

# Availability and Use of ICT for the Enhancement of Teaching and Learning in Professional Courses:

## *A Case Study of Punjabi University, Patiala*

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### ABSTRACT

In ever changing society of today, ICT has changed every aspect of life including education. Indian professional education is no exception to the phenomena and has evolved a lot with changing world scenario. Today several latest technologies are being introduced and used in professional courses to enhance the process of teaching and learning. Professional courses in different universities of Punjab are also following the trend and every effort is being made to provide the required ICT infrastructure to the professional courses in their institutions so that they can contribute in the sustainable growth of the society. In the present study, an effort has been made to analyze what kind of ICT infrastructure is available and how the same is being used for the enhancement of teaching and learning process in professional courses of Punjabi University, Patiala.

### KEY WORDS

Professional education, ICT, Teaching, Learning

### INTRODUCTION

We are living in a constantly evolving digital world which has totally transformed the way people live, work, communicate, access information, seek help and learn. In today's globally competitive world when the emphasis is upon developing high level skills that is skills that enable the learner to apply the acquired knowledge to working situations and are associated with higher education, Information Communication Technology (hereafter ICT) has proved to be a boon for human learning (Gouseti, A. 2014). Now it has become essential for every nation to train the human resource in such a manner that they can compete successfully in the global market. The pre requisite for the growth of the society is to first make the youth relevant to the society. Use of latest technology, need based curriculum, skilled teachers and world class infrastructure are few basic requirements to achieve the motive.

In reference to India, the structural reforms introduced in 1991 has totally changed the educational scenario. Foreign Direct Investment (FDI), liberalization, privatization, globalization and introduction of technology proved to be the

change makers which along with revolutionizing the socio-economic structure has also transformed the framework of education in general and professional in particular. Professional education includes those courses which help to develop specific skills, competencies and self-regulation among learners and enable them to enter a specific profession (Clement, S.G. 2017). The aim of professional courses has now been to create job oriented human resource which can meet the national and international needs of the changing society.

Understanding the important role of professional courses in the growth and development of the nation, Indian government has been making and implementing various policies and plans to introduce the latest technological equipments ICT to be more specific in the field. The objectives behind the efforts is to improve the quality, equity and Gross Enrollment Ratio (GER) in professional courses. Indian universities and institutes of professional courses are being provided financial, infrastructural and policy related every possible support and assistance from time to time. Easy access to the facilities, proper utilization of the available resources, promotion of application oriented research and improving the employability of the learner are few important issues that need to be addressed.

In Punjab also ICT based quality professional education is being provided and promoted. To impart the professional education, several courses in governmental, private and deemed universities are being run throughout the state. Out of various universities and institutes Punjabi University, Patiala is selected for the present study. The university is offering service, support and management related various professional courses to the learners from its campus since 1965. The university is catering to the needs of the students coming from the families with rural and farming background. It thus becomes all the more crucial and imperative to introduce and equip the students with all the information and skills available, so that they can compete with their counterparts successfully.

Understanding the background of the students and the teachers, in the present study, an attempt has been made to analyze what kind of ICT related facilities are available and how these facilities are being used for the enhancement of teaching and learning.

## **OBJECTIVES**

The main objectives of the study are-

- To study the availability of ICT related infrastructure in professional courses of Punjabi University, Patiala
- To study the practical utilization of the available infrastructure by the students and the teachers for the enhancement of teaching and learning.

## **DELIMITATIONS**

Present study has been delimited to:

- Faculty of Engineering of Punjabi University, Patiala
- All the departments working under the Faculty of Engineering, including:
  - Department of Basic and Applied Sciences
  - Department of Civil Engineering

- Department of Computer Science and Engineering
- Department of Electronics and Communication Engineering
- Department of Mechanical Engineering

## SAMPLE

In all total sample taken for the study was 40 in number, out of which 20 were teachers and 20 were students of various departments under Faculty of Engineering. Random sampling technique was followed in the present study for the collection of data.

## METHODOLOGY AND TOOL

To examine the situation as it is, descriptive survey method was used in the study. To collect the data from the respondent a self-constructed questionnaire was prepared and used by the researcher (Annexure I). Percentage analyses was applied to present the result.

Objective wise analyses and interpretation of the data is as follows:

### OBJECTIVE-I

*To study the availability of ICT related infrastructure in professional courses of Punjabi University, Patiala*

Total four questions related to the first objective of the study were asked to the teachers as well as students. Questions and related responses are as follow-

**Question- 1:** Does necessary Information Communication Technology (ICT) related facilities are being provided by your department for teaching and learning?

