An Exploration of Outcome Based Education System in English Communication Courses at the Undergraduate Level at Engineering Department, NUML

By

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M. A., National University of Modern Language, Islamabad 2004

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF PHILOSOPHY

In **English**

To

FACULTY OF ARTS & HUMANITIES

NATIONAL UNIVERSITY OF MODERN LANGUAGES, ISLAMABAD

NATIONAL UNIVERSITY OF MODERN LANGUAGES FACULTY OF ARTS & HUMANITIES

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Thesis Title: An Exploration of Outcome Based Education System in English Communication Courses at the Undergraduate Level at Engineering Department, NUML

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Master of Philosophy
Degree name in full

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Candidate of **Master of Philosophy** at the National University of Modern Languages do hereby declare that the thesis **An exploration of Outcome based Education System in English communication courses at the under graduate level at Engineering department, NUML** submitted by me in partial fulfillment of MPhil degree, is my original work, and has not been submitted or published earlier. I also solemnly declare that it shall not, in future, be submitted by me for obtaining any other degree from this or any other university or institution.

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ABSTRACT

Title: An Exploration of Outcome Based Education System in English Communication Courses at the Undergraduate Level at Engineering Department, NUML

This research has been conducted to evaluate whether the undergraduates of Engineering department NUML, have achieved the outcomes in their English language courses through outcome-based education system or not. The sole purpose of conducting this research was to determine effectiveness of the OBE in English language courses taught to the undergraduates of engineering department at NUML. For this purpose, triangulated data was considered. In the first phase, the performance of all students in English Language courses was considered for analysis. This performance was based on the course learning outcomes measured through outcome-based education system. The collected data has been presented with the help of graphs. In the second phase a sample of fifteen teachers was selected at random from a population of 80 teachers of Faculty of Engineering and Computer Sciences, NUML, Islamabad. In this sample, five teachers are currently teaching English language courses in different departments of afore mentioned faculty and other eight teachers and two lab engineers are teaching in the department of Electrical engineering at NUML. These all teachers are well trained and implementing the OBE in their courses. The data was collected from these teachers through a questionnaire consist of closed ended questions only. The collected data has been presented with the help of pie-chart. In the third phase the data was collected from 15 students, selecting five at random from the particular semesters in which English language course are offered. This data was also collected through the questionnaire consist of close ended questions only. The information obtained from the students has been presented with the help of pie chart. The findings of this study show that following the OBE system, the undergraduates of engineering department, NUML, Islamabad have successfully achieved course learning outcomes in English language courses. This research also concludes that OBE system is better than the traditional system of teaching because former is student centric whereas the latter is teacher centric. The study also gives certain recommendations at the end for successful conduct of OBE system.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ABET	Accreditation Board for Engineering and Technology
CLO	Course Learning Outcome
DBS	Departmental Board of Studies
FBS	Faculty Board of Studies
PEC	Pakistan Engineering Council
PLO	Program Learning Outcome
OBE	Outcome Based Education
OBL	Outcome Based Learning
CRC	Curriculum Review Committee
IAB	Industrial Advisory Board
ACM	Academic council Meeting
NCEAC	National Computing Education Accreditation Council
SCL	Student Centered Learning
TCL	Teacher Centered Learning
COBES	Community Based Education and Service
SPSS	Statistical Package for Social Sciences
ESP	English for Special Purpose
ESL	English as Second Language
NAAC	National Assessment and Accreditation Council

ACKNOWLEDGEMENTS

I am thankful to Allah, without whose blessing I would not have been able to complete this difficult task

I owe thanks to Dr. Basit Shehzad, Dean Faculty of Engineering and CS, Dr. Inaytullah Khattak, Head of English department, Dr. Hazrat Umar, the program Coordinator, Dr. Ejaz Mirza Head Department of English, NUML, Rawalpindi branch, Dr. Umer Hayat, Head Department of Engineering NUML, Rawalpindi Branch and Dr. Shiraz Alam, Head department of Electrical Engineering for their cooperation in the entire process.

I would like to express my deepest thanks and love to my parents who always inspired and encouraged my pursuit of this degree and to my brothers and sister who have supported me in all my years of academic study. I also give my sincerest thanks to my supervisor Dr. Muhammad Haseeb Nasir who has consistently challenged my ideas with the intent of bringing out the best in me. Despite having read through screeds of incoherent sentences, he has always given positive and constructive advice and has been extremely helpful in times of need, I am sincerely grateful for this. I also extend my deepest thanks to my colleagues in Faculty of Engineering and Computer Science especially Mr. Awais Gondal, Assistant Manager, MRC, NUML, who guided me consistently during the whole research study despite of his own busy work schedule. Thanks to the English Department of NUML for offering me the academic and creative space, to bring this thesis to life.

Thank you all!

DEDICATION

This thesis is dedicated to my Parents and my wife for their love, endless support and encouragement.

CHAPTER 1

INTRODUCTION

Evaluation is a process that is conducted to examine a program critically which involves collection and analysis of information about activities of a program, its characteristics and the outcomes (Scheerens et al., 2003). The purpose of evaluation is to judge the effectiveness of a program so that it can be improved if required and/or to inform about the decision of programs. In other words, we can say that evaluation determines the development and different changes which take place in the performance of pupils as a result based on teaching learning experiences. It also characterizes the worth of something. It is a method which determines the level to which expected goals or outcomes are achieved.

The OBE is used in education because it clearly focuses and organizes everything in an educational system around what is necessary for all students to be able to do at the end of their learning. OBE proposes an influential and interesting option of transforming and organizing medical education.

In 2020, the teachers of Government College University Lahore who were working in the department of electrical engineering, designed a real-time application based on Microsoft excel for the assessment and evaluation of student performance at the undergraduate level. In this application, the mapping of Course Learning Outcomes (CLOs), as well as Program Learning Outcomes (PLOs), was designed according to course contents. Self-assessment reports of both student and teacher were prepared after analyzing student's performance and teacher's contributions respectively. They proposed usage of the OBE system with the results and the case study courses described for the better attainment of CLOs and PLOs. (Siddique, 2020)

In 2021, a review was published on the Outcome Based Education and the factors that impact student learning outcomes in Tertiary Education System. The basic aim of this review was to highlight the tertiary education system of Pakistan and the need to shift from teacher centered to Outcome Based Education system. The review also addressed the major factors that impact student learning outcomes. Search strategy was designed by combining Boolean operators and key terms related to review objectives. Seven studies were included in the paper

regarding the effectiveness of Outcome Based Education in different disciplines of education. The findings suggested five important factors from the literature that impact student learning outcomes including, assessment strategies, learning objectives based on level of complexity, student preferred learning styles, English language competency and Employer requirements. One of the significant findings of the literature is the identification of factors especially the issues of English language competency in countries like Pakistan where language proved to be a major barrier. The major significance of the current study was that it could be helpful for educational authorities, teachers, consumers, parents as well as the community. On a larger scale it can be useful for education policy developers, curriculum designers and education departments. Educators can identify which direction they have to choose towards reorganizing for improvement. This may serve as a guiding tool for educators towards implementation of OBE (Asim, 2021).

Mirza and Saba (2022), conducted a research to highlight the problems in implementing OBE system in Pakistani institutions and to propose some modifications in the existing system. Their paper presents a two-fold contribution. First, the implementation problems of the OBE system are critically analyzed. Next, a few modifications in the existing approaches have been introduced to achieve the desired results from the recently adopted OBE system. In their study they found that in the syllabus and curriculum-based education system, some of the teachers used to teach a selective portion of the syllabus with more emphasis, which is of their main interest. And in doing so, sometimes they ignore teaching an important portion of the syllabus. This would result in incomplete knowledge (or learning outcomes) attainment by the students at the end of the course. The vagueness of assessment, of OBE system parameters, is considered as one of the major flaws of the System.

Implementation of the OBE system following a classical semester system approach, in which the course in charge has unbridled assessment authority, makes the problem worst. Especially when the students succeed to deceive their assessors by using unfair means in the sessional tests (like; midterm-tests, quizzes, assignments, etc.). Incidentally, this assessment authority cannot be altered, as per the very nature of the semester system. Consequently, due to unavoidable "human error", some students (or graduates) clear the course (with flying marks) without achieving all learning outcomes. Eventually, this causes irreparable damage to

society. Therefore, it is required that human-based assessment should be coupled with an unmanned or auto-assessment to filter out the phony graduates from real ones. The solution proposed in this study modifies and corrects the non-OBE-based academic practices, inherited from the previously followed system, and thence, it resolves the faulty implementation problem of the OBE system. Secondly, it introduces a regulatory mechanism, which makes the Pedagogic system obey rules and regulations of the OBE system, in its true spirit. And finally, it guarantees; the attainment of all learning outcomes by the engineering graduates and makes them ready for playing their role in the accomplishment of Program Educational Objectives (PEO) in their professional life (Mirza, 2022)

This research has been conducted to explore the effectiveness of outcomes achieved by the undergraduates of engineering in English language courses through OBE (Outcome based Education System). All the disciplines have certain outcomes which are achieved at the end of each course. The outcomes of each course are based on CLOs (Course learning Outcomes) and PLOs (Program learning Outcomes). To set these outcomes, the instructor of each course designs CLOs which are mapped on different PLOs on the basis of Bloom Taxonomy model. This model describes different levels of course learning outcomes in form of action words. It has various PLOs depending on the program. It also describes three main domains. The instructors make their CLOs and PLOs according to three domains and four levels. Each CLO covers different contents according to its outcomes. The department of Engineering, NUML, Islamabad is working under Pakistan Engineering Council. The PEC is the accreditation body which allows the institutions to continue offering the courses if they follow the criteria.

In OBE system the process of evaluation is done through four different tools which include quiz, assignment, midterm and end term exams and class presentations. These tools are also designed on the basis of course learning outcomes. For each CLO the instructor designs one quiz, one assignment and one presentation.

Course Learning Outcomes depict those difficult performances for which a student must be proficient as a result of his learning experiences in a particular course. These outcomes are determined by the course instructor or a team of teachers who share the same subject.

In this process of designing learning outcomes, the instructor or the team uses suitable action verbs for different levels of students. These action verbs make it possible to create an

alignment between program and course learning outcomes with assessments. While writing the learning outcomes of a program, the teacher should anticipate how the learning of the students will be assessed in response to each expectation. The verbs such as know or understand is considered vague and cannot easily be measured and need to be replaced by other verbs such as describe, identify, illustrate, or explain etc.

The formation of CLOs is completed through a long process of approvals. First of all they are discussed by Curriculum Review Committee (CRC). This committee forwards the CLOs to DBS i.e., Departmental Board of Studies. This board further refers the CLOs to Industrial Advisory board in which some officials from industry participate and suggest changes if required. After the approval of IAB, these CLOs are sent to Faculty Board of Studies (FBS). And finally approved by Academic Council Meeting chaired by the Rector which make them valid. These CLOs are checked through different tools which include midterm and end term exams, assignments, quizzes and Class presentations

The Clos for three courses of English language are as below:

Course Learning Outcomes (CLOs) for Functional English

CLOs	Description	Domain	Taxonomy Level	PLO
1	Identify the type of words	Cognitive	1	10
2	Change the voice/narration of given sentences	Cognitive	2	10
3	Create a story on the basis of given situation/ write an essay etc.	Cognitive	3	10
4	Participate in dialogue and volunteer to tell a story	Affective	2	10

Course Learning Outcomes (CLOs) of Communication and Presentation skills

CLOs	Description	Domain	Taxonomy Level	PLO
1	Define basic concepts and terms about Communication.	Cognitive	1	10
2	Transcribe the words phonetically	Cognitive	2	10
3	Compose a reference or resignation letter b	Cognitive	3	10
4	Participate in class presentations and volunteer to share knowledge in the class individually or as a group member	Affective	2	10

Course Learning Outcomes (CLOs) of Technical Report Writing

CLOs	Description	Domain	Taxonomy Level	PLO
1	Define different terms related to technical report writing	Cognitive	1	10
2	Explain different theories and barriers of communication	Cognitive	2	10
3	Write formal and informal reports	Cognitive	3	10
4	Participate in presentations and volunteer to share your knowledge in the class	Affective	2	10

ABET (2019) defines Program Learning Outcomes as "statements that describe what students are expected to know and be able to do by the time of graduation (Criteria for Accrediting Engineering Programs, 2019)

Pakistan Engineering Council (PEC) is the accreditation body which accredits the degree programs of Engineering offered by different institutions in Pakistan to implement the OBE. The institutions must develop a list of learning outcomes derived from the mission of the educational institution. The mission and outcomes depict the intentions of the institution, and the learning goals define how the degree programs demonstrate the mission which means that the learning outcomes describe the desired educational accomplishments of the degree programs.

Pakistan Engineering council follows the twelve PLOs described by ABET for its degree programs. The courses of English communication are mapped only on PLO-10 which is described below:

PLO-10: Communication

The 10^{th} PLO reflects the ability of the learners in their written and oral communications with society. It also shows their comprehension to design a document and write reports on any social issues and can deliver oral presentations in an effective way.

There are three domains of learning on the basis of which the outcomes are designed. These domains are as below:

1. Cognitive domain which deals with knowledge and mental skills.
2. Psychomotor domain which deals with physical motor skills.
3. Affective domain which deals with feelings and attitudes.

1.1 Statement of Problem

The curriculum designed for any course at any level has certain outcomes which are supposed to be achieved at the end of the course. Each course has some outcomes to be achieved but at the time of evaluation the performance of the students is not evaluated based on the set outcomes. In traditional marking, the evaluation is not done according to the outcomes. Even after the evaluation there is no set criteria to evaluate whether the course outcomes are achieved or not? The undergraduates of engineering study also study non-engineering subjects which include three courses of English language, Islamic studies and Pak Studies. As per the requirements of PEC the evaluation of both engineering and non-engineering courses is based on course learning outcomes. The courses of English language

which include Functional English, Communication and Presentation Skills and Technical Report writing are non-engineering subjects. This research is being conducted to evaluate whether the outcomes set for the English language courses are successfully achieved or not. In this study the researcher has evaluated the outcomes of said three courses in cognitive and affective domains. These two domains have been taken from Blooms Taxonomy model which helps the teachers in designing outcomes for each subject on the basis of action words. The OBE system was implemented in the Electrical department of NUML in 2018. Since that time no research has been conducted to check the effectiveness of the OBE in both engineering and non-engineering subjects. This research has been conducted to check the effectiveness of OBE system for the courses of English language which are non-engineering subjects.

