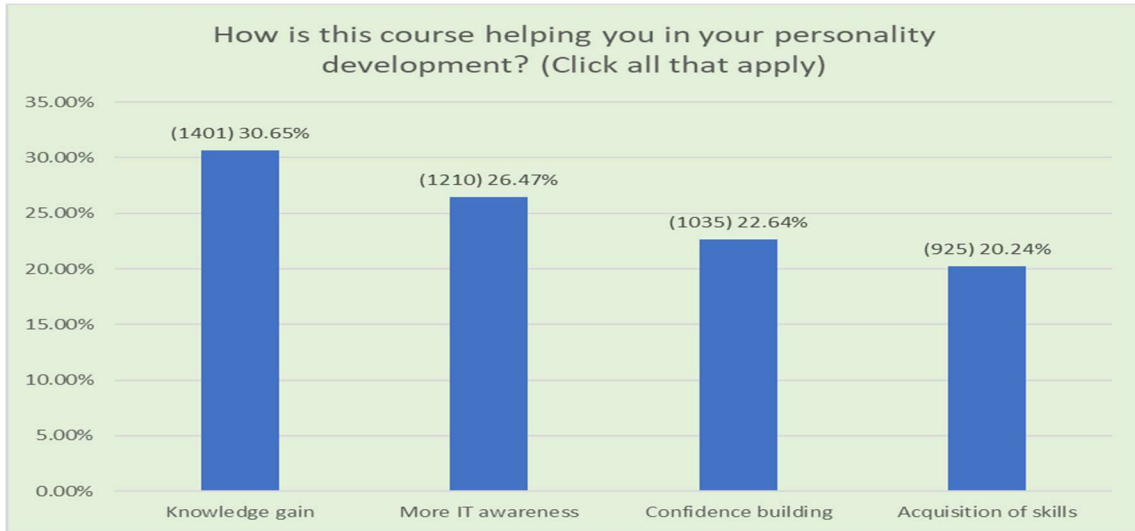


Figure 8: Students response on how this course is helping them in personality development

20% responses portray that this course has helped students in acquiring new skills. The responses indicate positive effects of the course in contributing to their knowledge and awareness in addition to building their confidence levels.



Figure 9: Students in IMCG, Tharlai

5.3 FEEDBACK / OPINION

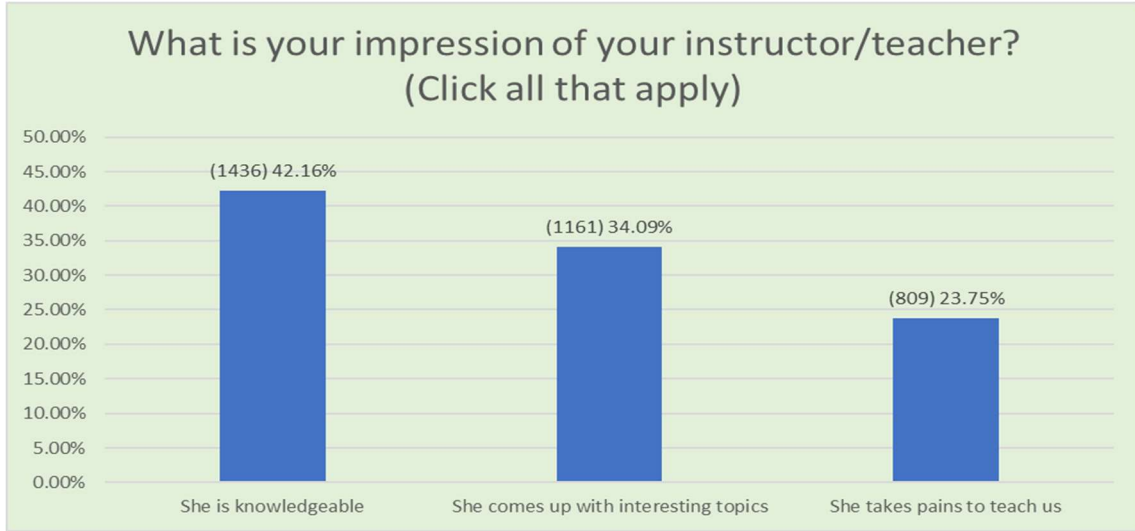


Figure 10: Students' impression of their teacher

Almost all students acknowledge the expertise of their IT teachers and hold a positive opinion of their teacher's teaching abilities. The encouraging factor is that 34% responses indicate that teachers come to the class with interesting topics. ICT is about generating interest in innovative ideas and this response goes on to prove that the teachers' efforts are inclined towards achieving this objective.

As part of students' suggestion for improvement in training, the main responses echoed the notion that students are showing unflinching interest in the course.

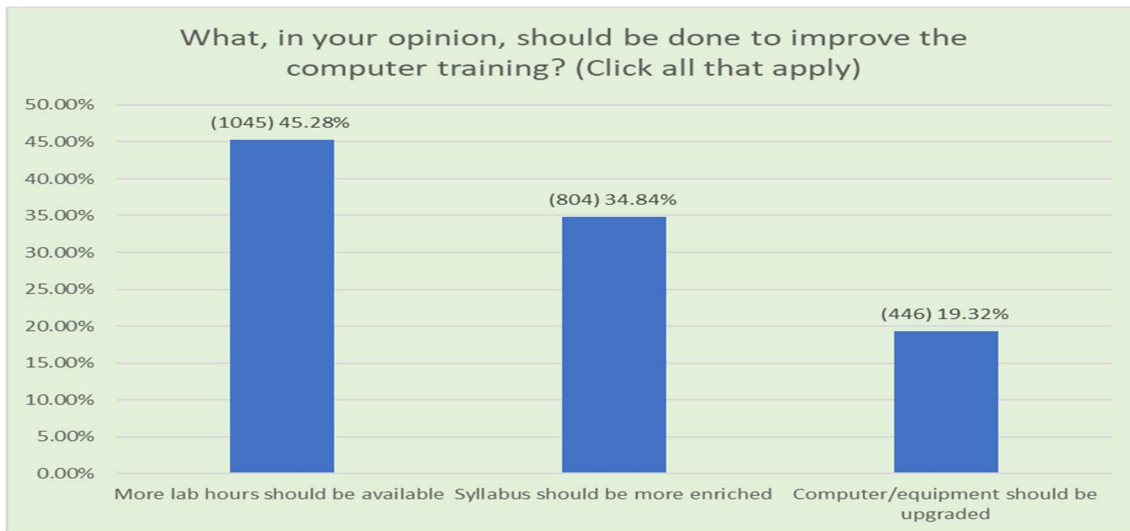


Figure 11: Students' suggestions for program improvement

Most of the students are eager to spend more time in the lab. One third believe that the syllabus should be updated with richer content. About one fifth of them suggest that the equipment needs to be upgraded.

5.4 STUDENTS' AWARENESS WITH ICT

Two questions on the survey tended to get an insight into students' accessibility to computers and internet at home. As expected, most had this access. Still a quarter of respondents conveyed that this access is not available to them at home.