In response to the above question, out of 20 teachers 11 responded in affirmation whereas 9 teachers said No to the availability of ICT related facilities. Similarly out of 20 students 10 students responded by saying that ICT related infrastructure was available whereas 10 students responded in negative. Graphical representation of the same is given below:

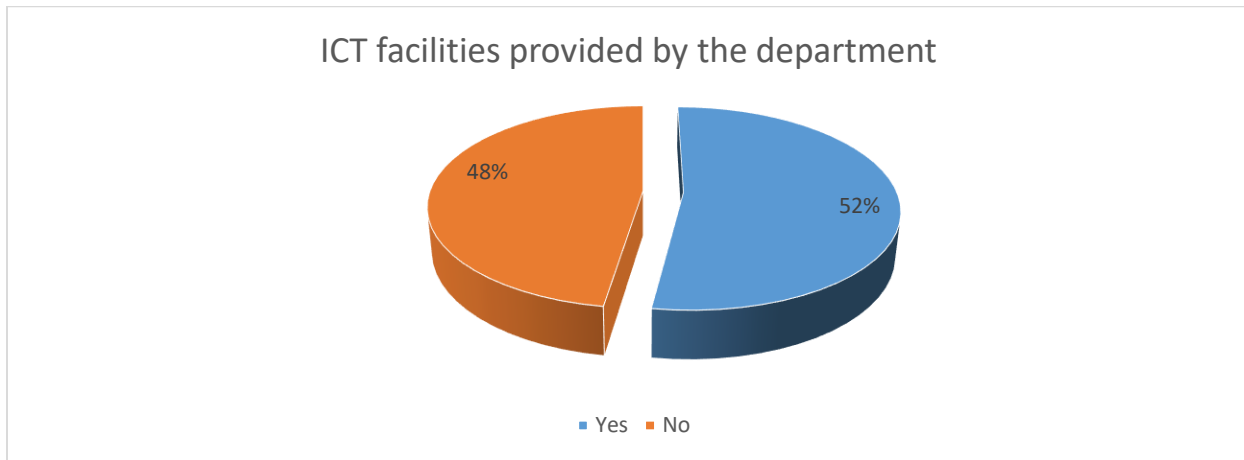


Figure 1: Showing opinion of respondents regarding the ICT facilities provided in the department

**Question- 2:** Tick mark ( ✓ ) the facilities available in your department-

- a) Wi-Fi access
  - i. Everywhere in the campus
  - ii. Only in the labs or specific areas
  - iii. Not at all

In response to the question all the 20 student respondent opted for not at all option whereas out of 20 teachers 18 opted for only in Labs or specific areas whereas 2 opted for not at all option. The difference of opinion to the above asked question can be understood in the light of the fact that no Wi-Fi facility is available in the department. Internet access is limited to the labs, offices or cabins of the teachers and that too in the form of broadband connections.

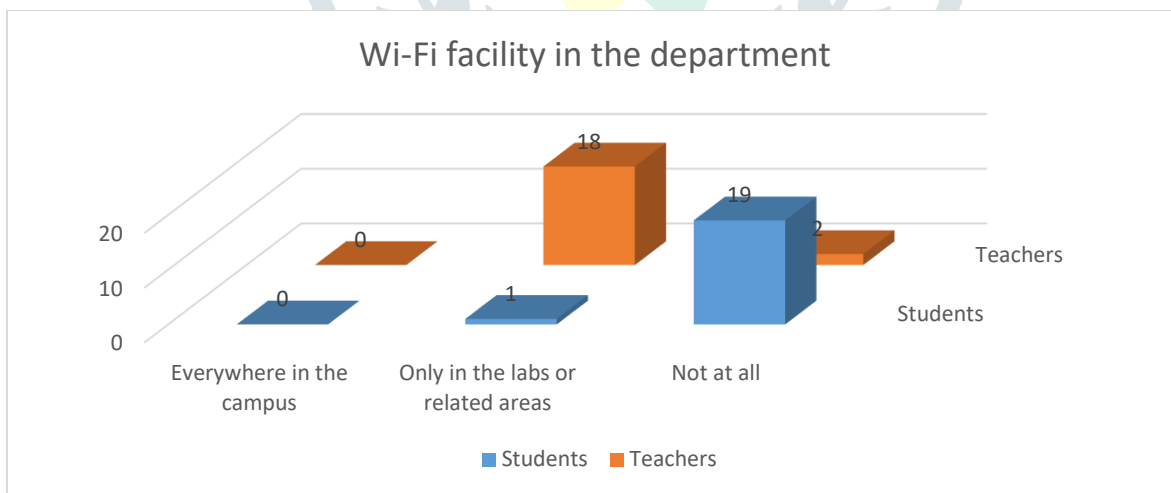


Figure 2: Showing opinion of the respondents regarding Wi-Fi facility

- b) Digital Library
- a. Yes (if yes then):
    - i. In the departmental/main library
    - ii. All over the campus
  - b. No
  - c. Don't know