In Pakistani context the implementation of OBE is implemented mostly in engineering universities. Some of the researches on OBE system have been conducted in Pakistani institutions working under PEC and NCEAC. These institutions are implementing OBE system as per requirements of PEC and NCEAC. These researches are either on engineering subjects or about the implementation problems of OBE in Pakistani context. Most of the researches have been conducted on the issues in existing system of OBE especially in the field of natural and medical sciences. No specific research has yet been conducted to explore the effectiveness of OBE and the factors which cause failure in achieving the course learning outcomes in the courses of English communication. This research has been conducted to address this issue so that it may prove as a guide for Pakistani institutions for the successful implementation of OBE

1.2 Research Objectives

The objectives of the research are:

i. To analyze the CLOs achieved through OBE system by the undergraduates of Engineering department NUML, Islamabad
ii. To explore the factors which cause failure in achieving CLOs
iii. To give recommendations for effective implementation of OBE for English communication courses

1.3 Research Questions

i. How far is the Outcome Based Education system effective in achieving the outcomes specified for the students of engineering?

ii. To what extent are cognitive domain and affective domain helpful in achieving the program learning outcomes for English language courses?

iii. What are the factors which cause hurdles in achieving CLOs?

1.4 Significance of the Study

The engineering department of NUML, Islamabad implemented OBE system in 2018. However, the effectiveness of the OBE system has not been evaluated yet. This study has been conducted for the first time in the engineering department at NUML to check the effectiveness of the OBE system for the students of engineering department .In this research the perceptions of the teachers and the students regarding OBE system have been identified on the basis of these findings, the researcher has given certain recommendations which can be followed by the different departments of NUML and other educational institutions for further improvements in academic quality.

It is aimed that this research will help other educationists to conduct similar studies in their respective institutes. Such institutes that are planning to implement the OBE system may adopt a proactive approach for seamless implementation. Moreover, it will also provide a basis for designing academic quality questionnaires for OBE systems.

1.5 Delimitations

This research is delimited to the undergraduates of Engg. Department of NUML. These students study the courses of English language as compulsory subjects. The department offers Functional English, Communication and Presentation Skills and Technical report writing to the students of first, second and fifth semesters respectively. This research is delimited to these courses only. The students of engineering study English, Islamiat, Pakistan studies and Arabic language which are non-engineering subjects. The researcher has delimited his research to only the afore-mentioned courses of English language.

CHAPTER 2

LITERATURE REVIEW

2.1 Definition of OBE

The development of outcome-based education can easily be mapped out from the advent of the movement in the early 1950s. Tyler highlighted the importance of designing curriculum and describing outcomes in a precise way in his book "Basic *Principles of Curriculum and Instruction"*. When these principles were defined, it was debated, the content's selection, its method and strategies of assessment would follow (Brady, 1996).

Bloom and Krathwoh (1956) developed the taxonomy for education in 1956 in which they provided a framework for writing outcomes and which helped the teachers to set this new tradition. Since 1960s, there have been a number of other pioneers as well who introduced learning outcomes which include competency-based education, criterion-referenced learning and the mastery learning. In these models the mastery learning is different from outcome-based education and cannot be considered as its synonym. Mastery learning is considered as the part of outcome learning. In other words, it can be said that it is one expression which can possibly be used while practicing an outcome-based background.

As for as the definition of Outcome based education is concerned, different educationists have defined it in their own way but the main theme of all definitions is that all contents must be well defined and organized and set objective must be achieved at the end of the course.

Spady (1994) describes that in outcome-based system instructions are well organized through which the students come to know about their performance. It provides the learners proper direction and the guidance so that they can root out their weaknesses and face the difficulties which they come across in their academic career. It also prepares the students for the challenges of future especially those who have command on the subject.

Outcome based system is contrary to the traditional system of teaching because in former method the students are the focus of the learning process where as in the latter the

teachers are the center of the whole process. To assess the performance of the students, outcomes are planned to be achieved by the learners. Their performance is measured through these outcomes. The above definition clearly mentions that the more focus of OBE system is on students. On the contrary in traditional method teachers are focused.

Spady thinks that the outcome-based education students' requirements are focused so that they can successfully achieve the outcomes before they leave the institution after completing their degrees. In other words, right from the beginning both students and the teachers are well aware of what they want to do within given time. In this process the curriculum is organized, clear instructions are given and the assessment is done in such a way that it assures that learning has taken place. He also believes that in outcome-based curriculum all the contents of a subject are designed according to the needs of the students. What is more important for the students is the focus of the curriculum. The curriculum must ensure that the set objectives must be achieved. He has defined OBE with the help of following four principles:

a) Clarity of focus

According to this principle the teacher must clearly focus on what they want their students to know, comprehend and response accordingly. During the tasks the teachers may assist the students to develop their personalities, knowledge and expertise which will ultimately make the students able to achieve those goals which are intended by the teacher.

b) Designing down

This principle emphasizes on the clear definition of all outcomes which the instructors want their students to achieve. If the teachers define all the intended outcomes clearly then they will easily achieve the intended results.

c) High expectations

This principle demands the teachers to set high standards of performance to encourage the students so that they can keep themselves busy in the process of learning to achieve the desired outcomes. Spady believes that successful learning leads to more successful learning.

d) Expanded opportunities

This principle demands the teachers to provide various opportunities to the students because it is due to individual differences all the students cannot learn through same method.

If the students are provided with the appropriate opportunities, they may achieve the high standards of performance intended by the teachers (Lixun, 2008).

Willis and Kissane (1995) describe the OBE as a process in education in which specified outcomes are tried to be achieved by the students individually. It is predefined and determined that what students have to learn, comprehend to be able to do anything given to them in their professional life. In other words it can be said that in OBE the curriculum is designed in such a way that it provides more opportunities to the students in achieving the outcomes. If in first attempt they do not perform well it is not the end rather more opportunities are provided against each learning outcome. They also believe that the said system is student centric in which all the activities are designed on the basis of outcomes to measure the understanding of every individual in the class. It also provides measuring mechanism to check whether the students have developed those qualities or not (Kissane, 1995).

Akir *et al.* (2012) are of the view that designing curriculum for a program, the focus is on those outcomes which are expected from the students to achieve after they have completed their graduation. The aim of this focus is to sharpen their skills so that they must have the necessary skills and capabilities before they join any place for their profession, instead of going backward with same contents which were designed for him. The outcome of a program and the outcomes of a course, the instructions which are developed for the students, method of delivery and appropriate assessments methodologies which are helpful for the suitable assessment. Online system and the support of technology can make the blended learning possible. It is basically done to promote active learning and find new domains of knowledge to increase the comprehension of the contents of a subject (Oriah Akir a *, 2012).

2.2 Implementation of OBE in various educational institutes

The Washington Accord, which was established in 1989, accredits the engineering programs for undergraduates whose degrees are recognized at international level programs. The degrees of these graduates have equal status in all those countries which are signatory and working according to the requirements of Washington Accord. Pakistan Engineering council (PEC) is one of the signatories which is accredited to the Washington Accord. For regular membership, the PEC implements OBE system according to the requirement of Washington Accord.

According to Mahmood (2015), PEC became a full-signatory member of The Washington Accord on June 21, 2017. To be able to get the regular membership status, PEC must implement Outcome based education (OBE) in its affiliated institutions in Pakistan.

Kurien (2022) considers OBE a learning approach and a learning philosophy in which organization and instructions of a curriculum are focused. In OBE a teacher wants his all students to exhibit those outcomes in their feedback or response at the end of the program when they are awarded the degree. It provides a model of instructions which is student-centered that measures the performance of the students through learning outcomes. These outcomes are commonly stated as a merger of students' knowledge, different skills, capabilities, outlooks and perception that a student will obtain as a result out of his/her engagement in educational process based on their experience which they get from an educational institution. He believes in routine arrangement of training centers around educator's inputs and assumes that learning has happened. There is no ambiguity on what is to be completely done by the students. It will never be done haphazardly. The OBE goes on in a systematic and well-organized way focusing on the students and their performances. In this system, the students are required to be involved effectively in the learning system and exhibit their abilities. The system demands the students to concentrate to their teachers and it also assists the teachers to understand the benefits of the system so that they implement it.

The accreditation of India with the Washington Accord was signed in 2014. It implies that an alumni from India can serve in any of different nations who have marked the agreement with Washington accord. For Indian educational policy makers and the Organizations working for national curriculum of India, it is mandatory to follow the Result Based Training (OBE) model. Likewise, NAAC is additionally now following a similar way and OBE has become a benchmarked as a norm for accreditation. (P.Kurien, 2022)

According to Rao (2019), many things, done in light of learning, are known as results of learning. The result-based instruction currently known as outcome-based education was proposed by Spady during the 90s to make the students center of the teaching learning process to what they realize rather than what they were taught. OBE is basically an organized training which provides opportunities to the students according to the set outcomes according to their needs. Availing these opportunities, they are demanded to exhibit all outcomes in their

performance. In his paper Rao presents a technique to compose results for general as well as advanced education programs. Results for an advanced education program are characterized at three levels as program results (PLOs), program explicit results (PEOs), and course results. The most significant part of a result is that it should be quantifiable and clearly visible which have been written in the best way in a clear structure of scientific classification of learning. Blossom's taxonomy model of learning is based on three areas of learning which are intellectual, emotional and psychomotor. It is highly recommended that the course outcomes should be composed following a distinct design based on activity, information about the components, conditions, and rules (Rao, 2019).

For the statements of outcomes, the teachers are required to use action verbs which have been given in Bloom's taxonomy model in three domains and different levels like describe, explain, design, or produce instead of giving a vague or hidden demonstration the main purpose of OBE is to generate outputs instead of inputs. In learning process, a student is the center and focus of the process rather than traditional approach which is based on lectures delivered by educators.

As defined by Spady (1994), outcome-based education means clearly focusing and organizing everything in an educational system around what is essential for all students enables them to do successfully at the end of their learning experiences. It means that in OBE the teachers know it very well that what they are going to teach and what is the purpose of each content. They also know about the topics which are important for their students. So, they initiate the teaching process on the basis of that clear picture which they have in their minds about their students and the purpose of particular contents for each subject, as compared to the organization, instructions and assessment of the curriculum in order to confirm that the process of learning will consequently happen. The fundamental standard of OBE is what the students learn, whether students learn successfully is more important than when and how students learn.

In other words, it can be said that while designing the curriculum of a program, learning outcomes are determined in advance and emphasized so that, the students after their graduation be well equipped with required skills and capabilities before their practical life in any profession, instead of going backward with same curriculum, its outcomes of each content and program outcomes. The improvement of instructions, the modes of delivery, developing

instructions and suitable methods for assessments help the learners to achieve the designed outcomes. One of the methods to complement delivery of content under OBE is through merged learning which can be made possible by the help of latest technology. This is done to inspire active learning and discover new domains of knowledge in the process of improving the understanding of each content of the subject.

Malan (2000) believes that demand for the improvement of quality and talented graduates is to fulfil requirement of industry, has led several countries to bring reforms in their educational system and its structure. Many other reasons which cannot be ignored for such reforms, are mainly due to the pressure of political parties and groups which have become lobbies, they support outcome-based education OBE.

McNeir (1993) differentiates between early movements which were started to bring reforms in education system. For this purpose, he introduced and defined OBE, to explain how it differs from earlier movements such as Competency-Based Education (CBE). She presented different responses to OBE and observed that despite the fact that there were many contradictory views about potential of OBE is still being implemented in different parts of the world. Implementation of an OBE system is passionately challenging and requires changes in nearly every aspect of school operation. She notes that a common drawback for educators is failure to fully adapt and implement the process. Instead, the philosophy of OBE is often superimposed onto a system which already exists in form of curriculum and methods. Even when a change is welcomed, the educationists and the teachers face the problems of gathering support and aligning the goals of academia according to legal support which is required to implement any policy. She observed that teachers decide drafting exit results as the most complicated and troublesome aspect of the implementation interaction and the most noteworthy to progress. Professionals note the significance of including all sections of the performance sheets in creating obviously different results, since these results will at last reflect different aspects of the student's personality. Instructors pointed out many other difficulties when an OBE framework is implemented. Looking for a harmony between educational plan content and the OBE cycle; the reforms in study shall allow to extend instructive freedoms; and making new strategies to evaluate the students' performance. Result Based Education suggests plainly centering and coordinating everything in a useful framework around what is

fundamental for all learners to avail the option to perform in an effective way till the end of their courses. It recommends to initiate with a reasonable image of what is important for the students to avail the opportunity provided to them to coordinate educational program, provide guidance, and make assessment to ensure this adapting of OBE will eventually occur. The key features of OBE as pointed out by (McNeir, 1993) are:

a) Through developing a system consist of outcomes in form of a clear set around which all of the components of a system can easily be focused.
b) By establishing different conditions and some opportunities within the system can be helpful for students to be able to achieve the required goals. It will also motivate the students in achieving these goals.

Outcomes are basically learning results which the teachers want their students to show at the end of their programs on the basis of their experience. They are not like moral values, or beliefs, different attitudes, or different psychological states of human mind rather these outcomes are related what students can actually do with what they know and have learnt. They are the actual application of what they have learnt. This indicates that outcomes are actions words and response of the students that represents and reflects the competence of learner in using content, different information, new ideas, and successful use of tools. Once the learners have done important things on the basis of their knowledge, it proves a major step afar from knowing itself. She claims that teachers continuously make their efforts to improve the quality of education in America's schools. They are well equipped with a series of tools and multiple methods which are used for improvement. All these tools have their own characteristics, advantages and challenges. Outcomes-Based Education (OBE) is a model which is adopted for the restructuring of educational system has been supported massively and lot of attraction-in past few years. Traditionally, instructors have measured the learning of the students in through standardized tests. Whereas outcomes-based education describes learning as what students can perform or exhibit based on what they know. Instead of specifying the requirements of the contents, the curriculum of OBE is extracted from a set of extensive and comprehensive, futuristic goals designed which make the students able to perform effectively in their lives after their departure from the school. OBE is based on the idea or notion that all the students should be successful at the end of the program because it is a continuous process in which the students are required to continue their efforts until the outcomes are achieved. Those who criticize it,

blame that OBE seeks to impart the values rather than skills and knowledge, and that it works what amounts to modify behavior to force the students to adapt. On the contrary its supporters and followers believe that it is a shift of focus from teachers to the students which means that it is student's centric approach (McNeir, 1993).