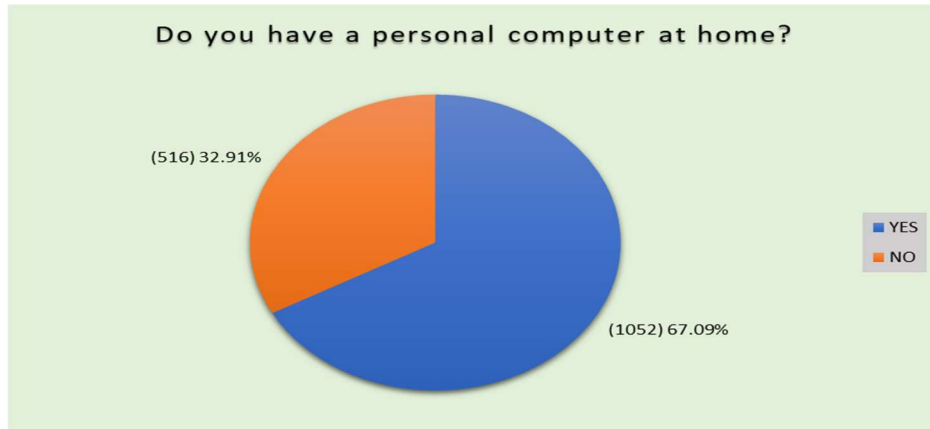


Figure 12: Students response on having PC at home

Two-third of the students have access to computer at home.

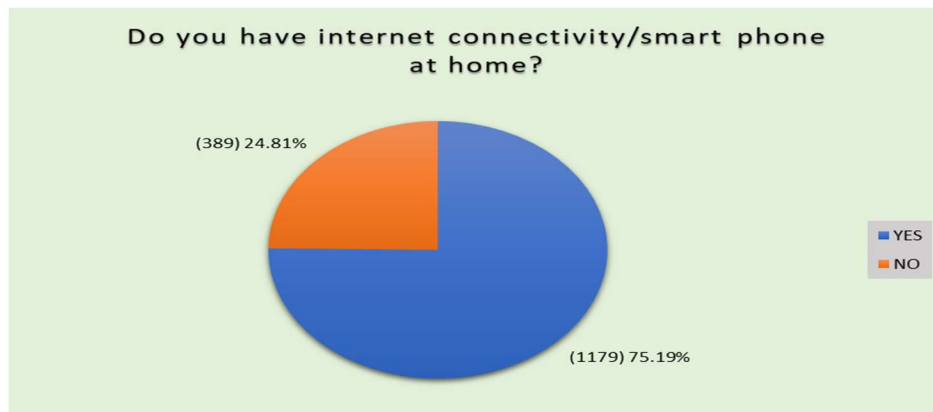


Figure 13: Students response on having internet access at home

Three quarter of the students have access to internet and/or smartphone at home. Internet is the driving force of the rapidly changing technological horizon. Still, finding that a healthy percentage of students are without internet access at homes is disconcerting. Although it is outside the scope of this survey, it is safe to assume that the reason for not having a PC or internet enabled smart phone at home may be possibly due to poor buying power of these households.

IMPACT OF THE PROJECT



“I feel honored in teaching students from under privileged class who did not have access to ICT prior to this lab”.

Safia Shabbir, Senior Computer Teacher IMSG F-8/1

6. TEACHERS' RESPONSE

Feedback from teachers was also solicited about the program. Like students, an online questionnaire was sent to them. Teachers from all centers responded and their responses have been captured in trailing text and graphs.

6.1 COURSE CONTENT

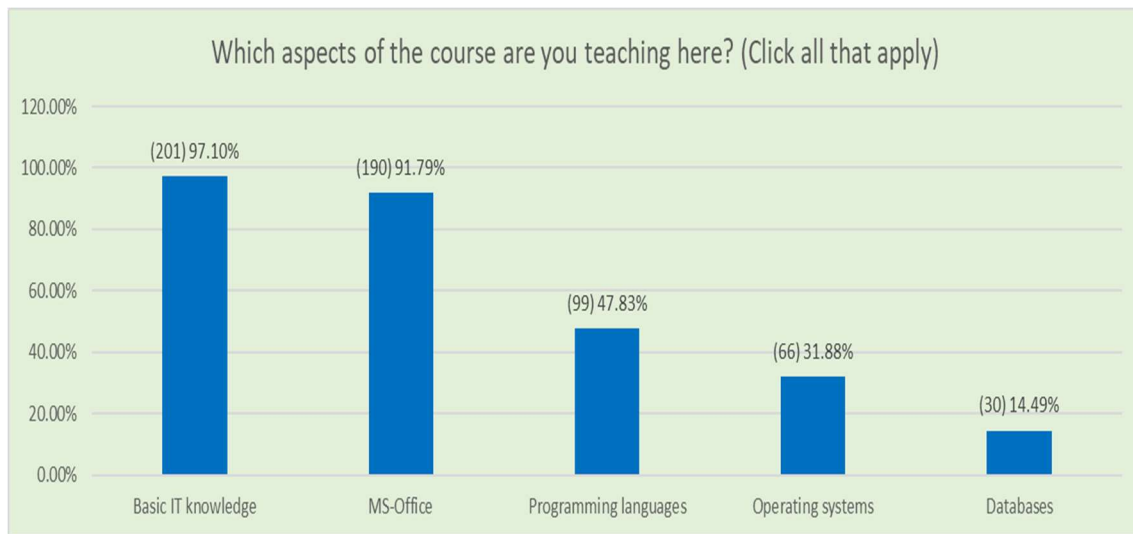


Figure 14: Response of Teachers on course content

The course is designed for students varying from primary to secondary schools. Majority of the teachers are teaching basic IT and computer skills including MS Office. Moreover, use of internet, email, programming languages and databases are also part of their teaching responsibility.



Figure 15: Students in the lab

6.2 ARE STUDENTS BENEFITTING FROM THE COURSE?

The success or failure of a project can be gauged from the benefits it is imparting to the recipients. Teachers were asked to identify whether or not the students were benefitting from the course.