Out of the 40 respondents, majority of them unanimously opted for Yes and further selected- In the departmental/main library option. The opinion shows that the digital library facility is not available in anywhere, anytime mode in the department. Only one opted for no and 2 for don't know option.

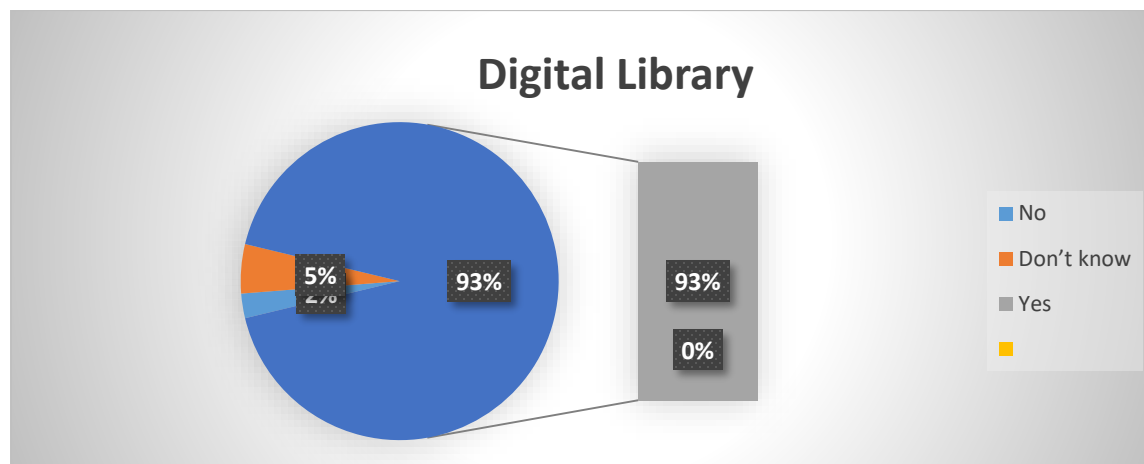


Figure 3: Showing opinion of respondents regarding the facility of digital library

- c) Projector with interactive white board
- a. In all classrooms
  - b. In few classrooms
  - c. None at all

To the above question, 36 out of total 40 responded by selecting in few classes option, one of the respondent opted for all classrooms and 4 for none at all. The opinion shows that the department is not fully equipped with projectors and interactive white boards and thus can't claim to be using digital classrooms technology.

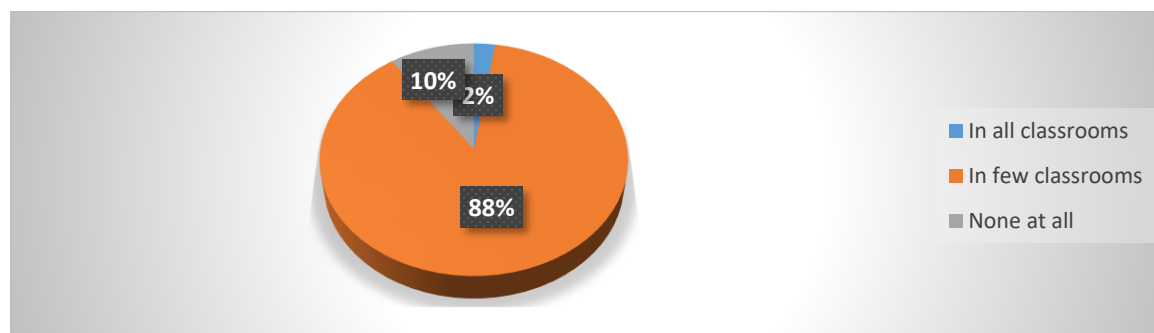


Figure 4: Showing opinion of respondents regarding availability of projectors with interactive white boards

- d) Computer or Tablet device
- One for each learner
  - One for a group
  - None at all

To the above question, 33 out of total 40 respondents opted for one for each learner and 6 respondents opted for one for a group. “Not at all” option was opted by only one respondent. Graphical representation of the same is given below:

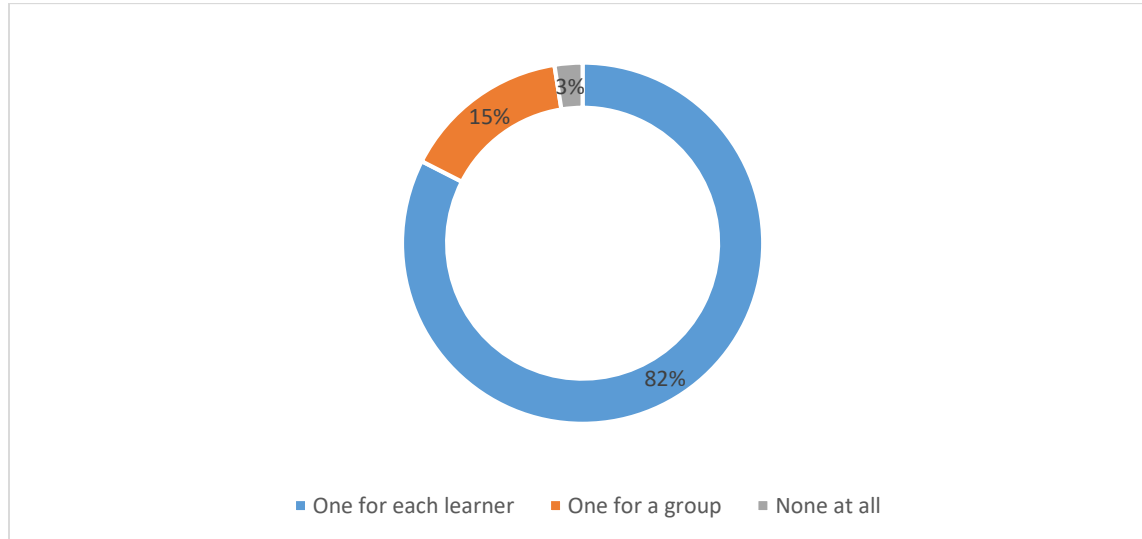


Figure 5: Showing opinion of respondents regarding availability of Computer or Tablet device

- e) Use of social media to connect with teacher/learner after working hours
- Yes
  - No

In response to the use of social media to connect with teacher/learner after working hours, both Yes and “No options” got 20/20 responses in which interestingly 7 students and 13 teachers said yes and 13 students and 7 teachers said no which shows the difference of view between both type of respondents.

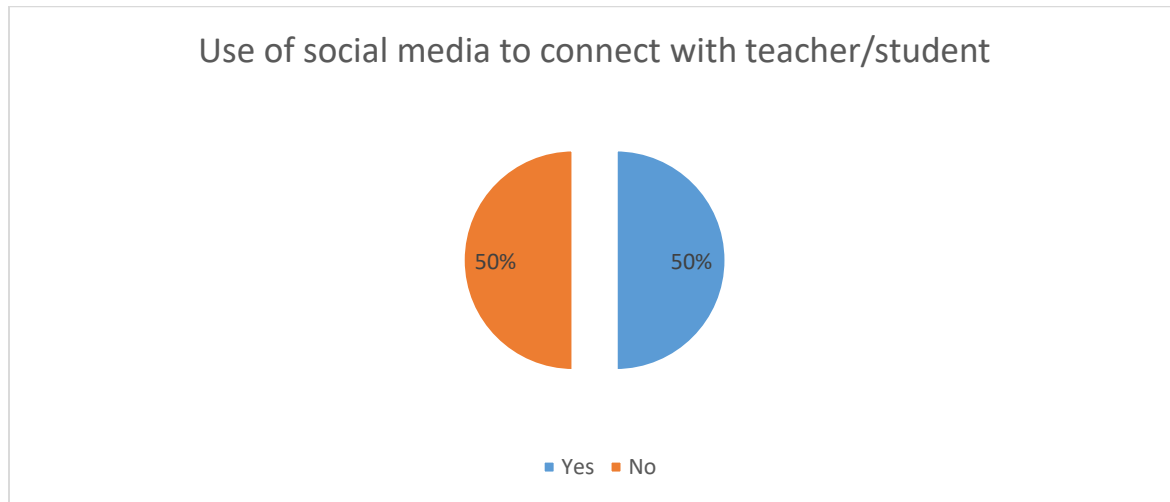


Figure 6: Showing opinion of respondents to the use of social media after working hours

- f) Course related all tools and equipments
- a. Available
  - b. Not available
  - c. Only few are available

In response to the above question, out of 20 students 8 said available, 7 said only few are available and 5 said not available. At other hand out of 20 total teacher respondents, 16 said available, 3 said only few are available and one said not available. It is worth notice that although majority of teacher respondents are of the opinion that course related tools and equipments are available, the opinion of students in this regard is fragmented.

