

**METTU UNIVERSITY**

**COLLEGE OF ENGINEERING AND TECHNOLOGY DEPARTMENTG OF INFORMATION TECHNOLOGY RESEARCH PROPOSAL ABOUT evaluating human computer interaction in department of it students**

**GROUP MEMBER**

**NAME ID\_NO**

1. **Birhanemeskel Mesfin…………………RU0266/11-0**

**Submitted to instructor: Begna**

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**Abstract**

The intention of this paper is to provide an overview on information technology department students and lab class Interaction. The overview includes the basic definitions and existing activities and recent advances in the field,try to specify the problem and solutions listed, and finally the applications of HCI. Students will be respect and try to knowing computer environment it will be skill-able.

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# 1.1 Introduction

“Human-computer interaction is a discipline concerned with the design, evaluation and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them” (Hewett et al, 1992).

Human-Computer Interaction is a multidisciplinary arena which draws on the fields of computer science, psychology, cognitive science, and organizational and social sciences in order to understand how people use and experience interactive technology.

The Human Computer Interaction (HCI) program will play a leading role in the creation of tomorrow's exciting new user interface software and technology, by supporting the broad spectrum of fundamental research that will ultimately transform the human-computer interaction experience so the computer is no longer a distracting focus of attention but rather an invisible tool that empowers the individual user and facilitates natural and productive human-human collaboration(1).

The study of relationships between human and computers/computer mediated information. HCI has three components: the human, the interaction, and the computer.

Sometimes called as Man-Machine Interaction or Interfacing, concept of Human-Computer Interaction/Interfacing (HCI) was automatically represented with the emerging of computer, or more generally machine, itself. The reason, in fact, is clear: most sophisticated machines are worthless unless they can be used properly by men. This basic argument simply presents the main terms that should be considered in the design of HCI: functionality and usability [2].

Why a system is actually designed can ultimately be defined by what the system can do i.e. how the functions of a system can help towards the achievement of the purpose of the system. Functionality of a system is defined by the set of actions or services that it provides to its users. However, the value of functionality is visible only when it becomes possible to be efficiently utilized by the user [2]. Usability of a system with a certain functionality is the range and degree by which the system can be used efficiently and adequately to accomplish certain goals for certain users. The actual effectiveness of a system is achieved when there is a proper balance between the functionality and usability of a system [3].

# 1.2 Background

Here we are evaluating the human (student) computer interaction in department of IT laboratory. The department of information technology is one of the departments in Mettu university. it is included in the faculty(college) of Engineering and Technology. as we have observed in the laboratories computers are not safely placed. they are exposed for trashes that affects the computer health or causing malfunctioning. And there is also problems on students side most problems are coming from lack of awareness (knowledge) or less skill about how to use computers. this problems might be solved if computers in the laboratories are placed safely and clean and on students side by giving awareness about how to use computers properly.

# 1.3 Motivation

Each student in our department have a dream to graduate with a full skill of computers. Department want to prepare a skill full, knowledgeable and self-confident student. But there are many obstacles in order to achieve the dream of the department and the student. The students lack technological interaction skills because they don’t give concentration for the time in the lab,and uncomfortable situation around our department. In case of this motivated us to address this problem to evaluate the Human Computer Interaction within the student.

# 1.4 Problem statement of the study

Owing to the fast development in the digital technology, the operation of human-computer interface is becoming more and more complicated. Consequently, to catch up with the speedy and fleeting transformation, the user of digital interactive products can only keep on learning various operating interfaces, programming languages, and development environments(1).

In our department we have observed many problems which are limiting the computer skill of students, according to those problems the department has to work a lot to prevent this problems such as :-

* Students meet problems of lack of awareness and skill of computer.
* Less motivation to know how to use computers.
* The schedule for students to use the laboratory is not satisfactory because labs are opened in day time but students spend their time on attending the class therefore the most free time is after 06:00 o’clock local time but on this time laboratories will be closed.
* The lab chairs and desks are not clean and suitable for usage.
* The computer device parts are not complete for instance some computers doesn’t have keyboards or some doesn’t have mouse’s and software lack.
* All computers are not connected to networks .
* The laboratories are not enough according to students in the department.

# 1.5 Research question

1. What are the problems students meet the most?
2. What devices or computer materials students want to be in the laboratory?
3. What solutions do students suggest to solve this problems?

# 1.6 Objectives of the study

## 1.6.1 General objective

Our general objective is to evaluate the human(student) interaction in our department computer laboratory.

## 1.6.2 Specific objective

* To find out what have to be done as a solution for problems investigated at the laboratory.
* To increase the students skills and performance of computer usage through learning.
* To create a well organized and healthy environment both for computers and users.