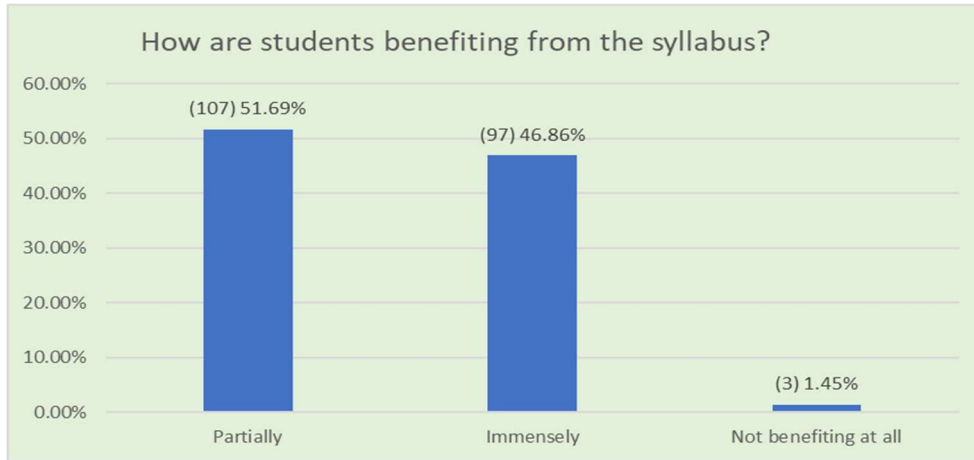


Figure 16: Response of Teachers on students benefitting from the course

More than 98% of the responses from the teachers indicate that the course is imparting benefits to the students.

6.3 SHORTCOMINGS OF THE PROGRAM

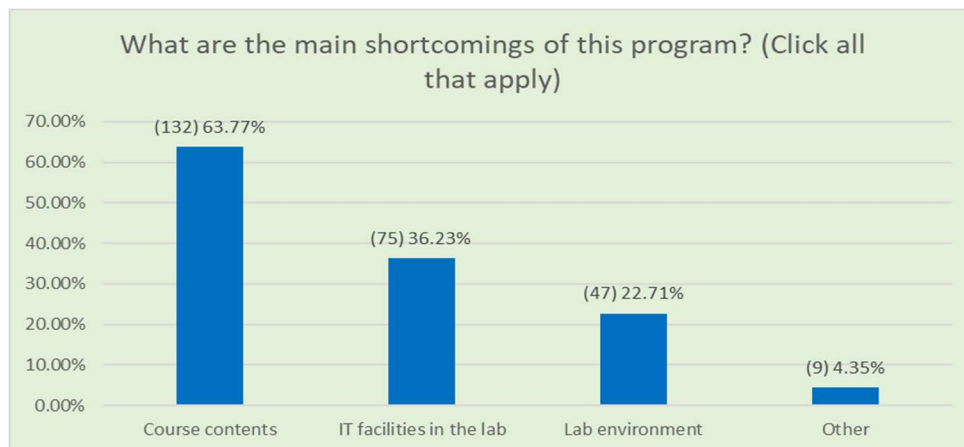


Figure 17: Teacher Response on main shortcomings of the program

Most teachers think that the course content needs revision. They are right on target as nothing in the world is changing as fast as technology. Whereas the aim of this initiative is to provide more IT exposure to students, as an added feature, more enriched and contemporary additions to the syllabus could be brought about. Teachers are of the view that a more interactive and an enriched syllabus can broaden the students' learning horizon. Some teachers have responded that IT labs should be equipped with better facilities such as faster internet etc.

6.4 IMPROVEMENT/SUGGESTIONS FOR PROGRAM

The response to the question for improvement revolved around just one point – enrichment of course content. This echoes the teachers’ feedback on the question of where improvement is needed in the program.

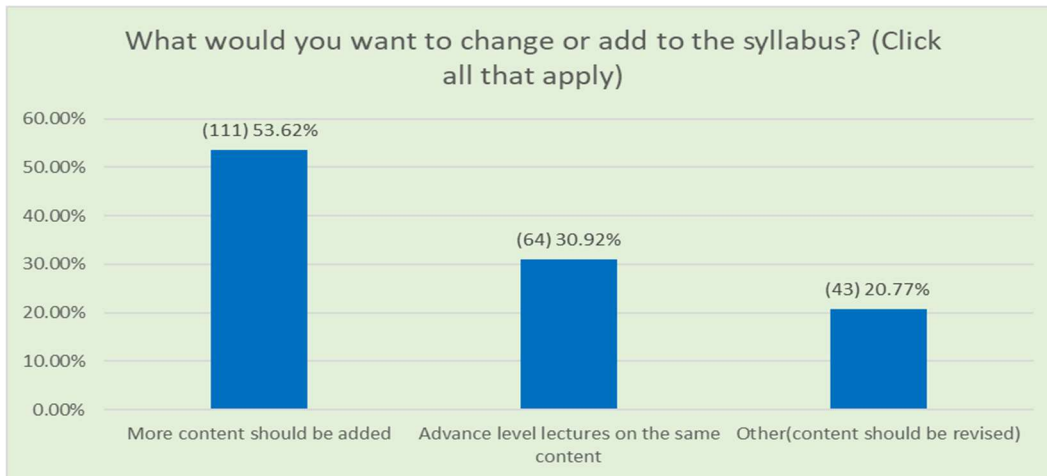


Figure 18: Teacher Response on Suggestion about change in syllabus

6.5 PERSONALITY DEVELOPMENT

Education has multiple pronged objectives. The main aim is inculcating awareness and knowhow among students. Another important aspect is to equip students with confidence to face the world.

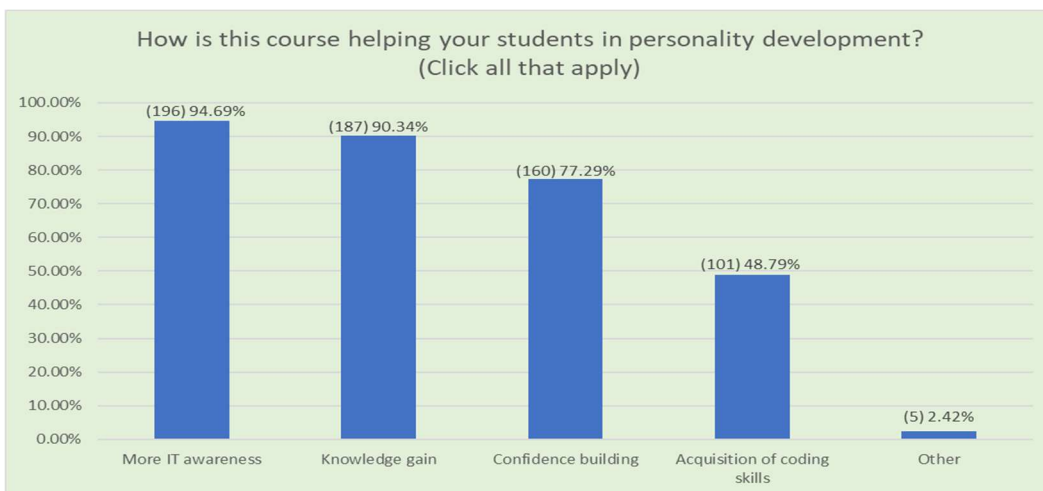


Figure 19: Teacher Response on student personality development

Most teachers think that this course has impacted their students in very positive way, improving their IT knowledge & awareness, boosting their confidence and helping them in acquiring new skillsets.

6.6 ADVANTAGES OF THE PROGRAM

This question was put into the survey to gauge whether the perceived and actual outcomes of the program match or are off target.