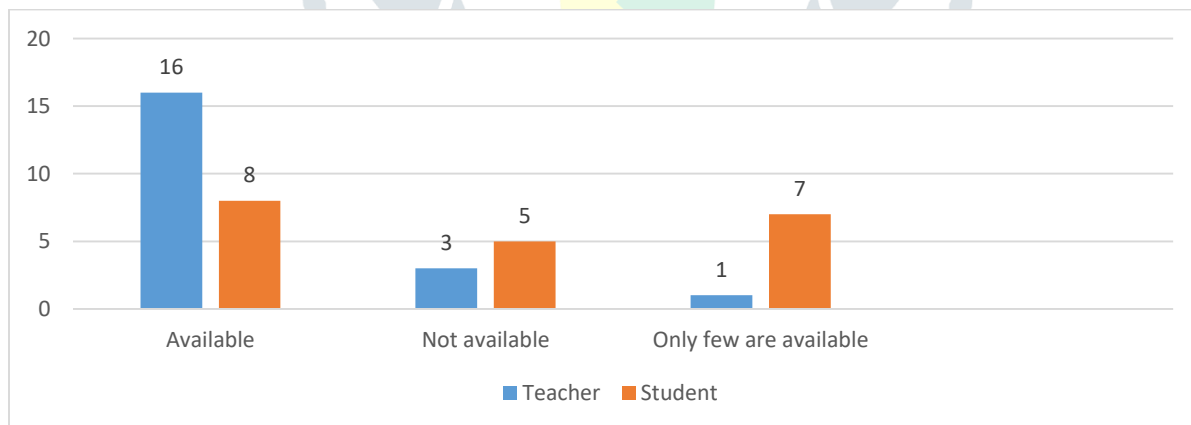


Figure 7: Opinion of respondents on availability of tools and equipments

**Question- 3:** What type of ICT facilities are available in your department?

While responding to above question, out of total 40 respondents 27 opted for obsolete, 7 for average and 6 for advanced type of ICT facilities are available in the department, which shows that majority of the students and teachers are not satisfied with the type of technology being used in the department. Further bifurcation in opinion can be understood

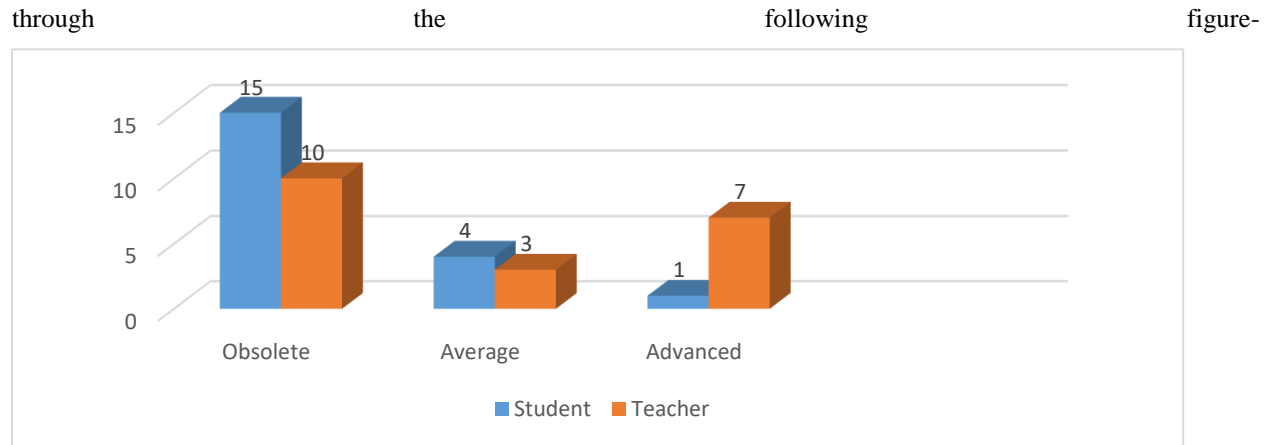


Figure 8: Showing opinion regarding the type of ICT facilities available in the department

**Question- 4:** Do you have an easy access to the ICT facilities available in your department?

While responding to the question, out of 20 student respondents 12 said no, 7 yes and 1 don't know whereas out of 20 teacher respondents 18 teachers opted for yes option, one for no and one for don't know. The difference of opinion shows that there is huge difference in the ease of access between the student and teachers.