According to Spady (1994), old traditional approaches of education are unsuccessful and unfavorable because they are organized in such a way that often exclusively nearby the calendar and the clock. A teacher completes a given amount of study material for a particular span of time and it is taken for granted that learning has taken place. When time is the perpetual, learning of students becomes the variable which changes according to the situation. Mostly the result of such dominant practices is like a curve which is bell-shaped and reflects a few students who excel. A few who fail, and a majority who achieve an average or below-average levels whereas OBE supports a success-for-all.

As pointed out by Iqbal (2020), improvements in OBE and new inventive changes in its instructive methodologies have brought a significant change in the learning process of educational plans in educational institutions. This educational plan has acquired learning because of its effective methodology. The practice of OBE has effectively contributed a lot in the clinical practices. Be that as it may, OBE execution needs coordinated oversight and staff preparing to accomplish the ideal outcomes for the program. The OBE approach comprises of learning results which are explicit and it needs effective implementation. Persuasive assessment requires certain limits that fill in as a manual for study the level of OBE to implement the plan of educational. It is an incredible apprehension which does not give any guarantee that personnel can perceive the worth of OBE and its powerful application in the classes to achieve the goals. Institutions must organize faculty development programs for improving the skills and attitudes so that it can implement OBE. This proposed instructional cue or hint which may be universal to all those programs in higher education which are stuck in an outcome-based curriculum (Iqbal & Shazia, 2000).

Mamary (1991) recommended eight key principles of outcome-based education. First, the educational institutions are required to develop and sharpen learner's talent. Second, they should make sure that the learners achieve success in the whole learning process. Third, trust-based environment must be established among the educational groups. Fourth, whole learning

for all must be supported or appreciated. Fifth, educational institutions should discourage unfair judges because mainly the purpose is to help them in sharpening their skills which are beneficial for them in their future lives. Sixth, the learners should be enabled to cooperate with each other in an effective and meaningful way. Seventh, all learners need to participate actively in whole processes of learning. Last, an environment of trust should be embedded within the teaching communities to give the guarantee to all learners that they can learn the subjects well (Wijaya, 2020).

Tuyen (2018) conducted a research to investigate the level of satisfaction of the undergraduates who were learning English language as a foreign language to improve their skills which include listening, reading, speaking and writing. In this study the perceptions of the undergraduate about learning activities and different tasks for assessment which are done in the class room, were also evaluated. For this purpose, a sample of 391 students was taken and the data was collected with the help of questionnaire contain both open ended and closed ended questions. The findings of this study show that majority of the students i.e. round about two-thirds was unsatisfied with their learning outcomes. They did not give positive response even in learning activities and those tasks which were conducted by the teachers to asses them. Such tasks are routine tasks other than scheduled exams (Tuyen, 2018).

On the basis of above results, he gives certain recommendations for the teachers so that by following them the teachers may achieve the goals. He recommends that the teachers must have a sufficient knowledge about outcome-based approach so that the desired outcomes may be achieved. They should have clear perception about the learning outcomes of each course and should know how to syndicate instructions with assessments while conducting a class. In this way learning activities as well as tasks for assessment may help the students to achieve the desired learning outcomes.

Lixun (2008) conducted a research at The Hong Kong Institute of Education. This research was done in the English department with the purpose to develop and pilot the OBL in the B.Ed. (EL) Program. For this purpose, a questionnaire was designed to check the qualities of Teachers teaching English language in which there were 30 items through which the researcher wanted to explore from the respondents about their expectations of teachers' skills and knowledge for teaching English in Hong Kong. The said items were developed on the basis

of literature that was relevant to their study which was internally reviewed by the team members of OBL project. The tool in form of questionnaire was designed to survey the principals of schools and teachers of English language who were teaching in the schools of Hong Kong. The researcher also selected a random sample of 50 schools of primary level and fifty schools from secondary level. The researcher sent five copies of his questionnaire t to each school by mail with a covering letter. The respondents for this study were the school principal, the Panel of English chair/s which coordinated the programs of English language in a school and two to three English teachers who were well experienced. According to the level of the schools. The researcher sent the questionnaire to 500 respondents in 100 schools of Hong Kong. He gave six weeks to respondents to fill the questionnaire and requested them to return them it through fax or mail.

OBL has earned importance in numerous countries of the world, especially in Hong Kong. The teachers and those who make educational policies believe that OBL is helpful for learners because they can concentrate on learning outcomes if they are well defined. They can also know about their future what they can do after their terminal degree or course which makes the process of learning student-centered. The teachers should think from student's perspective instead of concentrating on the contents which they want to teach, and they should also pay attention on how learners can achieve the outcomes in an effective and proficient way with the help of their teachers. The implementation of OBL in an effective way, it is mandatory to make a set of basic outcomes according to the level of institution, and then accordingly create a set of programs learning outcomes which are mapped properly against standard outcomes in a proper way. For each course and its level, the instructors are required to design intended learning outcomes based on the program learning outcomes, and make sure that the all strategies for both teaching and assessing are aligned closely with intended learning outcomes of a particular course. The preparation such basic work in advance is needed before the implementation of OBL system successfully. But at program level, the procedure of reformation of the whole framework related to teaching and learning is very useful and helpful, because the program team can clearly observe and fore see the types of graduates going to be produced by them, and what are the requirements which should be followed in producing such graduates.At the end of this whole process, students will also be aware of their capabilities and expertise which they can use in their professional life to be a successful professionals of their

field. Moreover, in their practical life, these graduates will be able to present all those outcomes to their employers which they have achieved. The clarity of the students and their concentration will be helpful for the employers which can be availed by the employers for further improvements (Lixun, 2008).

According to L. AN (2014), the outcome-based education provides a method for teaching in which the focus of teaching is only on students so that it can be predicted that what they will do after learning the outcomes. The curriculum is designed in such way that it provides a facility to both teacher and learner to achieve the desired outcomes so that it may lead both to the planning of future. This notion of OBL is totally different from old methods of teaching especially the traditional one. In OBL curriculum is created on the basis of outcomes which ultimately and eventually support the same outcomes which are intended to be achieved.

She proposed another model that addresses to the difficulties that took place recently in different cultures especially in new colonies or communities. This proposed scholarly model is combination of result driven and the conventional Grade point Average (GPA). The learning results are utilized all through the scholastic existence of the students at all stages. These results are often obtained from the vision of academic institution of conferring information and the abilities which are needed to the learners to empower them with knowledge that is deeply rooted and long lasting for the students. The structure utilized by the scientists comprises the scholastic model made out of these modules: advance courses should be installed and for better learning results; learners and workforce should be furnished with PCs and laptops should be provided in halls to create an academic environment which will definitely motivate both learners and instructors.; a centralized system should be organized or managed for learning and the assessment of undergraduates. This process should be formed as an academic network which must be extensive and fulfil the requirements of the learners. These learning networks are viewed as liable for exploring and adjusting the Academic Program Model, and incorporate the individuals from inside just as the outside of the scholarly world. Towards the end, the students should foster electronic portfolios to show their accomplishments. This paper shows how innovation can be utilized to work with the learning. It additionally addressed the process of evolution how this evaluation is utilized to make the learning results part of the curriculum

successfully. The paper additionally portrays how learning results are utilized in the advancement of a data frameworks educational plan.

King (1991) finds no difference in competency-based movement and outcome-based education. In the late 60s the former considered it as a must to the changing trends of job in market, when people were asking whether education was playing its role adequately to prepare the students to face the challenges of life. But Spady who is considered the prime mover of OBE, claimed that the designing of competency-based education (CBE) should be based on combination of outcome goals, instructions based on experiences, and devices which are used for assessments of the students. This definition, was considered more ideal than what was actually came out of the practice. However, main feature of the OBE is focus on achievable outcomes by the learners and this uniqueness makes OBE different from other reforms which took place in education. The OBE urges the instructors to express their feeling about what is more important in academia for the learners. For this purpose, they must introduce advance resources, methods and technology in the life of students. They must make sure that the said facilities are availed by them in their true essence and spirit so that the students may get maximum benefit out of them to achieve the learning outcomes otherwise there will be no difference between OBE and CBE. So King is of the view that it is the responsibility of the instructor and the institution to make it sure that all claimed resources available in the institution are utilized by both teacher and learner and the desired outcomes are achieved.

Asim (2021) wrote a review to see the effectiveness of OBE system. His review was based on different research works conducted in different countries which include Hong Kong, Malaysia, Philippines and Canada on OBE. He wanted to highlight basic factors which influence the students' learning outcomes. He collected the data from almost 700 students studying in different disciplines which include medicines, management sciences, accountancy, software engineering and social sciences etc.

The essential point of this study was to assess the impacts of Outcome Based Education and significant elements that could affect the learners' result. This research paper in form of a review has pointed out various elements regarding role of educator in planning the educational program in schooling so that it creates a learning environment which may determine how to provide an essential support to the students to acquire the required information on the basis of

sharing knowledge so that they can achieve their goal, support to the students, to acquire information from one another and to give input all through the scholastic talent. The survey centered those hidden realities which OBE approaches show impacts which can further sharpen and develop abilities of the learners. Anyway, still it is being said that there are many other approaches which are needed with more prominent example to make any judgments about OBE. In addition, there are some weaknesses in such review reports estimating the results connected with fulfillment level of students and extensive comprehension of the execution stage, concerns in regards to the stretch of time alongside the unwavering quality of evaluation. The surveyed investigations have specific weaknesses, for instance, the need generalizability to all instruction higher organizations. The writer recommends the future investigates to consider over this danger to the legitimacy and lead such examinations which can be summed up. One of the important discoveries of the writing is to bring up those variables which make boundaries for Pakistani students particularly the issues of capability which they face in Pakistan.

The significance of this review on OBE is that it can be helpful for all stake holders like different authorities concerned with education which include teachers, students, parents and their community. In long run it can also be useful for those who make policies for education, committee of curriculum designing and departments working for education. The direction can be determined by the instructors which can be chosen by them for further betterment. It will help the teachers to use it as a tool to get guidance from it to implement OBE. This review can also be utilized to monitor the process to check if standard goals of education are being fulfilled or not. It is also helpful in determining the maintenance by the end of an academic session. The students in advance can easily identify if they can accept and adopt OBE which is different from the traditional method. For them it is something new way of teaching which is based on an approach which is adopted for the learning of the students which measures the outcomes at the end of the session. Even parents and the lay men can assess whether outcome-based education has advantages for the learner and can be helpful for them to be highly skilled professionals and respectable residents of the country. If parents have surety about the competence of educators and their knowledge to implement OBE in an effective way, then it will make them hopeful about the bright and successful future of their children. They will also be sure about that their children will be flexible enough to change

themselves according to the changing demand of the time. So, it will be helpful for parents whenever they would like to interact with the teachers of their children in their learning process they would be able to do so. Another key feature of this study is its usefulness for the learners to avail opportunity of learning effectively by keeping in mind different ways of learning and their own capabilities to achieve the designed outcomes. The performance level of the students is subject to the curriculum. If it is well defined, it will be reflected in their performance (Asim, 2021).

Kaliannan (2012) conducted a research at UiTM to measure whether the students understand their subjects. For this purpose, he prepared two different questionnaires. Two evaluations of the same subject were conducted. Pre-evaluation of subject was conducted before telling the students the outcomes of their subjects and their understanding about each outcome. The post-evaluation of the subject was conducted after telling them about the learning outcomes and their purpose. He analyzed the data collected through survey forms. He used the COBES method in his analysis. He took a sample from a class consists of forty-four students who were diploma holders and were enrolled to study the subject. The instructors who were supposed to teach this sample of diploma holders guaranteed that same students will be considered for the survey for both pre-and post-appraisal which were intended to measure the comprehension of the subject by these understudies. In this investigation Kaliannan reasons that execution of the OBE strategy has been accomplished its ideal results and the understudies can gauge their own agreement and capacity for every one of the subjects that they take. They are likewise ready to assess their own accomplishment for the subject as far as their efforts and time which they put resources into that specific the semester. He additionally observed that, instructors had the option to check their presentation which assisted them with going to specific lengths for additional improvement in their educating and learning strategies. Be that as it may, the OBE execution can be additionally improved and upgraded on the basis of the results obtained through the surveys. It is a framework which is adaptable on going in different parts of the world successfully. He, towards the end urged the executives of education and teachers to persuade and advance OBE consistently in all semesters so it can support the energy and which will thusly assist them with accomplishing the expressed results.

Liew *et al. (*2020) conducted a research to judge that which model of assessment is more useful to evaluate the effectiveness of OBE. For this purpose, the data was collected from the available review on the literature written on OBE, and different official documents about the analysis and record of accreditation bodies and visit reports of higher learning institutions. In this article the author has proposed an approach which is based on a model named comprehensive culminating assessment. This paper has exposed that the afore mentioned model should be considered the most suitable approach model which may be used to measure program outcomes because it represents the actual feedback of the learners. According to him it is possible with a list of key-selected courses to demonstrate the attainment of outcomes among the students such as specialist engineering knowledge courses and other newly emerging courses described in this paper (Liew, 2020).

Sreekanth et al (2015) conducted a research to highlight those challenges which come across while shifting from traditional educational system to the outcome-based education system. The tool *Think, pair, share* was used in the experiment for cooperative learning. For this purpose, class of 60 students who were studying in the department of mechanical engineering was considered for this experiment. In the first phase of this experiments the students were supposed to think on the given topic in big hall but it was observed that most of the students were found less engaged. In the second phase they were divided into pairs where majority was seen involved and in the last phase when they were in groups to share their ideas with each other. It was observed that most of them were able to understand the idea given for discussion. Then the faculty asked the students to volunteer for discussion. The volunteers were divided into small groups where they could openly discuss. Through this experiment the gap between faculty and the students was bridged up. In this experiment the students displayed their communication skills and were seen more confident. The researcher concludes that in OBE system the teachers have more tools to apply in the class to get better results where as a traditional education system is not as much flexible to apply multiple tool. The writer recommends OBE to those institutions which are desirous for the accreditation.

Jadhav et al. (2020) conducted a research in India to find out impact assessment of OBE in Indian engineering education. For this purpose, a questionnaire based on open ended question was circulated throughout the country. In response to this questionnaire, 1246

responses were received. The collected data was analyzed with the help of pie chart. The author concludes in his paper that Outcome based education has become the need of hour through which the quality of engineering can be improved in India. For the recognition of engineering degree at international level OBE has been adopted by institutes, but they have to overcome those challenges which are involved in its implementation. The data shows that in India, OBE is making its room so rapidly. So, the concern authorities must think to update the curriculum accordingly and develop an environment where the system can be implemented effectively. The paper also suggests that for teachers training sessions must be arranged so that the teachers may implement this system as per requirement.