# 1.7 Scope of the study

This study focuses on the human computer interaction (the interaction between information technology students with laboratory computers) in department of IT computer laboratories.

We have seen problems which we have stated them above on problem statement portion to be solved to help students use the lab computers comfortably. What will be done to solve this problems is:-

* Create awareness and motivation about advantages of more communicating with technology and give critical attention for each lab activities.
* Creating clean and suitable environment of computer for students to use.
* Fulfilling necessary materials for each and every computer in the lab, for instance some computers may have key board but they might not have a mouse or a connection cable and some software programs.
* Changing computers with the most newer technology versions for their increased feature and easiness for students.
* Students have to ask things which they are not clear for them to the lab assistants.
* Scheduling and giving specific computer for each student to avoid problems that comes from every body using any computers and this helps that every student can use the computer specifically given to him without being busy by nobody.
* Students have to be responsible for their action with computers.
* Generally, this helps the laboratory environment to be safe and students will improve their computer skills.

# 1.8 Methodology of the Study

The focus of human computer-interaction (HCI) is the investigation of relationships between computer technology, human activity and society. We are interested in evaluating the human computer interaction in IT department laboratory,in general, and we specifically researched how IT department students communicated within the department laboratory computers. Then we designed, created, and evaluated technologies and tools to support humans and their social activities. There is a range of research methods used in HCI.

## 1.8.1 Information gathering methods

* Here we have used **interviewing** sample information technology students from all 4 batches randomly to gather information's.
* We have **observed** problems in the laboratory by our naked eyes.
* We refer the review work the related area.

# 1.9 Significance of the study

After the completion of this study the expected benefits are:

* Increased computer technology skill of students.
* Well organized and comfortable laboratory environment for use.
* Decreased danger of computer materials(devices) coming from excessive user using lab computers continuously.
* Safe and clean environment will be created and this will prevent computers from being damaged by unnecessary trashes and also prevents students health from being polluted.

# 1.10 Work detail

## 1.10.1 Plan of action and Duration

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Activity | 15/04/2014-20/04/2014 | 21/04/2014-25/04/2014 | 26/04/2014-30/04/2014 | 01/05/2014-05/05/2014 | 06/05/2014-10/05/2014 | 11/05/2014-20/05/2014 | 21/05/2014-30/05/2014 | 01/06/2014-10/06/2014 |
| 1 | Topic/Title |  |  |  |  |  |  |  |  |
| 2 | Introduction |  |  |  |  |  |  |  |  |
| 3 | Background |  |  |  |  |  |  |  |  |
| 4 | Statement of the Problem |  |  |  |  |  |  |  |  |
| 5 | Objective of the study |  |  |  |  |  |  |  |  |
| 6 | Methodology |  |  |  |  |  |  |  |  |
| 7 | Significant/Benefit of the Study |  |  |  |  |  |  |  |  |
| 8 | Duration and Plan of action |  |  |  |  |  |  |  |  |
| 9 | Cost/Budget |  |  |  |  |  |  |  |  |
| 10 | Reference |  |  |  |  |  |  |  |  |

## 1.10.2 Cost of research

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S.N | Materials used | Amount | Price per unit in Birr | |  | | --- | | Total price in Birr | |
| 1 | Laptop | 1 | 18,000 | 18,000 |
| 2 | Paper, print | 20 | 2 | 40 |
| 3 | Mobile call | - | At least 1 birr | More than 5 |
| 4 | Pen | 2 | 30 | 30 |
| 5 | Flash drive | 1 | 350 | 350 |
| 6 |  | Total | | 18425 |

# 1.11 conclusion

Human-Computer Interaction is an important part of systems design. Quality of system depends on how it is represented and used by users. Therefore, enormous amount of attention has been paid to better designs of HCI. The new direction of research is to replace common regular methods of interaction with intelligent methods. The subject of Human Computer Interaction is very rich both in terms of the disciplines it draws from as well as opportunities for research. Discussed here was just a small subset of the topics contained within HCI. The study of user interface provides a double-sided approach to understanding how humans and machines interact. Therefore we are suggesting that if there would be the coordination between the departments workers starting from the head to the lab assistants with students are cooperating to improve the way of teaching students to make them more skilled and this will also helps the lab properties as the damage on the properties from skilled person is very less.

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# 1.12 References

* (1) Kuo-Ying Huang 2009, October 20-22, 2009, San Francisco, USA
* (2)Kasper Hornbæk University of Copenhagen, Denmark Human–computer interaction; Problem-solving
* (3)Arminda Guerra Lopes (No. 3, Set/Dez., 2016)Centro Algoritmi, University of Minho, Guimarães, Braga, Portugal
* (Hewett et al., 1992),give the discription of Human Computer Intraction.