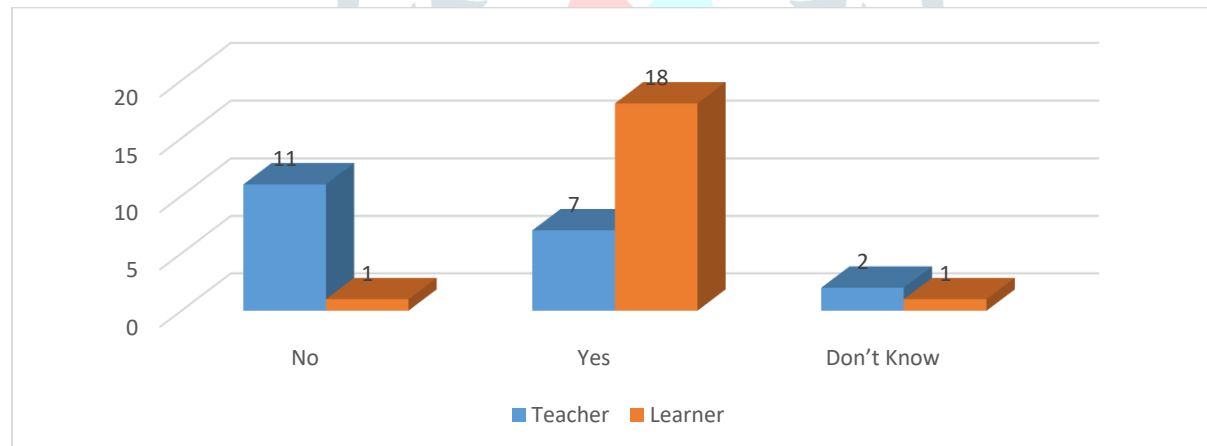


Figure 9: Showing opinion of respondents to ease of access to ICT facilities

## OBJECTIVE-II

*To study the practical utilization of the available infrastructure by the students and the teachers for the enhancement of teaching and learning.*

**Question- 5:** Do you think the teachers in your department are trained enough to use the ICT related facilities?

In response to the above question all the 20 teacher respondents said yes whereas only 3 student respondents said yes, remaining 17 of them opted for no which shows that although all the teachers claim that they are trained enough to



use ICT facilities but students don't support the view and majority of students are of the opinion that teachers are not trained enough to use the ICT equipments.

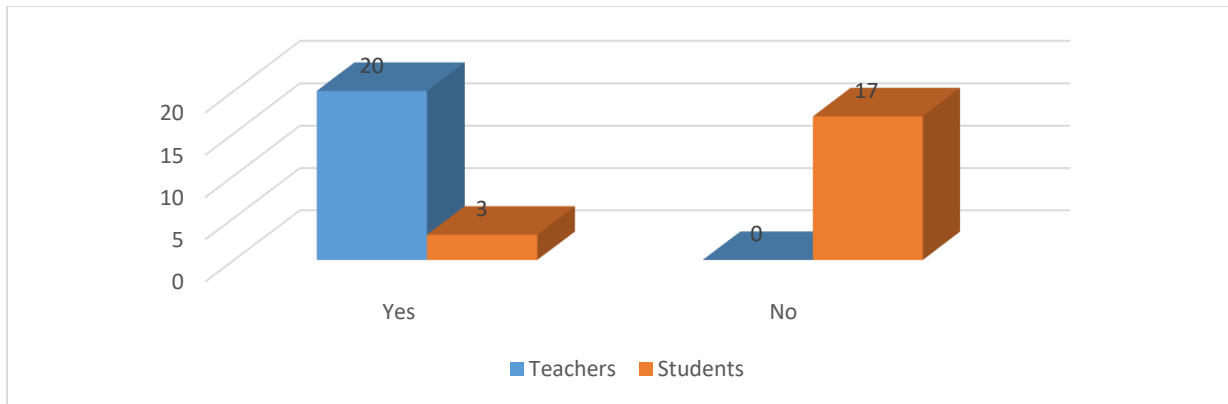


Figure 10: Showing opinion divided opinion of students and teachers on the training of teachers to use ICT

**Question- 6:** Teachers.....use the ICT related facilities available in the department for teaching the content matter in the classroom.