Kamran et al. (2020) conducted research in Riphah International University, Islamabad, Pakistan. It was a case study. The approach of this study was to highlight the major requirements of OBE system for a program of engineering department. The implementation of OBE system was done successfully in alignment with mission and vision defined by the university through Program Educational Outcomes (PEOs), Program Learning Outcomes (PLOs) and the Course Learning Outcomes (CLOs). For this purpose, a survey was conducted in which the feedback of the alumni was considered on the basis of program education outcome. For this purpose a survey was designed which consisted the profile of organization, alumni's profile and other attributes which were evaluated. The scales of these attributes were excellent, good, fair and, poor. The bio data or the basic information of those who provided the information, was kept secret. The collected data was analyzed with the help of a software named SPSS. According to the findings of the survey the results were quite reasonable and acceptable for being satisfactory because they fulfilled the attributes and related concerned PEOs. The alumni were also interrogated about the achievement of the PEOs in the feedback form of this survey through Likert scale which had options such as not achieved, slightly achieved, most of them achieved and completely achieved. On the basis of their experience, they were requested to recommend any change in the PEOs if they feel like that. The results of this case study indicate that in the OBE system students have central position of focus which measures the learning outcomes of the program in a true meaning and essence. The key stakeholders: teachers, undergraduates, employers, parents, the institute and the parents, all play a vital role to implement OBE system and reform it if required. To strengthen the link between industry and academia, the PEOs were improved. The feedback of both alumni and

employer was considered. The program learning outcomes which were aimed, successfully achieved which is actually the confirmation about the achievement of the PEOs, vision and mission of the university. The researchers claimed that their work would prove a guideline for those institutes which intend to implement the OBE under the Washington accord which accredits Pakistan Engineering Council.

Sukerti (2020) conducted a research in which he employed four stages of a model developed by Thiagarajan. The fourth stage of this model i.e. Disseminate phase which was excluded. The four stages of this model are: define, design, develop and disseminate. The fourth stage of this model i.e. Disseminate was excluded. Define phase is concerned with formulating planning; design phase is about developing teaching and the evaluation materials; develop comprises of assessment and response to reciprocity. The fourth phase incorporates the process of printing and distribution of materials about teaching. In define phase, various kinds of analyses were conducted. For this purpose, need analysis was done with the help of questionnaire which was distributed among students the students of second semester studying in informatics management program in order to evaluate their responses on the needs, shortcomings and their desires. Another analysis from alumni for the feedback was conducted. The results were used as the basis for the planning process where the syllabus is designed and reviewed by using a backward curriculum design. In this study learning outcomes were put in a sequence according to the vision and mission of the institution, vision and mission of the study program and feedback of the graduates. The curriculum reflected the strategy of learning and planning to achieve the desired performance, as well the assessment of obtained results. These results obtained from the first stage were used for making further improvements in the design phase. In twelve meetings the teaching material was written on the basis of four modules with 12 units overall. Each chapter was explained in term of theme and each meeting focused on those abilities that must be achieved by learners. Different learning activities were organized and implemented on the basis of the OBE framework in which these activities were carried out based on students' achievement which were targeted in the syllabus. The teaching method was used on the basis of hybrid system in which online and face-to-face meetings were held in one integrated learning activity. For the development of teaching materials and learning activities a backward design was implemented. In the last stage of developing the assessment process of learning outcomes, testing of the teaching materials produced was produced

practically. In addition, a response process for improvement was also managed where the results of assessment, validation and testing were concluded which were used for the improvement and revision of the teaching material. The validation process was comprised of two things including validation of both content and construction. The content validation was used to evaluate whether the instructional material designed was relevant to the syllabus and hybrid learning teaching methods whereas construction validation was used to evaluate whether or not the teaching material components were relevant to the stated outcomes. For the purpose of validate the same teaching material, an expert judgment was used in the related field. On the basis of above research, the writers concluded that OBE highlights the significance of strengthening and motivating learners so that they can play their roles in future. It helps the teachers to maintain students' motivation for multi challenges in their academic career and to get ready for different multi-dimensional tasks, all communication and discussion topics originate from real cases they may confront in their future study and work.

Li (2020) attempted to apply the guidance model which was dependent on OBE to a unit instructing to an eight-week test for eight educating hours. The examination subjects were senior students of two classes in Grade 2 of a center school in Henan Province. To collect the information, the subjective and quantitative examination were conducted with SPSS 17.0. In the meantime, understudies and educators were reviewed which happened previously, then after the fact the test to show their mental input and real changes during the showing try different things with OBE. Through the research and its analyses, the accompanying discoveries were acquired: First, of all the current state of English composition was considered which was being used in Chinese secondary schools. The English composition model with OBE was considered for the study to sharpen their capacities in creative writing. In order to notice the changes in the writing abilities of the students, the teachers used the writing instruction mode with OBE. For this purpose, two writing tests were conducted during the experiment. At the end of the experiment pre-writing tests and post-tests were conducted. The performance of the students was calculated by the teacher which was considered as experimental data. The total score was divided into five levels which consisted grammar and vocabulary application, structure of the composition and content. In this study the writers found that, the OBE focuses the students instead of the teacher, and this focus on the students is cultivating their' practical application and a wholesome development in their capabilities. The

outcomes of teaching, contents of teaching, procedures of teaching, methods and strategies of teaching, all play an important role in meeting the real needs of the students in their future life and the society or community where they will spend their lives. In the procedure of teaching with OBE, the instructors not only pay heed to the results of students, but also focus on the training of students in other skills which include listening, speaking and reading, along with sharpening their abilities to use English for communication in real life. The students can avail more opportunities to learn, master and practice their corresponding abilities both in class or extra-curricular activities.

Secondly, the outcomes of teaching with OBE were absolutely clear and specific, which were helpful for both teachers and students to implement them in true sense and achieve them effectively. The teachers should prefer to help his students in establishing a series of the intended outcomes, to determine both outcomes and abilities which will be achieved by the students after learning. At every step there is a clear objective, which strengthens the goal of teaching and it helps to improve the professional teaching efficiency of the teachers.

Thirdly, this philosophy has no rules for the teachers in teaching the contents of the subject, methods of teaching and strategies, and the learning approach of the students. The teachers in this regard can assist and guide his students to make utilize all resources to select, increase and integrate contents according to the designed outcomes. It will be helpful to the integration of inter-disciplinary and intra-disciplinary contents, and it will also be more advantageous for the students to incorporate, comprehend and control of knowledge. Flexibility that is one of the key features of OBE, also helps teachers to change their minds, utilize their energy and creativity, design teaching activities lively, and also improve both teaching and learning efficiency. Finally, the assessment with OBE is more specific, explicit, and effective, which ultimately helps both educators and students to judge the situation of teaching and learning in a clearer way. To evaluate the abilities of students' OBE plays an important role. It also encourages teachers to evaluate the students through different methods and provides opportunities for students, to guide them so that they can achieve the intended outcomes. The self-evaluation in the class, students' mutual evaluation and formative evaluation of the lesson may help them to conduct self-assessment in a timely way so that they can timely make up their weaknesses (Li, 2020).

Yang (2019) conducted a research on the hybrid mode based on OBE. In a class of ESP, the research was done on the blended teaching and learning construction of ESP Courses. It was a case study and the researcher wanted to suggest certain reforms which could be helpful in achieving the outcomes. For the said purpose he took the course of *IT English* as the case study, the paper constructed the resources of the course and designed the teaching & learning process whose main objective was to satisfy the requirements of blended teaching & learning and bring improvements in the learning effect of students. A complete study guide was provided to the students for each unit, which clearly specified the teaching & learning arrangement clearly before teaching them during and after each class. So that the students could use the course resources effectively which include courseware, exercises for reading, micro courses and extended learning materials, etc. to organize learning activities in reasonable way to achieve the learning effects in a better way. The researcher in his paper hoped to throw light on studies based on blended teaching. The courses offered to the students of ESP in their study which was conducted on three different aspects which include strategies, activities and resource guides. The study concluded that sufficient learning resources and specific learning guide should be provided to students before, during and after teaching and learning process, which could be achieved through blended teaching and learning reforms of the course. Clear and comprehensive guide is essential for the students before and after the classes for students so that they can understand the whole learning process and methods. All the resources should seem fascinating and inspiring, so that they can arouse students' learning passion and yearning. Based on the educational theory of OBE, blended teaching & learning is supposed to provide the sufficient learning resources for students to conduct learning independently. However, it is quite critical in all cases for the teachers to monitor, control and evaluate students' learning process and offer feedback and warnings, for students to persistently improve learning effects of ESP courses (Yang, 2019).

O'Neill (2008) examined how different initiatives which influenced those parts of Western Australia where English language was being taught. They with some particular reference proposed evaluation regimes, and considered outcomes-based education (OBE), which provided a model known as interpretive model for guiding the change. This model was implemented from 2002 till 2008. In their research they introduced a new direction for the teachers so that they can prepare their students. Instructions were simplified by dividing them

into three sections and for each section they introduced extended response to overcome the criticism of providing for limited written responses. This research was conducted on three basis which include reading outcomes, writing outcomes and viewing outcomes. In the first section of the paper, the authors examined the Reading skills of the students. They assigned his students an exercise which he selected from a novel, *The White Earth* by Andrew McGahan, is both rigorous and worthwhile. In second section of the paper the students were asked to write the answer for the question that which parts of the contents should be inclusive or exclusive but the instructions were same like the first question of reading in section one. In last section a visual was shown to the students and they were asked different questions about cultural values social relationship etc. They concluded that under an OBE system, the little concurred comprehension with respect to the center of the educational plan has brought about the shortfall of a reference point for creating acceptable assessment bonds. It might in any case not too late to carry more prominent degree of plan to the whole course of educational program advancement in Western Australia. A decent beginning stage may be an examination of OBE itself as the hypothetical device for interpreting the idea of educational program (Berlach, 2015).

Thobedi (2004) states that Outcomes-Based Education (OBE) approach had been introduced in schools in South Africa to improve the process of teaching and learning at school level. The approach brought advancements in schools especially along with the improvements in pedagogy. In their research the focus was on English as a second language (ESL) for the students of Grade eight. Their main focus was on those schools which were called “previously disadvantaged schools” situated in the Black township areas Africa. The implementation of OBE in South Africa proved a meaningful teaching in which the outcomes were successfully achieved. The implementation of OBE was an attempt to kick out the last remnants of Apartheid education. With the help of OBE approach, different tasks were designed with an aim to empower the students with required skills so that they may succeed and meet the challenges in the practical life after leaving schools. One of the main aims of using a language is to develop competency in communication which is actually an ability through which they can apply their skills of language correctly in both formal and informal situations. English language is though the first language of 9% citizens of Africa. For their study the researchers used qualitative research method in their study. To conduct their research, semi-structured

interviews and observations were used as research tools. This research was conducted on ESL for teaching and learning for the classes of Grade eight. For this purpose, the researchers selected five secondary schools randomly which were situated in the township of Thabong in the Lejweleputswa District, Free State Province in South Africa. It was the sole purpose of the researchers to choose settings that could address the scope of involvement on the peculiarity in which they interested. They noticed in this study the significant difference in the learning outcomes achieved by the students of these schools. The findings of their study on ESL teaching and learning for Grade eight classes indicated that many deficiencies and issue of ineffectiveness occurred in most of the classrooms. The findings confirmed that the students of Grade eight ESL learners face many problems with ESL due to lack of basic facilities to implement OBE. They also pointed out that advanced strategies were not sufficient for both teachers and students.

The above deficiencies could be overcome by implementation of outcome base education in these schools. The ESL educators were confident enough in confirming that education in South Africa had been transformed and that the OBE approach represented meaningful change in schools of South Africa. They further found that many ESL educators were still using traditional way of teaching. The issue was pointed out by the fact that the educators of ESL did not seem to have a relevant and proper knowledge of teaching strategies that could be used in the teaching of ESL, especially when there were huge classes of students. Their research concludes that continuity in-service training in OBE has significant role to play for efficient teaching and effective learning (Thobedi, 2004).

2.3 Implementation of OBE in EFL

Another research was conducted by Wijaya (2020) to see the impacts of Outcome based education for EFL learners. In this research the data was collected through qualitative method about the effects of outcome-based education on EFL learners' autonomy in an introductory class of education. In the first phase of data gathering, she described some particular phenomena which was associated to the implementation of outcome-based education in the introduction to education class. The specific outcomes of the observation were combined by the researchers to describe the better pictures of outcome-based education. She also used survey to gather particular responses from the Students of English Education class who were enrolled in an introduction to education class. To get better and authentic classroom data, she accomplished the data collection

on weekly basis through online report of introduction to education class to find out whether outcome-based education was already promoted fruitfully or not.

The findings of this research recommend that all students of EFL who are teaching in teacher-course experiences should adopt and implement outcome-based education to stimulate a greater degree of contentment in learning. She also suggested that all learners should be engaged to participate in distributing an ample collection of knowledge, and increase more stimulating awareness for the teachers so that they can evaluate themselves to check their practices which they apply in teaching learning process (Wijaya, 2020).

According to (Spady, 1993), learners should create meaningful processes in outcome-based education by designing solid learning products. He collected two paths of outcome-based education. First, he emphasized on learners' proficiency in the field of particular subject. Second, the learners can prove as a source of changes in their specific communities where they are living by incorporating the knowledge which they have acquired through practical learning. In other words, outcome-based education produces learners for long long-lasting time who are attentive and always get ready to identify a number of phenomena on daily basis. In this way, the learners will be able to sharpen their specific abilities to achieve their outcomes in their lives and promote effective and major influences on their communities (Wijaya, 2020).

Brady (1996) claims that most of the clues about OBE system are derived from the literature of United States. In initial years of 1990s an emphasis on learning outcomes of the students was organized in the educational institutions of America, and was also provoked by the teachers, students of higher classes and politicians. To improve the proficiency of the students in learning process, they all demanded that the OBE system should be implemented for the said purpose. They wanted authorities to refocus school programs so that the learners may demonstrate proficiency in outcomes which were designed in different disciplines in different classes. For this purpose, at national level a process was adopted to describe outcomes in major subjects by the United States, but as (O'Neill, 1994) claims that the process of outcome-based education was delayed by a movement the face of opposition which was mobilized by numerous conservative groups.