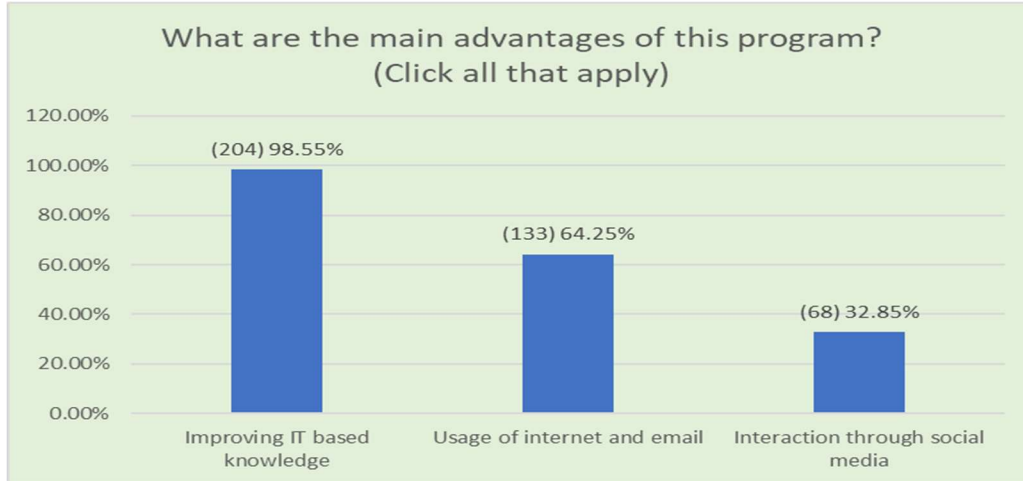


Figure 20: Teacher Response on advantages of program

All teachers think that this program has helped improving IT knowledge of the students. They seem to have witnessed an improvement of IT skills through use of internet, social media and emails. The perceived outcomes of this program were to equip students with IT knowledge and to see them apply newly gained knowledge to use. Teachers' feedback to this question seems to be aligned with initial program objective.

"I teach primary school students who are first time computer users. They are now doing various activities like drawing in MS Paint and playing interactive games. They have excelled with the passage of time."

Areeba Sohail, SCT IMSG, Pindori Sayedan

IMPACT OF THE PROJECT



“The establishment of computer lab and induction of IT teacher is a welcome addition to the institute”.

Mrs. Rakhshanda Manzoor, Principal IMCG
Hummak

“The students are benefitting immensely from this program. We need to retain both the lab and IT teacher”.

Mrs. Anila Irshad, Principal IMSG I-VIII Dharek
Mohri

7. PRINCIPALS' RESPONSE

Principals of 179 schools responded to the survey. This corresponds to 79% response rate, which is a healthy statistic. Their response was mostly positive about the program. Some highlights of the survey are:

7.1 FEEDBACK ABOUT TEACHERS

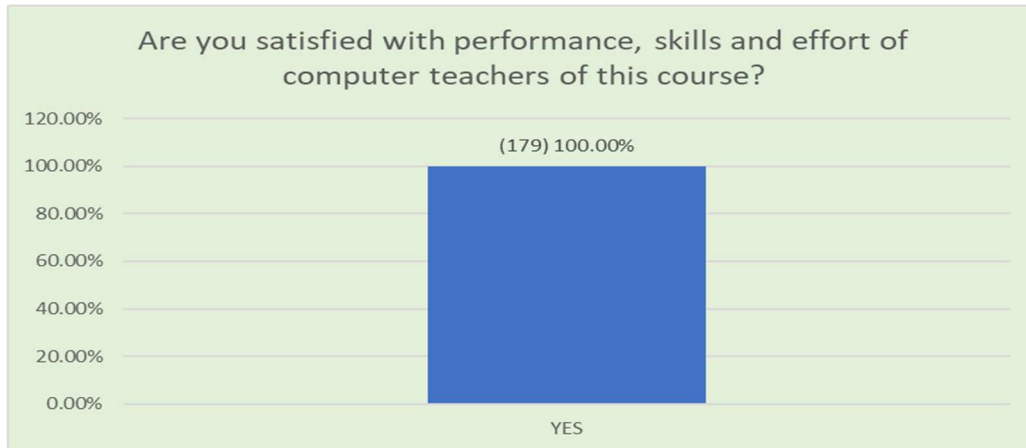


Figure 21: Principal Response on performance of the teachers

All institute heads are satisfied with the skills of IT teachers and the efforts they are putting into their work.

7.2 RETENTION OF COMPUTER LAB

In response to a question regarding Principals' take on how important it is to retain the PC lab and teachers, all Principals agreed that it would be in the institute's best interest to retain both the PC lab and the teacher. Herein lies a problem as the current three years contract with teachers would expire on 31 December 2020.



Figure 22: Principal's Response on importance of lab

7.3 USES OF PC LAB

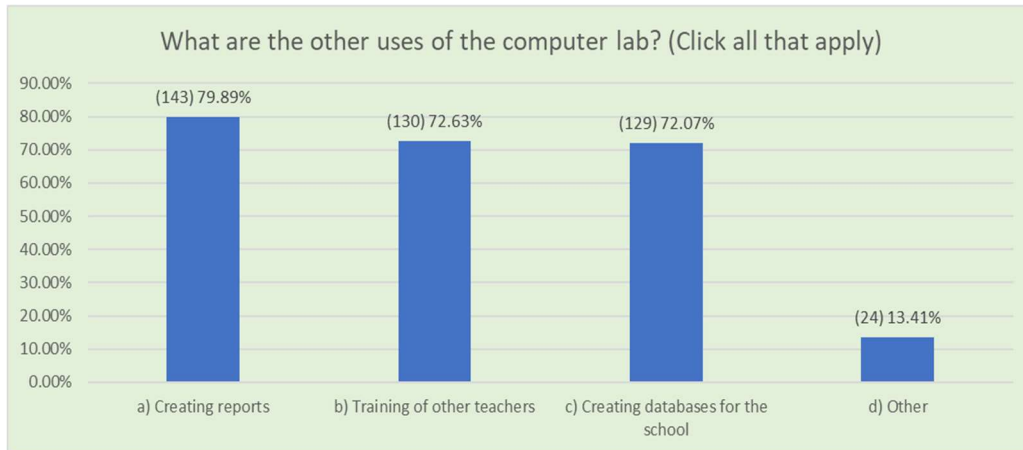


Figure 23: Principal's Response on other uses of lab

According to majority of principals, the lab is not only useful for taking computer classes, it has been helpful in creating reports, training other teachers in the school and creating database for the school as well.