To the above question, the respondents were presented with three options namely often, rare and never, to which 25 respondents opted for often option which consists 19 responses of teachers and five of the students. Rare option was opted by one teacher and one student whereas majority of students that is 14 opted for never option which again shows the difference in opinion of teachers and students. The difference of opinion is shown in the following graphical representation:

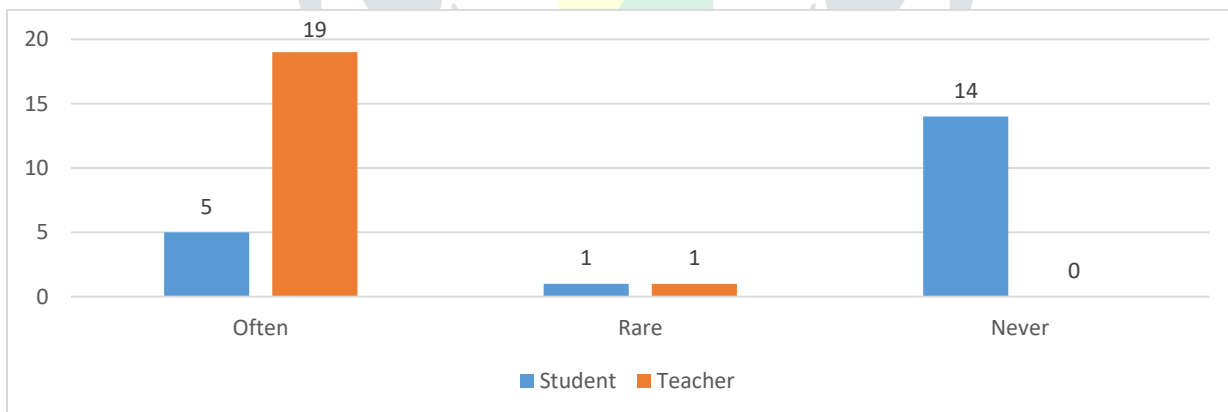


Figure 11: Showing opinion of difference of opinion to the above asked question.

**Question- 7:** Are Students use the ICT related facilities available in the department for.....purpose?

In relation to the above asked question, the respondents were offered three options that is learning, entertainment and both. While answering the question, 18 respondents opted for both option, whereas entertainment received 8 responses and 14 to the learning option. The responses show that the ICT facilities are being used not only for learning but also for entertainment as well.

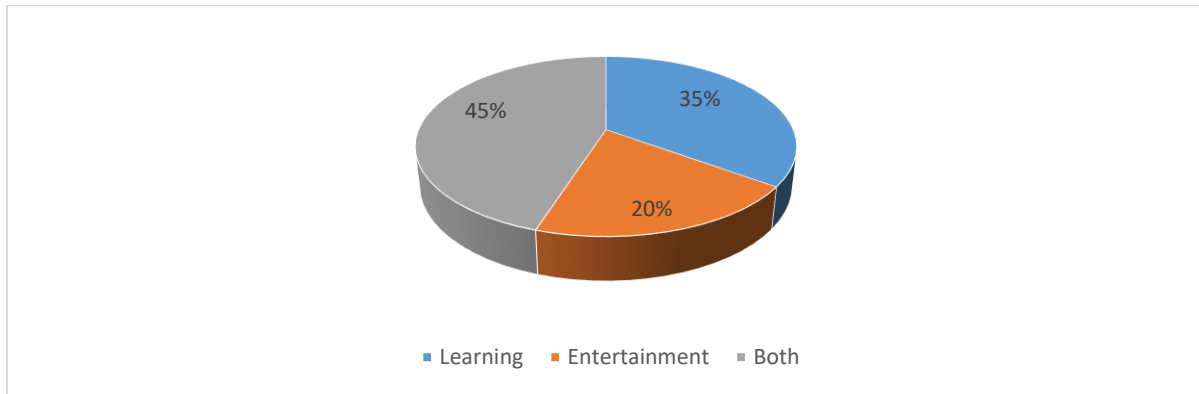


Figure 12: showing opinion of respondents in relation to the purpose of using ICT

**Question- 8:** Do you think the ICT facilities available in your department are overall being used to its fullest?

While responding to the above asked question, 24 respondents opted for yes and 16 opted for no option. The difference of opinion between students and teachers was also visible in response to this question as 14 students and 2 teachers said no whereas 18 teachers and only 6 students opted for yes option, which shows that majority of students are not satisfied the way ICT facilities are being used in the department.