The Minnesota State Department of Education proposed more structures according to general definition of OBE that it is learner-centered and on the basis of results, it is believed

that all the individuals can learn. This system has certain features such as clear identification of outcomes, the progress of learners is based on their exposure what they learn, the system has been designed in such a way that the problems of all students are addressed individually and certain strategies are always available to solve their issues. They are provided by more opportunities so that they can utilize their potential to optimal level (Brady, 1996).

Ortegal (2016) conducted the research in a state university in America. The research design of their study was descriptive-correlational which they used to examine that how far the instructors of English language were either accepting or resisting the education approach which was intentionally implemented to impart the knowledge in one of the State Universities. For this purpose, they gathered quantitative data with the help of survey made by researchers which was analyzed by using the software SPSS. Relationships of different variables with one another were determined by using Spearman's rho test. A sample of 15 respondents was selected through purposive sampling technique who participated in answering questionnaire. The questionnaire was authenticated by the subject specialists. The instrument used in this research was based on pilot testing to five professors of English who were other than the sample. The first part determined responses of population in terms of gender, their age, their highest qualification, academic status and teaching experience. In the next phase of the study, 25 attitudinal statements were composed which reflected their knowledge, their feelings, their beliefs, , enthusiasm, and level of acceptance by the teachers of English language to adopt OBE which were measured by using the four-point Likertscales and its range was from strongly disagree to strongly agree. The study proved how the focus has been shifted from the instructor to the students. However, the said shift needs change within educational system so that it may facilitate the process of learning. They concluded that by establishing an OBE system in an educational institution, is the best way for a learner to achieve the desired outcomes. A teacher is expected to motivate all learners and enable them to achieve outcomes while the learners actively participate actively in the classes and add something in the process of learning. However, the role of the teachers must be supported and encouraged by the employer and certain individuals who are enjoying the high status in the institution. OBE demands the institution to continue the programs of professional development of the instructor. The success of OBE is hidden in collaboration and harmony between human and available material resources (Ortegal, 2016).

2.4 Summary

Outcome based system is contrary to the traditional system of teaching because in former method the students are the focus of the learning process where as in the latter the teachers is the center of the whole process. To assess the performance of the students, outcomes are planned to be achieved by the learners but the main theme of all definitions is that all contents must be well defined and organized and set objective must be achieved at the end of the course.

Spady who is considered the pioneer of OBE, believes that OBE provides the learners proper direction and the guidance so that they can root out their weaknesses and face the difficulties which they come across in their academic career. It also prepares the students for the challenges of future especially those who have command on the subject. He thinks that the outcome-based education students' requirements are focused so that they can successfully achieve the outcomes before they leave the institution after completing their degrees.

Willis and Kissane consider the OBE as a process in education in which outcomes are specified and attempted to be achieved by the students individually. In this system it is determined predefined that what students have to learn, understand and perceive to be able to do anything given to them in their professional life. In other words, it can be said that in OBE, the curriculum is designed in such a way that it provides more opportunities to the students in achieving the outcomes.

According to Malan the demand for the improvement of quality has led several countries to bring reforms in their educational system and its structure. Many other reasons which cannot be ignored for such reforms, are mainly due to pressure of political parties and groups which have become lobbies, they support outcome-based education OBE.

Similarly, McNeir recommends that an initiative must be taken with a clear and reasonable image of what is important for the students to avail the given opportunity which is provided to them to coordinate educational program, provide guidance, and make assessment to ensure the adaptation of OBE will eventually occur.

Shazia, in her research on effectiveness of OBE system concludes that for the successful implementation of OBE system, institutions must organize faculty development

programs for improving the skills and attitudes of both teachers and students. This proposed instructional cue or hint which may be universal to all those programs in higher education which are stuck in an outcome-based curriculum.

To check the effectiveness of OBE, researches were conducted in different parts of the world. In this regard Tuyen conducted a research to check whether Objectives are achieved if they are not predefined or determined. In his study he found that majority of the students i.e. round about two-thirds was unsatisfied with their learning outcomes. They did not give positive response even in learning activities and those tasks which were conducted by the teachers to asses them because the outcomes were not predefined. He recommends that the teachers must have a sufficient knowledge about outcome-based approach so that the desired outcomes may be achieved. They should have clear perception about the learning outcomes of each course and should know how to syndicate instructions with assessments while conducting a class

Similarly, Lixun conducted a research at The Hong Kong Institute of Education. To implement OBL in an effective way, it is mandatory to make a set of basic outcomes according to the level of institution, and then accordingly create a set of programs learning outcomes which are mapped properly against standard outcomes in a proper way. For each course and its level, the instructors are required to design intended learning outcomes based on the program learning outcomes, and make sure that the all strategies for both teaching and assessing are aligned closely with intended learning outcomes of a particular course.

Asim wrote a review to see the effectiveness of OBE system. The sole purpose of his research was to highlight basic factors which influence the students' learning outcomes. He collected the data from almost 700 students studying in different disciplines which include medicines, management sciences, accountancy, software engineering and social sciences etc. The significance of this review on OBE is that it can be helpful for all stake holders like different authorities concerned with education which include teachers, students, parents and their community.

Kaliannan conducted a research at UiTM to know that whether the students have complete understanding of their subjects in term of outcomes they want to achieve. He analyzed the data collected through survey forms and used COBES method in his analysis. He took a sample from a class consists of forty-four students who were diploma holders and were

enrolled to study the subject. The instructors who were supposed to teach this sample of diploma holders guaranteed that same students will be considered for the survey for both pre- and post-appraisal which were intended to measure the comprehension of the subject by these learners. He, towards the end urged the executives of education and teachers to persuade and advance OBE consistently in all semesters so it can support the energy and which will thusly assist them with accomplishing the expressed results.

Sreekanth et al (2015) conducted a research to highlight those challenges which come across while shifting from traditional educational system to the outcome-based education system. The tool *Think, pair, share* was used in the experiment for cooperative learning. The researcher concludes that in OBE system the teachers have more tools to apply in the class to get better results where as a traditional education system is not as much flexible to apply multiple tool. The writer recommends OBE to those institutions which are desirous for the accreditation.

Jadhav (2020) conducted a research in India to find out impact assessment of OBE in Indian engineering education. For this purpose, a questionnaire based on open ended question was circulated throughout the country. The data shows that in India, OBE is making its room so rapidly. So, the concern authorities must think to update the curriculum accordingly and develop an environment where the system can be implemented effectively

Kamran et al. (2020) conducted research in Riphah International University, Islamabad, Pakistan. It was a case study. The implementation of OBE system was done successfully in alignment with mission and vision defined by the university through Program Educational Outcomes (PEOs), Program Learning Outcomes (PLOs) and the Course Learning Outcomes (CLOs). The collected data was analyzed with the help of a software named SPSS. According to the findings of the survey the results were quite reasonable and acceptable for being satisfactory because they fulfilled the attributes and related concerned PEOs.

For this purpose, need analysis was done with the help of questionnaire which was distributed among students the students second semester studying in informatics management program in order to evaluate their responses on the needs, shortcomings and their desires. Another analysis from alumni for the feedback was conducted. The writers concluded that OBE highlights the significance of strengthening and motivating learners so that they can play their

roles in future. It helps the teachers to maintain students' motivation for multi challenges in their academic career and to get ready for different multi-dimensional tasks, all communication and discussion topics originate from real cases they may confront in their future study and work.

Li (2020) attempted to apply the guidance model which was dependent on OBE to a unit instructing to an eight-week test for eight educating hours. For this purpose, two writing tests were conducted during the experiment. At the end of the experiment pre-writing tests and post-tests were conducted. The performance of the students was calculated by the teacher and which was considered as experimental data. The total score was divided into five levels which consisted grammar and vocabulary application, structure of the composition and content. In this study the writers found that the OBE focuses the students instead of the teacher, and this focus on the students is cultivating their' practical application and a wholesome development in their capabilities. In his research he found that to evaluate the abilities of students' OBE plays an important role. It also encourages teachers to evaluate the students through different methods and provides opportunities for students, to guide them so that they can achieve the intended outcomes.

Yang (2019) conducted a research on the hybrid mode based on OBE. In a class of ESP, the research was done on the blended teaching and learning construction of ESP Courses. For the said purpose he took the course of *IT English* as the case study, the paper constructed the resources of the course and designed the teaching and learning process whose main objective was to satisfy the requirements of blended teaching and learning and bring improvements in the learning effect of students. The study concluded that sufficient learning resources and specific learning guide should be provided to students before, during and after teaching and learning process, which could be achieved through blended teaching and learning reforms of the course. A Clear and comprehensive guide is essential for the students before and after the classes for students so that they can understand the whole learning process and methods.

O'Neill (2008) examined how different initiatives which influenced those parts of Western Australia where English language was being taught. They with some particular reference proposed evaluation regimes, and considered outcomes-based education (OBE),

which provided a model known as interpretive model for guiding the change. They concluded that under an OBE system, the little concurred comprehension with respect to the center of the educational plan has brought about the shortfall of a reference point for creating acceptable assessment bonds.

Thobedi (2004) states that Outcomes-Based Education (OBE) approach had been introduced in schools in South Africa to improve the process of teaching and learning at school level. The approach brought advancements in schools especially along with the improvements in pedagogy. In their research, the focus was on English as a second language (ESL) for the students of Grade eight. Their main focus was on those schools which were called "previously disadvantaged schools" situated in the Black township areas Africa. The findings of their study on ESL teaching and learning for Grade eight classes indicated that many deficiencies and issue of ineffectiveness occurred in most of the classrooms. The findings confirmed that the students of Grade eight ESL learners face many problems with ESL due to lack of basic facilities to implement OBE.

Another research was conducted by Wijaya (2020) to see the impacts of Outcome based education for EFL learners. In this research the data was collected through qualitative method about the effects of outcome-based education on EFL learners' autonomy in an introductory class of education. The findings of this research recommend that all students of EFL who are teaching in teacher-course experiences should adopt and implement outcome-based education to stimulate a greater degree of contentment in learning.

Ortegal (2016) conducted the research in a state university in America. The research design of their study was descriptive-correlational which they used to examine that how far the instructors of English language were either accepting or resisting the education approach which was intentionally implemented to impart the knowledge. A sample of 15 respondents was selected through purposive sampling technique who participated in answering questionnaire. The questionnaire was authenticated by the subject specialists. The study proved how the focus has been shifted from the instructor to the students. However, the said shift needs change within educational system so that it may facilitate the process of learning. They concluded that by establishing an OBE system in an educational institution is the best way for a learner to achieve the desired outcomes.

All above researches conclude that the OBE system should be implemented in educational institutions to achieve the set goal. The teachers should be trained and according to the needs of the student all outcome should be designed so that the learners may fulfil the requirements in their future life.

In Pakistan, some of the universities which are offering courses in engineering, they are implementing OBE system as per requirements of PEC which works under the supervision of Washington accord. In other disciplines these universities do not implement OBE system to evaluate the achievements of goals. Even in natural sciences the OBE has not been implemented yet. But in most of the foreign universities, the OBE is implemented in engineering as well as in social and natural sciences. They have also implemented it in language courses. But in Pakistan the OBE system is confined only to engineering universities. As the current research has been conducted to explore the factors which cause un/achieved CLOs by the undergraduates of Engineering department NUML, Islamabad to analyze and judge the effectiveness of OBE system for English communication courses. This research will prove a source of guideline and motivation for Pakistani instructors to implement OBE system in the courses of English communication.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research Design

This research is quantitative in nature because the data has been collected in numeric form that is the result of the students studying English language courses as non-engineering subjects in the department of electrical engineering at NUML. These courses consist of Functional English, Communication skills and Technical report writing which are taught in first, second and fifth semester of BEEE respectively. The data collected from the teachers and the students of the same department is also in form of numbers. Furthermore, this research is descriptive cum explanatory, describing whether the specified outcomes for each CLO have been achieved or unachieved. It also explains various reasons for un/achieved CLOs.

3.2 Method of Data Collection

To conduct this research, the researcher has collected the data in two different modes. In first mode, the results of English language courses have been considered. In this regard the researcher has taken the result of all students who have studied Functional English, Communication skills and technical report writing in first, second and fifth semesters respectively. The researcher has considered the results of all students as a sample.

In second mode the data has been collected through the questionnaire. The researcher designed two questionnaires for the teachers and the students of Electrical Engineering department NUML, Islamabad.

For this purpose, a sample of thirteen teachers and two lab engineers was selected from the faculty of Engineering and Computer Sciences. In this sample, five teachers are teaching the subjects of English language in different departments working under the faculty of Engg and CS NUML, Islamabad; whereas, other eight teachers are teaching engineering subjects in the department of Electrical engineering at NUML and two lab engineers are conducting labs who have been considered as teachers because they are also teaching lab subjects in the department of Electrical engineering at NUML. These all teachers are well trained in Outcome based Education system and practically implementing the OBE system in their classes. The questionnaire of the teacher contains general question to explore the effectiveness of OBE

system for engineering as well as non-engineering subjects. That's why the participation of non-English teachers has also been considered to explore the effectiveness of OBE system for the undergraduates of engineering department for English communication courses. As the number of trained teachers is just 15 that's why all these 15 teachers have been considered as the sample for this study.

To collect the data from the students, 15 students were selected at random from three different semesters of electrical department which include first, second and fifth semester. The researcher selected five students at random from each afore mentioned semesters.

3.3 Theoretical Framework

The researcher has followed the model of Bloom's taxonomy presented by Bloom (1956) for this research as a theoretical framework. The model determines the outcomes on three levels out of which the researcher has considered two domains to explore the effectiveness of OBE system for the undergraduates of engineering department at NUML which are as below:

a) Cognitive Domain (Thinking)

b) Affective Domain (Feeling)

The researcher applied cognitive and affective domains. The cognitive domain which deals with the development of mental skills and the acquisition of knowledge from engineering courses whereas the affective domain is related to ethical values, attitude and moral responsibilities.

The cognitive domain has following six levels:

- **Level-1:** Knowledge
- **Level-2:** Comprehension
- **Level-3:** Application
- **Level-4:** Analysis
- **Level-5:** Synthesis
- **Level-6:** Evaluation

The affective domain has following five levels:

- **Level-1:** Receiving
- **Level-2:** Responding
- **Level-3:** Valuing
- **Level-4:** Organizing
- **Level-5:** Internalizing

3.4 Method of Data Analysis

The collected data has been analyzed with the help of Outcome Based assessment sheet which is based on Normalization. The normalization is a process in Statistics in which a variable is transformed into a more analytically useful form, usually using a ratio. It is also called Standardization because this process adjusts values measured on different scales to a common scale, often prior to averaging.