8. SOME TAKEAWAYS FROM FIELD SURVEYS



IMPACT ASSESSMENT RESULTS ICT FOR GIRLS PROGRAM

COMPUTER LABS IN 226 EDUCATIONAL INSTITUTES

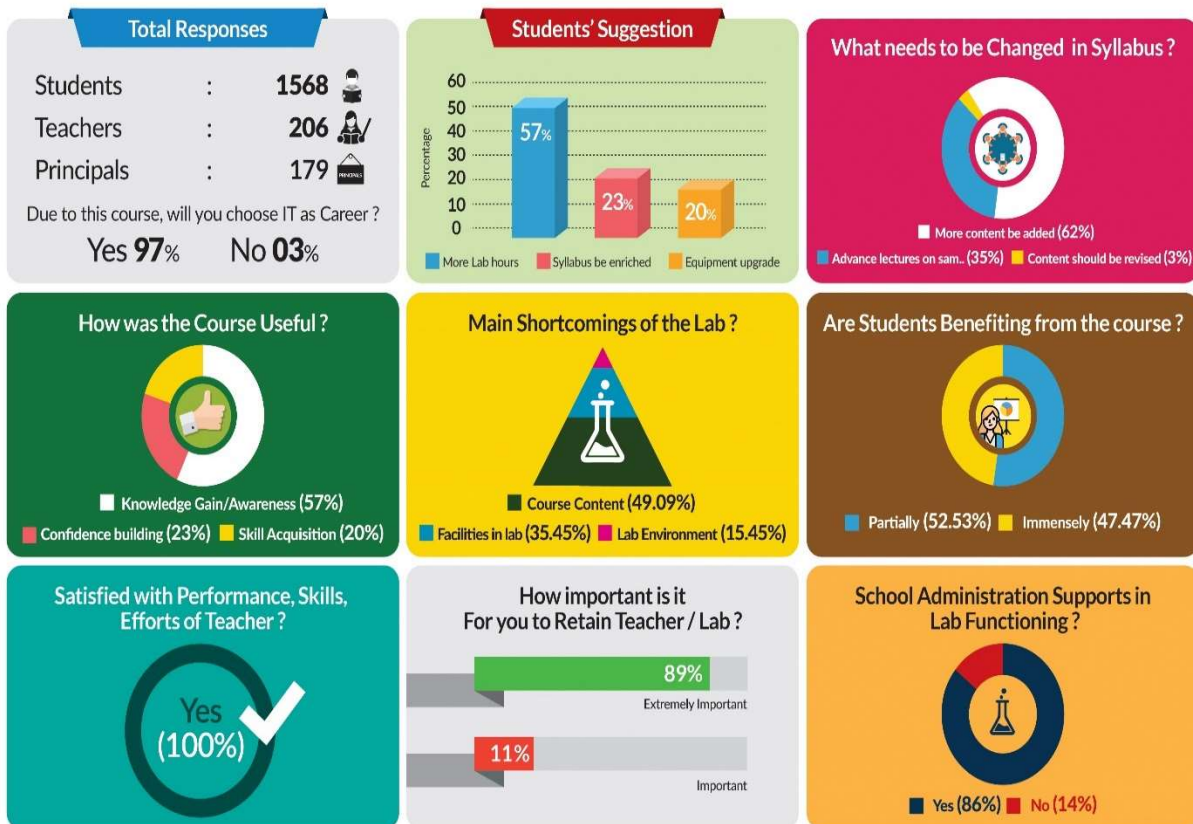


Figure 24: Important survey results

Figure 24 exhibits some important outcomes of the survey at a glance. These results are a mix of various attributes. Students appear to be realizing that ICT knowhow is about using computers and technology as tools to enrich their knowledge. ICT enables self-paced learning through internet and other powerful learning tools. The learning process is one of interaction and collaboration and makes attaining of knowledge a fun activity.

Some takeaways of the survey are given below:

<ul style="list-style-type: none">• Students have shown an unflinching interest in gaining more knowledge.
<ul style="list-style-type: none">• Attending the course is need driven as most students are using IT knowledge to help them in completing their various assignments.
<ul style="list-style-type: none">• In primary schools, computer is not taught as a subject hence majority of students did not have any IT knowledge before this project.
<ul style="list-style-type: none">• The use of computers and internet has made a positive impact on the students and has equipped them with knowledge and confidence.
<ul style="list-style-type: none">• Enriched and extensive course contents have been recommended by both students and teachers.
<ul style="list-style-type: none">• Students have shown higher interest in IT focused career. This would help in broadening career choices for students.
<ul style="list-style-type: none">• Addition of IT teachers to teaching staff is considered a positive step by Heads of institutions as it has strengthened the institutes' IT human resource.
<ul style="list-style-type: none">• Internet connectivity is a major take off for teaching aids and online research.
<ul style="list-style-type: none">• School administrations believe that these labs are highly beneficial for students and want to retain this facility.
<ul style="list-style-type: none">• Type B schools should have a separate room for establishment of IT lab.

Table 3: Some takeaways from the survey

The takeaways are encouraging. In general, students have found IT to be a useful platform; one that provides for greater and quicker learning.

9. SHORTCOMINGS AND SUGGESTIONS

While the Impact Analysis exercise provided some useful insights about the advantages of the program, it also highlighted certain flaws. These are elucidated below along with suggestions for improvement.

9.1 SHORTCOMINGS

Students, SCTs and Principals/Heads of the institutions gave some recommendations for improvement and betterment in this initiative. Their feedback can be summarized in the following lines:

- All sections (students, SCTs, Principals) pointed out that syllabus is mostly theoretical. They were of the view that hands on content needs to be added to the syllabus.
- Students complained about few computer classes in weekly timetable, which should be increased.
- Internet speed is slow in some institutions.
- In type B schools, IT facilities are not as good as type A schools, which limits students' involvement in hands on learning.
- ICT teachers are being assigned additional administrative schoolwork which at times, hinders the spirit of this program.
- Principals pointed out that majority of students of type B schools cannot afford to buy computer books.
- Principals and teachers also raised concern about the future of this project after the expiry of three years contract.
- Retention of jobs of IT teachers after three years was another major concern of both teachers and principals.

9.2 SUGGESTIONS

Based on shortcomings and reservations highlighted by survey respondents, the following is suggested to make this endeavor more successful:

- Service provider should ensure better internet connectivity so that students can get maximum benefit and learn from online exposure.
- Syllabus should be enriched with activity-based modules.
- Provision of free of cost books in type B schools should be considered for needy students.
- Principals and school administration should only assign lab related teaching responsibilities to SCTs so that their focus remains targeted.
- Considering the benefits of this facility, FDE should consider taking in SCTs on their teaching staff after their current contract expires.
- In type B schools, FDE should arrange a room for IT lab.
- School administrations should rectify minor complaints on their own as these do not fall in service provider's domain.

10. CONCLUSION

A mother's lap is considered as the first classroom. A young child's intellect is shaped by its mother's coaching and influences the child for life. Women, notably mothers, play a central role in household decision making in any society. This has ensured the stability, progress and long-term development of nations {6}. Knowledge, learning and skills are as important for women as they are for men.