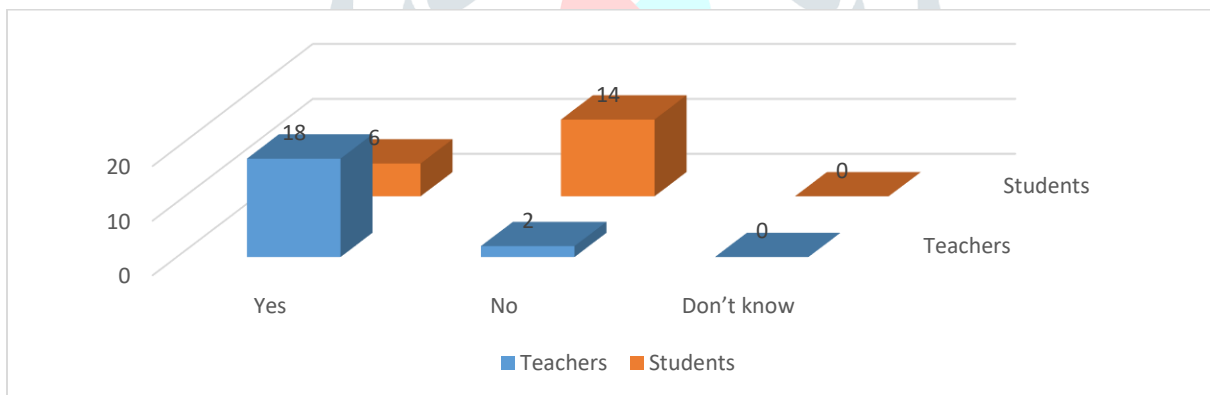


Figure 13: showing opinion of respondents in relation to the use of ICT to its fullest

## DISCUSSION

From the above tables and inferences drawn it is evident that Engineering department of Punjabi University Patiala has substantial amount of ICT based facilities in the department to which both teachers and students are making best use of. ICT based teaching and learning is helping them to grow academically as well as professionally. Seldom have they used it for entertainment as is quite evident from their responses because everyone is conscious about its value in the competitive market –be it national or global. More so, this technology is also helping them to connect to each other when classes are off enabling them to have informal academic discussions. This is helping them to build strong social bonds.

## CONCLUSION

From the above analyses and discussion of the responses, it can be said that many latest ICT facilities are available but are not sufficient enough to meet the number of students. Today when Wi-Fi facility is available in many of the universities of Punjab, same should be made available to the learners with the ease of access as restricted access and that too in specific areas can't solve the purpose of using ICT anywhere and anytime. It is also noticed in the analyses that the training of teachers to use ICT and that too in routine teaching learning process should be encouraged. Another issue that need to be addressed is that to utilize the available ICT resources to its maximum should be encouraged as in the responses the students seemed to be dissatisfied to the way ICT is being used in the departments. It is only with the systematic upliftment of the facilities and proper utilization of the same that the students can be made competent enough to compete in the global competition and get better placement for themselves.



## REFERENCES

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<http://www.punjabiversity.ac.in/>

**Annexure I****Questionnaire**

Name (optional): .....

Department: .....

Designation/ Class: .....

University: .....

1. Does necessary Information Communication Technology (ICT) related facilities are being provided by your department for teaching and learning?
  - a. Yes
  - b. No
2. Tick mark ( ✓ ) the facilities available in your department-
  - a. Wi-Fi access
    - i. Everywhere in the campus
    - ii. Only in the labs or specific areas
    - iii. Not at all
  - b. Digital Library
    - i. Yes (if yes then):
      1. In the departmental/main library
      2. All over the campus
    - ii. No
    - iii. Don't know
  - c. Projector with interactive white board
    - i. In all classrooms
    - ii. In few classrooms
    - iii. None at all
  - d. Computer or Tablet device
    - i. One for each learner
    - ii. One for a group
    - iii. None at all
  - e. Use of social media to connect with teacher/learner after working hours
    - i. Yes
    - ii. No
  - f. Course related all tools and equipments
    - i. Available
    - ii. Not available
    - iii. Only few are available
3. What type of ICT facilities are available in your department?
  - a. Obsolete
  - b. Average

- c. Advance
4. Do you have an easy access to the ICT facilities available in your department?
- Yes
  - No
  - Don't know
5. Do you think the teachers in your department are trained enough to use the ICT related facilities?
- Yes
  - No
6. Teachers.....use the ICT related facilities available in the department for teaching the content matter in the classroom.
- Often
  - Rare
  - Never
7. Are Students use the ICT related facilities available in the department for.....purpose?
- Learning
  - Entertainment
  - Both
8. Do you think the ICT facilities available in your department are overall being used to its fullest?
- Yes
  - No
  - Don't know