To analyze the results of the students in each subject mentioned above, a sheet named as Outcome Based Assessment has been designed using Microsoft Excel to calculate the course learning outcomes (CLOs) which are mapped to program learning outcomes (PLOs). This sheet includes the results of the students obtained through different tools. These tools consist midterm exam, end term exam, quizzes, assignments and presentations. The designed CLOs are assessed by using above mentioned tools. The performance of the students is measured for 100 marks in each CLO, which means each tool has 25% weightage. The researcher, in this research has normalized the values for each CLO on the basis of following formula:

The researcher designed three CLOs for each course of English communication offered to the undergraduates of engineering department NUML. Assignment, quiz and presentation was conducted for 10 marks each which has been normalized on 25 % marks as each CLO has the weightage of 25%.

Normalization= Obtained marks / Total marks x 25 (value of Normalization).

The calculated numeric values have been presented in two different ways. The calculated values of CLOs and PLOs have been presented with the help of bar graph whereas the data collected through the questionnaires has been presented with the help of pie charts.

CHAPTER 4

DATA ANALYSIS

4.1 Introduction

In this chapter the researcher has analyzed the collected data in three sections. Section 1 deals with the results of the students based on CLOs and PLO. In this section the results of three subjects which are offered in three different semesters have been analyzed. The students of BEE study Functional English in first semester, Communication and Presentation Skills in second semester and Technical Report Writing in the 5th semester. For each CLO, the data has been collected through different parameters like midterm exam, end term exam, quizzes, assignments and presentations.

Second section of this chapter deals with the data collected from the teachers who are teaching in Faculty of Engineering and CS, NUML, Islamabad. These teachers are implementing OBE system in their concerned departments. The data has been collected from these teachers through questionnaire which has been presented with the help of pie chart.

In the third section the data which was collected from 15 students, selecting five students randomly from each course afore mentioned, has been described and explained with the help of pie chart. These students are studying in Engg. department at NUML, Islamabad.

4.2 Data Analysis of OBE Based Course Results

4.2.1 Functional English

Table 1: Outcome Based Assessment of Functional English

Names	CLO1	CLO2	CLO3	CLO4	PLO10
MAHEEN HASSAN	73	73	72	78	74
SAIF UR REHMAN ABBASI	50	73	87	77	72
WAJAHAT SAJJAD	54	48	32	0	33
SADIA MIR	86	64	62	68	70
JAWED AHMED	31	32	38	27	56

WAQAR AHMAD	75	65	71	68	70
WAQAR UL HAQ	55	60	62	72	62
UMER BASHIR	65	65	71	72	68
RANA ZAIN SABIR	51	64	72	66	63
SALMAN LIAQAT	76	68	64	74	71
SHAHRAM HASSAN	76	54	75	78	71
TAIMOOR ILTAF	65	65	72	77	70
KASHAN ALI	60	58	78	75	68
HUZAIFA JALIL	74	69	71	74	72
ZOHAIB SALEEM KHAN	74	63	64	78	70
ABUBAKAR	48	70	77	77	68
SHAMEER AHMED	70	55	64	87	69
MUHAMMAD JAWAD JAMIL	49	62	71	84	66
AMMAR SHEHZAD	65	62	70	74	68
UMAMA IQBAL	61	66	77	77	70
MUHAMMAD ALI RAZA	53	62	75	74	66
IMDAD ALI	60	64	64	72	65
MANZOOR AHMED	21	31	57	57	61
MUHAMMAD ALI ASIF	65	59	87	74	71
IBRAR AHMED	46	65	77	74	65
MUHAMMAD AFNAN	72	67	77	69	71
HAMMAD MAQSOOD	63	60	80	71	68
MINAHIL WAHEED	75	67	77	69	72
HASSAAN BADAR QURESHI	55	62	67	64	62
ATTA UR REHMAN FAYYAZ	77	71	90	69	77
NOOR UL HAQ	67	68	67	72	68
HUSSAM MALIK	75	69	87	72	76
AAMIR IJAZ	22	26	12	0	31
Azhan Azhar	77	69	90	72	77

Zain Amjad	65	67	65	69	66
Muhammad Danish Ali	58	58	87	72	69

The above table shows the results obtained by the students of BEE in Functional English. This result is based on four course learning outcomes and one PLO i.e. PLO-10. The column for each CLO contains the consolidated result which includes students' performance in midterm exam, assignment and a quiz. In the last column the PLO-10 is the average of 4 CLOs. The PLO-10 maps all above four CLOs as per its description. The table shows the individual performance of the students in each CLO. The above chart has been described and explained below with the help of graphs.

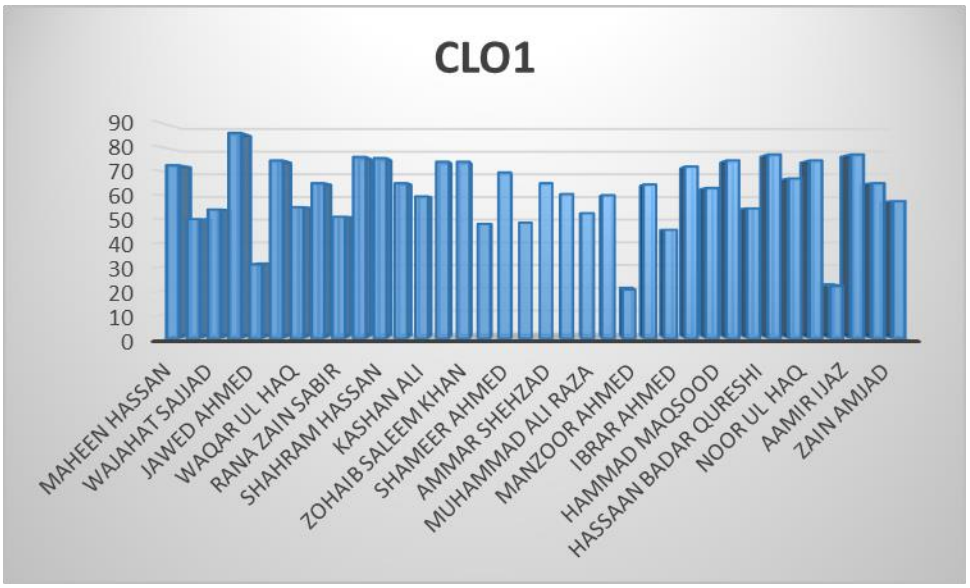

Figure 1: Result of CLO1 for Functional English

The above figure shows the consolidated result of CLO -1 for Functional English which is taught to the undergraduates of BEE in first semester. The result for CLO-1, has been obtained using three different modes. In the first mode, the graduates have been evaluated through midterm exam. In the first part of the question, the students were required to name the type of each underlined word whether it was a noun, an adjective, an adverb or a pronoun in the given five sentences. In the second part of the question five sentences were given in which

the students were asked to identify and name the type of clause. This question was designed in cognitive domain and its level was -1 which is related to the basic knowledge of a content; for example, define, name, label and state etc.

Using another parameter in form of assignment, the students were given an assignment containing two parts. The students were given two exercises, the first one for parts of speech and other one to identify and name the type of clause. The teacher used third parameter in form of quiz in which the students were asked to define noun, pronoun, adverb, adjective, phrase and clause. The tasks for these two parameters were also designed in the same cognitive domain and their level was 1.

The percentage of consolidated result obtained through midterm exam, quiz and assignment has been shown in the above figure. To pass each CLO, it is necessary for each student to get at least 50% marks which are considered as average marks. The figure shows that 6 students could not achieve the desired course learning outcomes. They got less than 50% marks which are considered below average. Only one student got exact 50% marks but the majority of the students has got above average marks. One student has got 86% marks which are considered excellent. Hence the above figure shows that the objective has been achieved by the majority of the students.

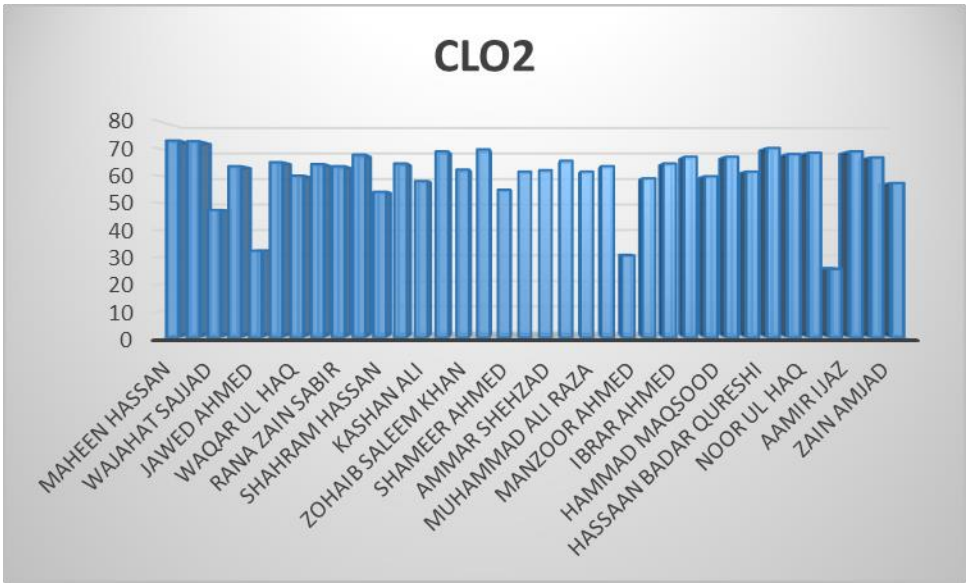

Figure 2: Result of CLO2 for Functional English

This figure shows the consolidated result of CLO-2. For this CLO the result has been obtained through same three above modes. In first mode, the result has been obtained through mid-term exam. The second question of midterm exam was designed on the basis of CLO-2 which is related to comprehension or lower level of understanding, for example discuss, explain, change, convert, describe etc. This question was from cognitive domain and its level is 2. In this question the students were required to change the voice of five sentences given in the paper. To check their understanding about this particular topic they were given an exercise as an assignment which was comprised of almost 25 sentences to change the voice. The students were supposed to change the active form into passive and passive into active form. To examine their further comprehension, a quiz was conducted on the same topic.

The third question of the same paper was also designed on the basis of CLO-2 in which two topics were given to write a paragraph on each of the topics. The domain of this question was cognitive and its level was 3 which examines the higher understanding of the students. The students were also given an assignment with four topics to write a paragraph on each topic. These topics were based on four different types of paragraph writing which include descriptive, narrative, argumentative and expository form. To check they're better understanding a quiz was conducted in the class which consisted twenty different topics and the students were asked to judge the type of each title for paragraph writing.

The above graph shows the consolidated results of the students for CLO-2 obtained through three different ways. The graph shows that only four students of this class could not achieve the learning outcomes whose marks are below average but majority of the class has got above average marks which means that the CLO-2 has been achieved.

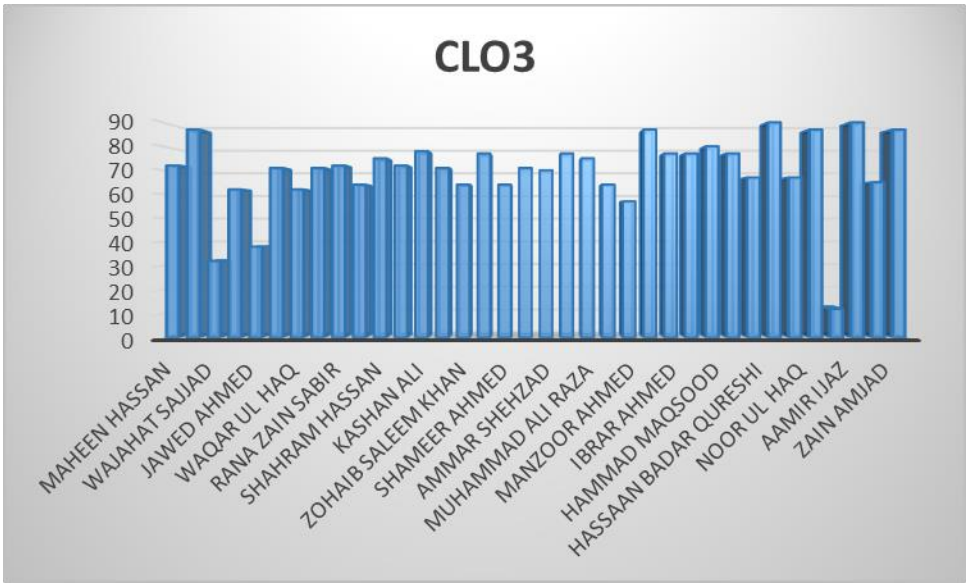

Figure 3: Result of CLO3 for Functional English

This graph shows the consolidated result of CLO-3. For this purpose, the data has been obtained through three different modes which include end term exam, assignment and quiz. In the end term exam, the first question was designed in the cognitive domain and its level was 3 which is about the application of previously acquired knowledge in a setting. In this question the undergraduates were given five sentences of direct speech to convert them into indirect. On the same topic they were also given an exercise consist of 25 sentences for change of narration. A quiz was also conducted in the class on the same topic.

The second question of this end term exam was also based on same CLO-3. This question was also from the same cognitive domain and its level was 5 which is about the production of something unique. The students were given a situation to develop or create a story with some moral lesson. They were also asked to suggest a title to the story which they had created. The graph shows that almost 91% students have achieved the objects as its results are above average. In this CLO, seven students have got excellent results whose average is at least 80%. Only three students could not achieve the outcomes because their result is below average for CLO-3.