"ICT for Girls" initiative aims at imparting IT based skills to Pakistani women. The idea is to make girls self-reliant and useful earning members of their families and contributors to the society. Establishment of 226 state-of-the-art computer labs in FDE girl institutes is a start towards the achievement of women empowerment goals envisaged by various national and international organizations. UNO has gone a step further by incorporating these as Sustainable Development Goals. In the longer run, projects such as these will help women in achieving aims and ambitions of poverty alleviation, better health, decent work offers and economic growth leading to sustainable, self-reliant and educated communities. It is worthy of note that girls in similar USF initiatives have found the platform for self reliance. They have indulged in IT related jobs and online teaching; a few have entered the world of entrepreneurship and started online businesses.

Stereotyping, coupled with societal attitude, have traditionally confined women to household responsibilities. With time, technology has introduced a positive change in thought process. This has resulted in acceptability of the idea that women can enter technology and ICT workforce. As a result, various job and entrepreneurship options have opened up to women. Armed with ICT knowledge, students of the 226 institutes have the potential to break social shackles and to become positive contributors to national welfare.

Senior Computer Teachers have expressed that this facility has motivated the students. Apart from syllabus, students have shown interest in current affairs through online information sources and their interaction with social media websites has increased. Likewise, Principals of these institutions are of the view that these computer labs should be retained. They believe that for students, particularly those who cannot afford computers, this facility is providing an opportunity to effectively utilize ICT for curriculum and research requirements.

In technology and ICT sectors, women participation tends to follow a tapered model. Their presence thins out as we approach the top. Although women constitute 40% of the global workforce, only 6% of the CEOs of the top 100 global technology companies are women. This is despite a research demonstrating that women CEOs provide higher and better shareholder value over time {7}. It is estimated by UNESCO that gender equality in ICT sector can open up a market of USD 50-70 billion {ibid}.

USF's effort at establishing 226 PC labs in FDE educational institutions is a small endeavor that is aimed at improving this percentage. But even small steps have the potential of achieving lofty goals. This is what we hope for and this is what we shall remain committed to.

11. REFERENCES

- 1- <https://countrymeters.info/en/Pakistan>
- 2- <https://www.dawn.com/news/1452316>
- 3- <https://www.globalcitizen.org/en/content/girls-pakistan-education-report-2018/>
- 4- <https://www.unicef.org/pakistan/press-releases/international-day-girl-unicef-calls-improving-employability-skills>
- 5- <https://tribune.com.pk/story/1370159/girls-schools-ict-rural-areas-get-computer-labs/>
- 6- <https://globalvolunteers.org/global-role-of-women/>
- 7- <http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/images/GWIDanieleCastle.pdf>

12. ANNEXURE 1

Questionnaire for Students

Student Name: _____

Class: _____

Email: _____

Discipline: Biology Computer (For Matric and HSSC students)

Name and address of institute: _____

Questionnaire

- 1) How many hours per week do you spend in the computer lab?
 - 1 hour
 - Up to 3 hours
 - More than 3 hours
 - Do not attend the lab

- 2) What is included (learned) in your computer class syllabus? (Click all that apply)
 - MS Office
 - Coding
 - Internet/Email
 - Social Media
 - Search Engines
 - Any other _____

- 3) What online activities do you usually perform? (Click all that apply)
 - Reading newspapers
 - Watching movies
 - Visiting social media websites
 - Playing online games
 - Watching sports
 - Learning Coding
 - Any other _____

- 4) How is this course helping you in your personality development? (Click all that apply)
 - Knowledge gain
 - More IT awareness
 - Confidence building
 - Acquisition of skills
 - Any other _____

5) Is this course helping you in meeting your educational/academic requirements?

YES

NO

6) What is your impression of your instructor/teacher?

She is knowledgeable

She takes pains to teach us

She comes up with interesting topics

Not Interested

7) What, in your opinion, should be done to improve the computer training?

Syllabus should be more enriched

Computer/equipment should be upgraded

More lab hours should be available

Other

8) Does this lab work incline/prompt you in pursuing Computer Sciences and IT as a Career?

YES

NO

9) How many computers are generally operational during your computer class?

All computers are operational

Majority of the computers are operational

Majority of the computers are not operational

None of the computers are operational

10) Do you have a personal computer at home?

YES

NO

11) Do you have internet connectivity/smart phone at home?

YES

NO

Questionnaire for Teachers

Name of instructor: _____

Email: _____

Name & address of institute: _____

1. What is your IT expertise? (Click all that apply)
 - Basic level (word processing, presentations, spreadsheets)
 - Intermediate level (HTML, web design, Basic app development)
 - Advance level (Java, C++, Python)
 - Networking
 - Databases

2. Which aspects of the course are you teaching here? (Click top 3 at the most)
 - Basic IT knowledge
 - MS-Office
 - Programming languages
 - Operating systems
 - Databases
 - Other

5. How are students benefitting from the syllabus?
 - Immensely
 - Partially
 - Not benefitting at all

6. Which resources / computer aids do you use for teaching?
 - School Computer Syllabus
 - Online Teaching Tools
 - Other IT Books
 - Other _____

7. How responsive do you find your students?
 - Highly responsive
 - Moderately responsive
 - Not responsive

8. What are the main advantages of this program? (Click all that apply)
 - Improving IT based knowledge
 - Usage of internet and email
 - Interaction through social media
 - Other (Please specify) _____

Questionnaire for Heads/Principals of institutions

Name: _____

Email ID: _____

Name of Institute: _____

Questionnaire

1. Do you get appropriate support from USF or its designated vendor, PMS for smooth functioning of Lab? (also put in teacher questionnaire)

YES NO PARTIALLY

2. What is the quality of internet connectivity to IT lab?

Good SATISFACTORY POOR

3. What are the main advantages of this program? (Click all that apply)

- Improving IT based knowledge
- Usage of internet and email
- Interaction through social media
- Other (Please specify) _____

4. What are the main shortcomings of this program?

- Course contents
- IT facilities in the lab
- Lab environment
- Other (Please specify) _____

5. Are you satisfied with performance skills and effort of computer teachers of this course?

YES NO

6. How important is it for you to retain Teacher/computer lab for your institute in future?

- Extremely important
- Important
- Not important

7. Do you encourage teachers/students of subjects other than computer studies to use this lab for research and reference studies?

YES

NO

8. What are the other uses of the computer lab? (Click al that apply)

- Training of other teachers
- Creating databases for the school
- Creating reports
- Others _____

9. How do you rate this program in terms of utilization and performance?

- Excellent
- Good
- Improvement is needed
- Not satisfactory

13.ANNEXURE 2

S. No.	EMIS No	School Name
1	445	IMSG (I-X), NHC
2	448	IMSG (I-X) KURRI
3	450	IMSG (I-X) PHULGRAN
4	456	IMSG (I-X) NOORPUR SHAHAN
5	506	IMSG (I-X), DHOKE GANGAL
6	610	IMSG (I-X) SUNGJANI ,
7	614	IMSG (I-X) TARNOUL ,
8	617	IMSG (I-X) NAUGAZI ,
9	723	IMSG (I-X), NEW SHAKRIAL
10	538	IMSG (I-VIII), PTC SIHALA
11	725	IMSG (I-X), JABA TELI
12	447	IMSG (I-X) GOKINA
13	451	IMSG (I-X) RAWAL TOWN
14	452	IMSG (I-X) TALHAR
15	454	IMSG (I-X) LAKHWAL
16	458	IMSG (I-X), SAID PUR
17	464	IMSG (I-VIII), BHARA KAU
18	469	IMSG (I-V), (NCH) CHAK SHEHZAD
19	477	IMSG (I-V), BHARA KAU, NAI ABADI
20	467	IMSG (I-VIII), SANJALIAN
21	505	IMSG (I-X) NARA SYEDAN
22	511	IMSG (I-X) GAGRI
23	525	IMSG (I-V), RAWAT
24	512	IMSG (I-X) UPRAN GOHRA
25	611	IMSG (I-X) JHANGI SYEDAN ,
26	624	IMSG (I-VIII), PIND PARACHA
27	626	IMSG (I-VIII), DHREAK MOHRI
28	618	IMSG (I-X) BADIA QADIR BUKSH ,
29	629	IMSG (I-VIII), SARAI KHARBUZA
30	652	IMSG (I-V), DHOKE SULEMAN ,
31	722	IMSG (I-VIII), KHANNA DAK
32	627	IMSG (I-X), MAIRA BERI
33	744	IMSG (I-V), ALI PUR FRASH (M.V)
34	504	IMSG (VI-X) SIHALA
35	515	IMSG (I-X) RADIO COLONY RAWAT
36	527	IMSG (I-V), HERDOGHER
37	623	IMSG (I-VIII), DHOKE JOURI
38	628	IMSG (I-VIII), DHOKE PARACHA

39	655	IMSJ (I-V), MHS, D-17
40	457	IMSG (I-X) SHAHDRA KHURD
41	459	IMSG (I-X), MALOT
42	460	IMSG (I-VIII), SHAHDRA KALAN
43	461	IMSG (I-VIII), BAIN NALA
44	463	IMSG (I-VIII), MOHRA NOOR
45	465	IMSG (I-VIII), BOBRI
46	470	IMSG (I-V), DHOKE JERRANI
47	476	IMSG (I-V) (MV), SHAHZAD TOWN
48	514	IMSG (I-VIII), MOHRI RAWAT
49	516	IMSG (I-VIII) BHANGRIL KHURD
50	517	IMSG (I-VIII), RAJWAL
51	518	IMSG (I-VIII), DHALIALA
52	519	IMSG (I-VIII), NIAZIAN HUMAK
53	523	IMSG (I-VIII), MIANA THUB
54	524	IMSG (I-VIII), JANDALA
55	531	IMSG (I-V), HOON DHAMIAL
56	532	IMSG (I-V), GOHRA MAST
57	534	IMSG (I-V), HUMAK
58	536	IMSG (I-V), BOORA BANGIAL
59	537	IMSG (I-V), MOHRI MUGHAL
60	539	IMSG (I-V), PAK PWD COLONY
61	573	IMS (I-V) CBR Colony
62	574	IMS (I-V) Sawan Garden
63	625	IMSG (I-VIII), NOON
64	648	IMSG (I-V), BHEKA SYEDAN ,
65	649	IMSG (I-V), PIND PARIAN ,
66	654	IMSG (I-V), I-14/3
67	711	IMSG (VI-X) CHIRAH
68	742	IMSG (I-V), TARLAI, (No-2)
69	743	IMSG (I-V), TAMMA
70	749	IMSG (I-X) Darkala
71	751	IMSG (I-V), TUMAIR
72	754	IMSG (I-V), CHIRAH
73	755	IMSG (I-V), KALIA
74	756	IMSG (I-V), JHANG SYEDAN
75	759	IMSG (I-V), NILORE
76	760	IMSG (I-V), PUNJGRAN
77	765	IMSG (I-V), ALI PUR FARASH TOWN
78	739	IMSG (I-V), SHAKRIAL
79	473	IMSG (I-V), PIND BEGWAL, DANNA
80	530	IMSG (I-V), SIHALA MIRZIAN
81	651	IMSG (I-V), DHOKE HASHOO ,

82	471	IMSG (I-V), KOT HATHIAL, NAI ABADI
83	474	IMSG (I-V), SHAH PUR
84	478	IMSG (I-V), MULPUR
85	479	IMSJ (I-V), MAIRA MALPUR,
86	520	IMSG (I-V), HUMAK (M/T)
87	521	IMSG (I-V), PEIJA
88	528	IMSG (I-V), MUGHAL
89	529	IMSG (I-V), SIHALA
90	533	IMSG (I-V), LADHIOT
91	535	IMSG (I-V), GHANGOTA SYEDAN
92	540	IMSG (I-V), SIHALA KHURD
93	653	IMSG (I-V), SARAI MADHU ,
94	741	IMSG (I-V), TARLAI, (No-1)
95	650	IMSG (I-V), SHEIKHPUR NOON ,
96	745	IMSG (I-V), ALI PUR FRASH TOWN
97	746	IMSG (I-V), SEEVRA
98	757	IMSG (I-V), CHAPPER GHASOTA
99	468	IMSG (I-V), ATHAL
100	475	IMSG (I-V), SUBBAN
101	522	IMSG (I-V), PINDORY SYEDAN,
102	526	IMSG (I-V), SHEIKH PUR RAWAT
103	747	IMSG (I-V), CHANOUL BANGIAL
104	750	IMSG (I-V), DHOKE FATEH HALL
105	758	IMSG (I-V), CHAKHTAN
106	753	IMSG (I-V), SIMLY DAM
107	740	IMSG (I-V), KHANA NAI AABADI
108	257	Islamabad Model College for Girls (VI-XII), G-9/2
109	286	Islamabad Model College for Girls (I-XII), I-9/1
110	289	Islamabad Model School (I-V), I-10/1 (No-1)
111	443	Islamabad Model College for Girls (VI-XII), KOT HATHIAL, BHARA KAU
112	444	Islamabad Model College for Girls (I-XII), UNIVERSITY COLONY (U.C)
113	502	Islamabad Model College for Girls (VI-XII), RAWAT
114	508	Islamabad Model College for Girls (I-XII) LOHI BHER
115	509	Islamabad Model School for Girls (I-XII) MOHRA NAGIAL
116	615	Islamabad Model College for Girls (I-XII), GOLRA,
117	712	Khaula Shaheed Model College For Girls (VI-XII), Punjgran
118	806	Islamabad Model College for Girls (PG), F-7/2,
119	807	Islamabad Model College for Girls (PG), G-10/4,
120	809	Islamabad Model College for Girls, I-8/3
121	810	Islamabad Model College for Girls (PG), F-7/4,
122	912	Islamabad Model College for Girls, F-6/2
123	913	Islamabad College for Girls, F-6/2
124	914	Islamabad Model College for Girls, F-7/4