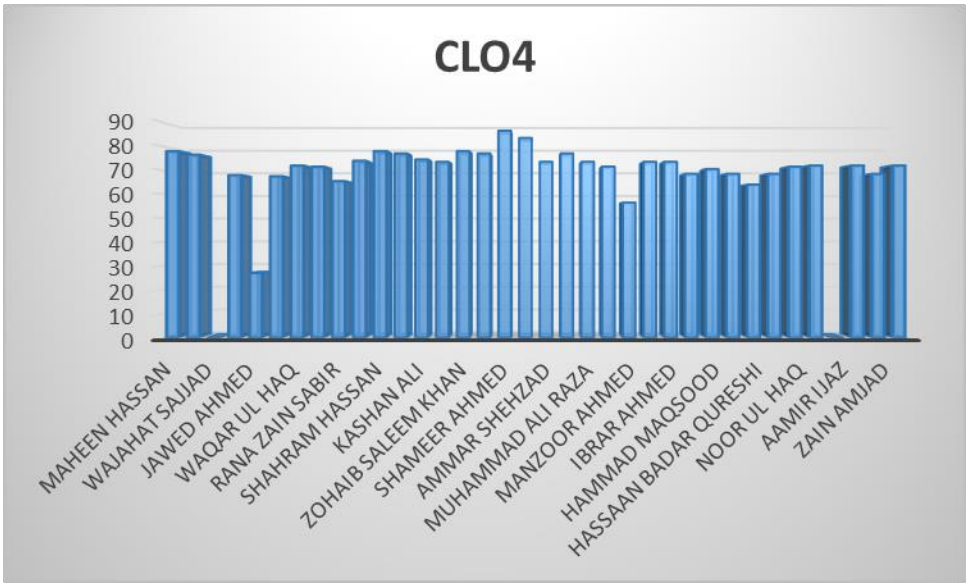

Figure 4: Result of CLO4 for Functional English

The above graph shows the consolidated result of the students for CLO-4 which is about the application of previously acquired knowledge in a particular setting. In the end term exam, the teacher designed the forth question from cognitive domain and its level was 5 which includes the action words like compose, compile, produce etc. In this question the students were given an advertisement for a job from a newspaper and they were asked to write a job application according to the requirements mentioned in the advertisement.

To examine the level of achievement for CLO-4, the fifth question of the paper was from the same domain and level in which the students were given three topics for essay writing and they were asked to write an essay on any one of the given topics. They were also given four topics to write an essay as an assignment.

For this particular CLO-4, the quiz was replaced by the dialogue. This task was designed from affective domain and its level was 2. The action words for this level are participate, volunteer, obey etc. In this level the graduates are expected to volunteer or participate in group discussion or dialogue.

The graph shows that almost 91% students have achieved the outcomes as their results are above average. Even three students have got at least 80% marks which is considered as excellent. The outcomes remained unachieved for three students who did not appear in the final term due to some personal issues.

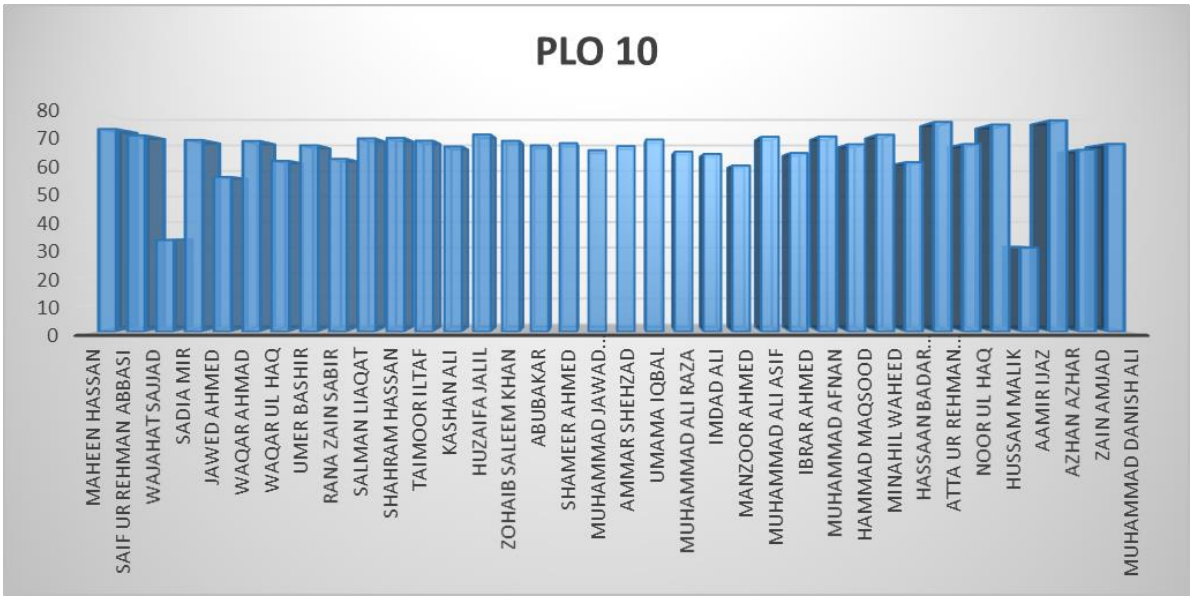

Figure 5: Result of PLO10 for Functional English

The above graph shows the program learning outcomes for Functional English. PEC has designed 12 PLOs which are mapped according to the CLOs. These PLOs have been designed according to the requirement of each subject. For Functional English PLO-10 is considered to see whether the overall outcomes have been achieved or not.

The above graph reflects the overall performance of the students that whether they are able to communicate effectively in oral as well as written communication at the end of the course. The graph clearly shows that only two students could not get pass marks as their marks are below average but 94% students have achieved the program learning outcomes.

The PEC demands that 90% internal and 10% external weightage should be given to the PLOs. The external weightage means that after the degree, feedback should be taken from the students that whether they are able to communicate effectively and internal weightage means the weightage given to them on the basis of their performance in each CLO during the course work. The above graph is based on only internal weightage as these students are still studying in the institution and this research is being conducted during their course work. So, the above graph does not depict the external weightage.

4.2.2 Communication and Presentation Skills (3+0)

Table 2: Outcome Based Assessment of Communication and Presentation Skills

Names	CLO 1	CLO 2	CLO 3	PLO 10
Tooba Qureshi	80	85	80	82
Hassan Abdullah	75	85	82	81
Muhammad Mohsin ayaz	70	90	72	77
Taha khan	85	90	82	86
Awais Abdullah	75	90	71	79
Fatima Batool	90	90	74	85
Waleed ahmed	85	90	74	83
M umer javed	75	80	61	72
Iqra shoukat	80	90	78	83
Alina ahmed	80	85	80	82
Sohaib Akhtar	65	90	65	73
Zeeshan Nawaz	75	90	60	75
Faizan tariq	75	85	68	76
Faisal Akhtar	70	90	58	73
Saad haroon	75	90	82	82
Shakir Hossain	65	80	70	72
Ayesha Noreen	80	90	78	83
Muhammad haroon aftab	85	70	69	75
Naveed anjum	75	90	79	81
Taha saddique	75	65	76	72
Adeel khan	70	90	81	80
Muhammad nauman Zahoor	75	90	84	83
Mohammad abdul samad sohail	85	65	81	77

This chart shows the performance of the students in Communication and Presentation skills. This course is offered to the students of BEE in second semester. This consolidated result is based on assignments, tasks, quizzes and presentations. Due to covid-19, classes were

shifted to online mode. As it was a sudden change from physical to online, the institution could not conduct the midterm and end term exams.

The students were evaluated through aforementioned tools. The chart shows consolidated result of three CLOs and one PLO ie PLO-10. Each CLO has been calculated on the basis of students' performance in different tasks which are described and explained in detail with the help of graph below.

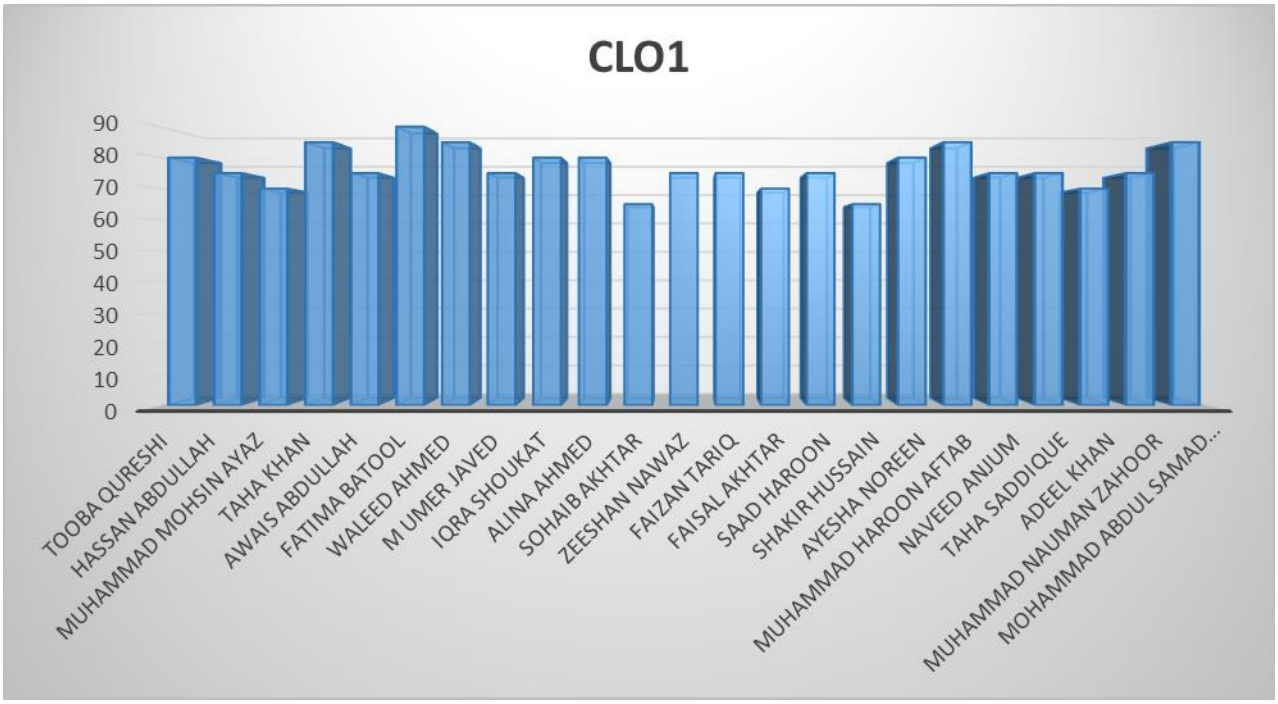

Figure 6: Result of CLO1 for Communication and Presentation Skills

The above bar graph shows the performance of the undergraduates in CLO-1. For this purpose, the teacher asked the students to search different definitions of communication and decide which one is better and why. This task was from cognitive domain and its level was four. The students were also asked to discuss in detail the historical development of communication tools. This task was given as an assignment. This assignment was from affective domain and its level was 2.

To examine the same CLO, a quiz was also conducted by the teacher in which the students were given different terms related to basic concepts of communication. They were given ten terms to define. For example, encoder, decoder, context, conciseness, concreteness, consideration etc. This quiz was designed for the cognitive and its level was 1.

As it is above mentioned that due to covid-19, in this particular semester the institution could not manage online exams. To overcome this deficiency the students were given different tasks and assignments so that the desired outcomes might not be affected. So the teacher assigned another task to the students on the basis of same CLO. In this task the students were asked to describe the impacts of lockdown on different walks of life. This task was also from cognitive domain and its level was 1.

The above bar graph shows the performance of the students done through above tasks. This graph indicates that all the under graduates have successfully achieved the desired course learning outcomes as their marks are above average. Almost fifty percent students have got excellent grades in CLO-1.

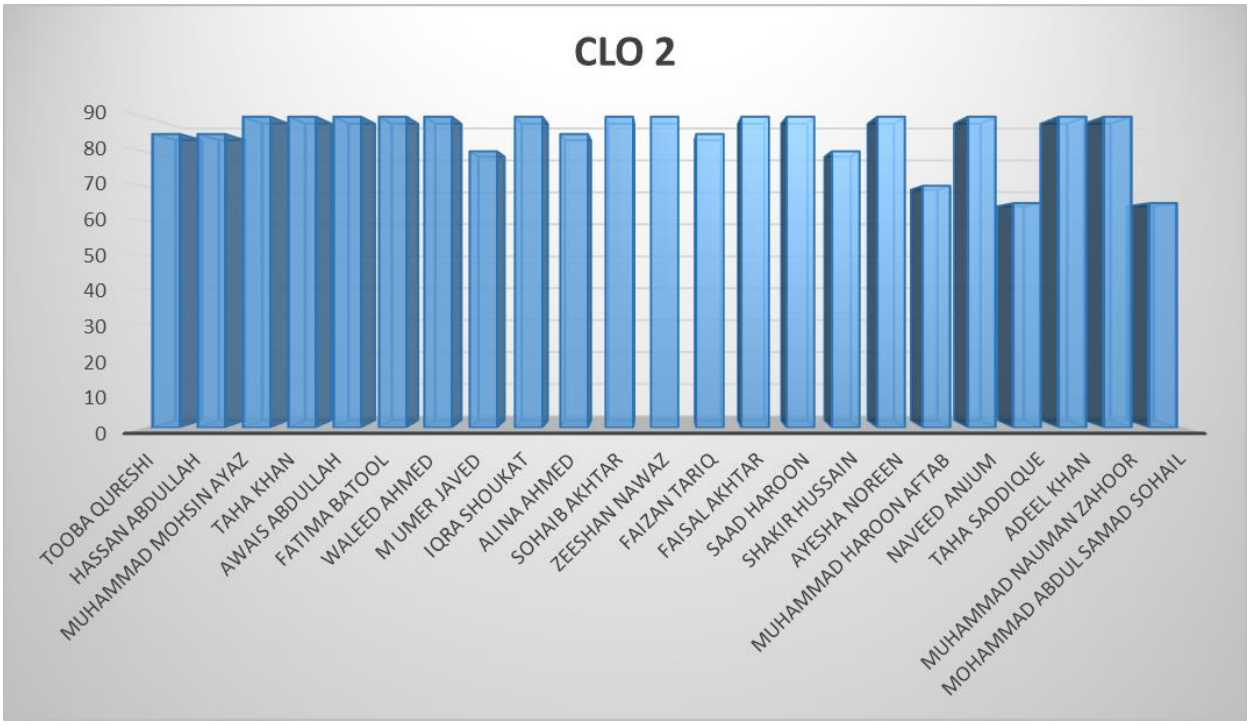

Figure 7: Result of CLO2 for Communication and Presentation Skills

This bar graph shows the performance of the students in CLO-2. To improve the pronunciation of the students, the teacher taught the students 44 phonemes of English language. To examine their understanding, the teacher conducted a quiz in which he included twenty words and asked the students to transcribe the given words phonetically. The domain of this question was cognitive and its level was 2.

The teacher assigned another task to the students to examine their performance in the same course learning objective. The teacher uploaded an exercise on LMS and students were asked to compose a memorandum according to the given instruction for each situation. The task was given from cognitive domain and its level was 5.

The teacher also organized discussion on different topics and the students were asked to participate to express their feelings. This task was assigned to the students according to affective domain and its level was 2. In this level basically, it is observed that to what extent the undergraduates are responding or participating. At the end of each discussion the students were also asked to write the summary of whole discussion and submit.