125	915	Islamabad Model College for Girls, F-8/1
126	916	Islamabad Model College for Girls, G-10/2
127	917	Islamabad Model College for Girls, I-10/4
128	918	Islamabad Model College for Girls, I-8/4
129	919	Islamabad Model College for Girls, F-10/2
130	920	Islamabad Model College for Girls, KORANG TOWN
131	288	Islamabad Model School for Girls (I-VIII), I-10/4
132	446	Islamabad Model College for Girls (VI-XII) NCH, CHAK SHAHZAD
133	202	Islamabad Model School for Girls (I-X), G-6/1-3
134	204	Islamabad Model School (I-V), G-6/1-3,
135	205	Islamabad Model School (I-V), NO 1, G-6/1-4,
136	206	Islamabad Model School (I-V), G-6/4,
137	207	Islamabad Model School for Girls (VI-X), G-6/2,
138	208	Islamabad Model School (I-V), G-6/2
139	209	Islamabad Model School for Girls (I-VIII) G-6/2,
140	211	Islamabad Model School for Girls (I-X), PRESIDENTIAL ESTATE
141	213	Islamabad Model School for Girls (VI-X), G-7/1
142	214	Islamabad Model School for Girls (VI-X), G-7/2
143	215	Islamabad Model School for Girls (I-VIII) G-7/3-2,
144	216	Islamabad Model School (I-V), G-7/1,
145	217	Islamabad Model School (I-V), G-7/4,
146	218	Islamabad Model School (I-VIII), G-7/3-4,
147	219	Islamabad Model School (I-V), G-7/3-1,
148	223	Islamabad Model School for Girls (VI-X), F-7/2
149	224	Islamabad Model School for Girls (VI-X), F-6/1
150	231	Islamabad Model School (I-V), F-7/2
151	233	Islamabad Model School for Girls (VI-X), E-8/3
152	236	Islamabad Model School for Girls (I-X), E-9
153	238	Islamabad Model College for Girls (VI-XII), G-8/4
154	239	Islamabad Model School for Girls (VI-X), G-8-2
155	240	Islamabad Model School for Girls (I-VIII) G-8/4
156	250	Islamabad Model School for Girls (VI-X), G-9/3
157	251	Islamabad Model School for Girls (VI-X), G-9/4
158	258	Islamabad Model School for Girls (I-X), G-9/1
159	259	Islamabad Model School (I-V), G-9/2 (No-1)
160	261	Islamabad Model School (I-V), G-9/2 (No-3)
161	262	Islamabad Model School (I-V), G-9/2 (No-4)
162	267	Islamabad Model School for Girls (VI-X), G-10/1
163	269	Islamabad Model School (I-V), G-10/3
164	275	Islamabad Model School for Girls (I-X), G-11/2
165	279	Islamabad Model School for Girls (VI-X), I-8/1
166	280	Islamabad Model School (I-V), I-8/1
167	284	Islamabad Model School for Girls (I-VIII), I-8/1

168	290	Islamabad Model School (I-V), I-10/1, (No 2)
169	295	Islamabad Model School (I-V), G-7/2 No 2
170	442	Islamabad Model College for Girls (I-XII), MARGALLA TOWN,
171	449	Islamabad Model College for Girls (VI-XII) MALPUR
172	455	Islamabad Model College for Girls (I-XII) PIND BEGWAL
173	501	Islamabad Model College for Girls (VI-XII), HERDOGHER
174	503	Islamabad Model College for Girls (VI-XII) HUMAK
175	612	Islamabad Model College for Girls (I-XII), SHAH ALLAH DITTA ,
176	710	Islamabad Model College for Girls (VI-XII) NILORE
177	713	Islamabad Model College for Girls (VI-XII) TARLAI
178	714	Islamabad Model College for Girls (I-XII) JAGIOT
179	715	Islamabad Model College for Girls (I-XII) PIHOUNT
180	716	Islamabad Model College for Girls (I-XII) THANDA PANI
181	766	Islamabad Model College for Girls (I-XII) KIRPA
182	808	Islamabad Model College for Girls (MT) Humak
183	811	Islamabad Model College for Girls I-14/3
184	812	Islamabad Model College for Girls (PG), Bhara Kau
185	291	Islamabad Model School (I-V), I-10/2
186	203	Islamabad Model School (I-V), NO 2, G-6/1-1,
187	210	Islamabad Model School (I-V), G-6/2,
188	212	Islamabad Model School (I-V), G-6/1-2,
189	234	Islamabad Model School (I-V) NO 1, E-8
190	241	Islamabad Model School (I-V), G-8/4
191	242	Islamabad Model School (I-V), G-8/4 (No-2)
192	255	Islamabad Model School (I-V), G-9/3, (No-2) St-7
193	453	Islamabad Model College for Girls (I-XII) MAIRA BEGWAL
194	507	Islamabad Model College for Girls (I-XII), PIND MALKAN
195	270	Islamabad Model School (I-V), G-10/4
196	273	Islamabad Model School (I-V), G-10/2 (No 2)
197	222	Islamabad Model School (I-V), NO 1, G-7/2,
198	230	Islamabad Model School (I-V), F-7/2-4,
199	235	Islamabad Model School (I-V), E-8/1
200	243	Islamabad Model School (I-V), G-8/1
201	244	Islamabad Model School (I-V), G-8/1 (No-2)
202	245	Islamabad Model School (I-V), G-8/1 (No-3)
203	246	Islamabad Model School (I-V), G-8/2
204	247	Islamabad Model School (I-V), G-8/2 (No-2)
205	249	Islamabad Model School (I-V), F-8/2
206	226	Islamabad Model School (I-V), F-6/4,
207	229	Islamabad Model School (I-V), F-6-3,
208	220	Islamabad Model School (I-V), NO 7, G-7/3-3,
209	252	Islamabad Model School (I-V), G-9/4 (No-2)
210	253	Islamabad Model School (I-V), G-9/4 No 01

211	254	Islamabad Model School (I-V), G-9/3 (No-3)
212	260	Islamabad Model School (I-V), G-9/2 (No-2)
213	263	Islamabad Model School (I-V), G-9/1
214	272	Islamabad Model School (I-V), G-10/2
215	274	Islamabad Model School (I-V), G-11/1
216	277	Islamabad Model School (I-V), G-11/2
217	282	Islamabad Model School (I-V), I-9/4 (No-1)
218	283	Islamabad Model School (I-V), I-9/4 (No-2)
219	292	Islamabad Model School (I-V), I-9/1 (No-2)
220	237	Islamabad Model School (I-V), E-7/4
221	248	Islamabad Model School (I-V), G-8/3 (PIMS)
222	256	Islamabad Model School (I-V), G-9/3 (No-1)
223	264	Islamabad Model School (I-V), F-10/1
224	265	Islamabad Model School (I-V), F-10/2,
225	285	Islamabad Model School (I-V), H-8 (AIOU)
226	294	Islamabad Model School (I-V), I-9/1, (No 1)