Above task of discussion was done in online mode and the students participated voluntarily because it was online and they did not feel any pressure of the audience which is often felt by the participants in physical mode. Some of the students could not participate due to poor signals or other issues of internet but majority of the students performed well. As the above graph is evident that all undergraduates have successfully achieved their outcomes in CLO-2. Their scores are high because of their extraordinary performance.

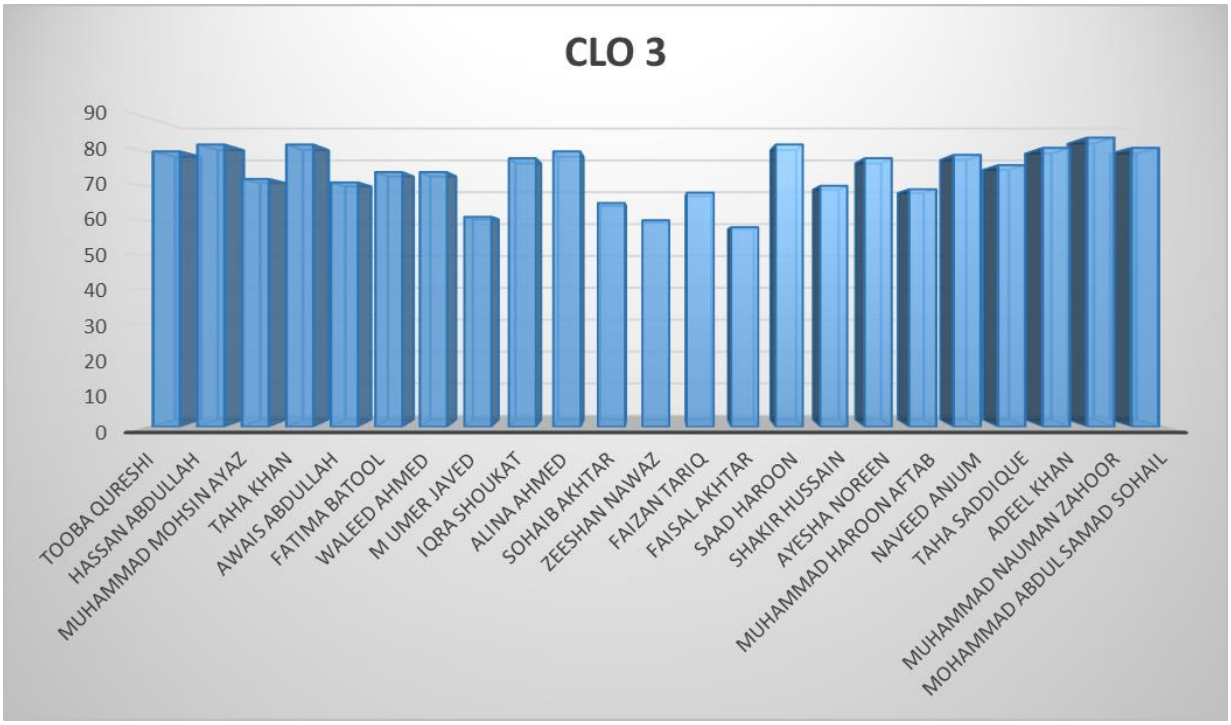

Figure 8: Result of CLO3 for Communication and Presentation Skills

This graph shows the performance of the students in CLO-3. To check their performance the teacher organized different tasks for the students. The basic purpose was to improve their written and oral communication so that they could communicate effectively in their professional life. The teacher assigned them a task to compose a resignation letter mentioning some valid reasons. The teacher assigned another task on the same pattern in which the students were asked to write a reference letter to their teacher to recommend them for admission in some foreign university.

For the improvement of their oral communication, the teacher asked them to choose a topic according to their own interest and prepare a presentation. The students were given option to deliver the presentation individually, in pairs or in groups. In this task students were asked to follow extemporaneous type of oral presentation in which they were supposed to make an outline and display it on the screen through video link for the whole class and explain it. They were not allowed to read from any book or notes. Their performance was judged on the basis of rubrics which are attached. The domain of this task was affective and its level was 3.

The above graph shows that the students have performed well in all above tasks. They achieved the required outcomes. The minimum score in this CLO is 60. Even eight students have got excellent marks. So on the basis of these results it can be said that the required outcomes have been achieved successfully by all students.

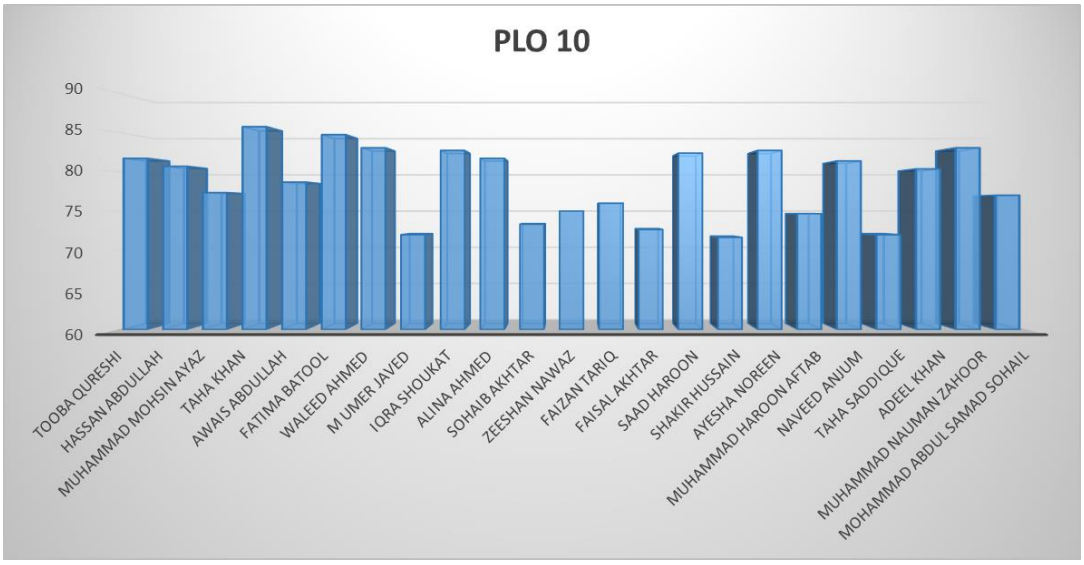

Figure 9: Result of PLO10 for Communication and Presentation Skills

This graph shows the achievements of the undergraduates in program learning outcomes. The PLOs are basically the average of above three course learning outcomes. The PLO-10 has been mapped on the three CLOs. As for as PLO-10 is concerned, it deals with the performance of the students at the end of the course. It shows the ability of the students in oral and written communication.

Pakistan engineering council demands the institution to give 90% internal weightage and 10% external weightage to calculate program learning outcomes. The external weightage should be obtained through the feedback of the undergraduates after the completion of their degree. The researcher has considered only internal weightage because the research has been conducted during the course work.

The above bar graph shows overall performance of the students in this particular subject i.e. Communication and Presentation skills. The graph indicates that all the program learning outcomes have been achieved by all the students. Almost fifty percent students have obtained excellent marks which means that these graduates have improved their oral as well as written communication. They can now deliver oral messages with confidence. None of the students has got below average marks. Even no one has got average marks. So, the above graph is evident that the outcomes are achieved.

4.2.3 Technical Report Writing

Table 3: Outcome Based Assessment of Technical Report Writing

Names	CLO1	CLO2	CLO3	CLO4	PLO 10
0BEENISH	92	85	69	76	81
AIQAN SHAHZAD	85	82	64	72	76
MUHAMMAD AHMAR ABBAS	67	77	49	64	65
JAVERIA ASIF	95	82	69	72	80
SABA HASEEB	92	85	69	67	79
RIZWAN ULLAH	82	69	69	62	71
M ASAD MAHMOOD KHAN	82	87	70	75	79
Abdul WALI KHAN	95	85	64	75	80
MUHAMMAD ADEEL	79	74	77	80	78

HAFSA AFZAL	93	91	64	68	79
SAMIULLAH	95	92	75	72	84
MUHAMMAD AHMED	77	82	69	72	75
BILAL ZAFAR	93	90	70	62	79
SANA ALAM	92	87	72	64	79
MUBASHIR ALI NOOR QAZI	93	90	78	64	82
NOUMAIR KHALID	74	77	70	64	72
MUHAMMAD KHAWAS KHAN	87	84	77	62	78
AZMINA ZAFAR	96	90	73	72	83
JEHAD KHAN	94	79	72	62	77
Hashim Hussain	82	82	78	72	79
M Ali Ayub	80	84	69	67	75
Hamza Farooq	95	82	64	72	79

The above table shows the performance of the students in four CLOs and one PLO which were designed for Technical Report writing. This subject is offered to the students of BEE in 5th semester. Each column shows the result of one CLO which has been calculated on the basis of midterm and end term exams, presentation, quiz and assignments. Due to covid-19, all the tasks were given to the students through online system. The chart also shows the result of PLo-10 which has been calculated with the help of Normalization process. These all results in form of four CLOs and one PLO have been described and explained with the help of barograph below.

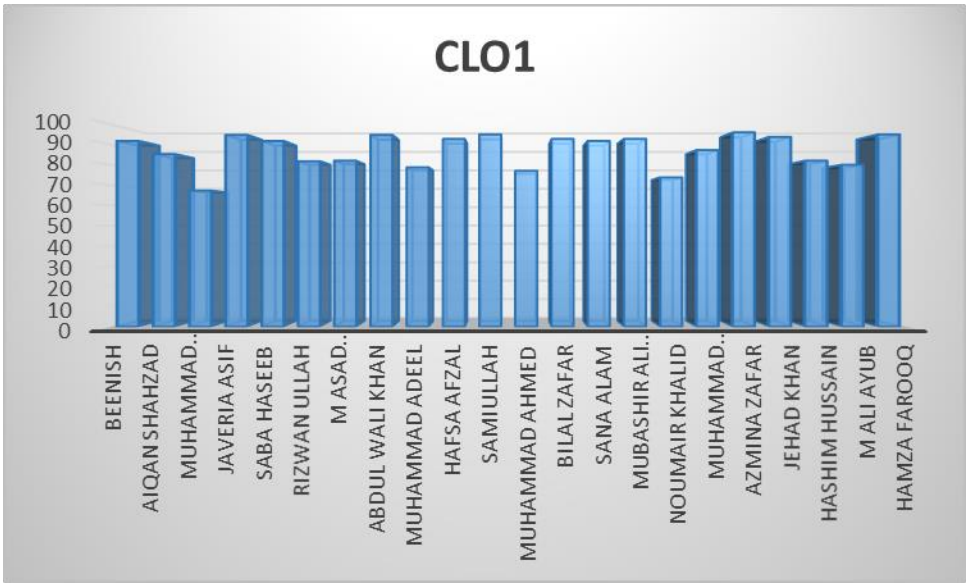

Figure 10: Result of CLO1 for Technical Report Writing

This graph shows the result CLO-1 for Technical report writing which is taught to the undergraduates of electrical engineering in fifth semester. The researcher used three modes to examine the performance of the students which include midterm exam, a quiz and an assignment. In the first question of midterm exam the teacher asked the students to distinguish between different terms related to report writing. They were supposed to distinguish between formal and informal reports, open ended and close ended questions, summary and abstract, feasibility reports and recommendation reports etc.

This question was designed in cognitive domain and its level was 2 which is related to comprehension of the students to see the relationship or difference between different forms of communication or communication tools. The teacher also assigned his students an assignment in which they were asked to look for different definitions of technical writing and state which one was the best one and why? To examine understanding of the students, the teacher also conducted a quiz on the basis of CLO-1 in which basic terms about the technical writing were included to define and explain.

The graph shows that all students have successfully achieved the course learning outcomes as their marks are above average. Out of 22 students,18 have got excellent marks.

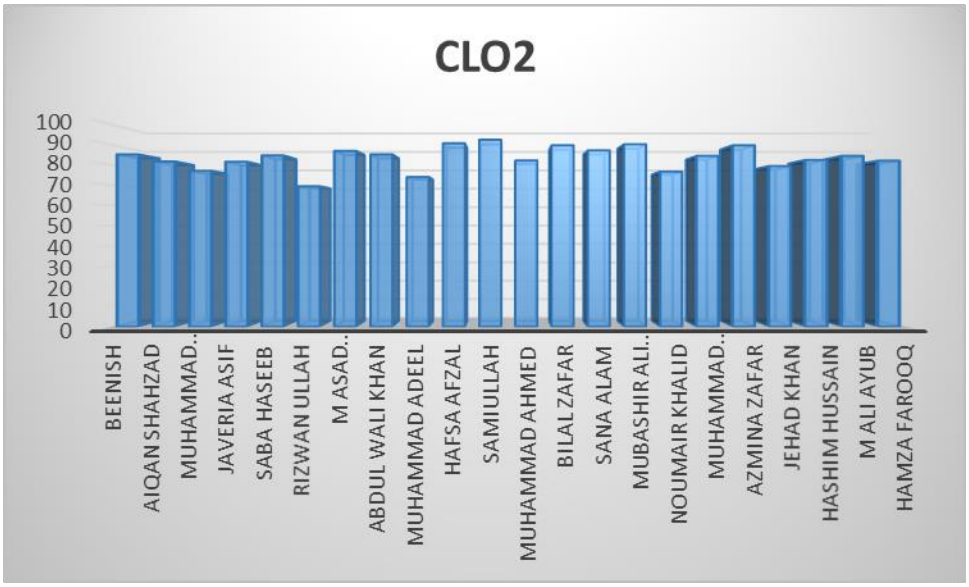

Figure 11: Result of CLO2 for Technical Report Writing

This graph shows the performance of the students based on CLO-2. The data for this particular CLO was obtained through three ways. In the midterm exam, second question was designed in cognitive domain and its level was 5 which is about the production of something that is new or unique. In this question the students were asked to write a short report on various causes of accidents which occur in Rawalpindi / Islamabad.

In third question of midterm exam the teacher asked the students to explain given five terms with the help of examples. These terms were sample, population, structured and unstructured interviews, direct and indirect observation. The domain of this question was cognitive and its level was 2.

To check the comprehension level of the students, an assignment was also given to these undergraduates to collect the data through interview or questionnaire to find out the reasons of inflation in Pakistan. They were also given a task to design a questionnaire to collect the data from people to know their awareness about precautionary measures against Covid-19.

The teacher conducted second quiz on the basis of CLO-2. In this quiz the teacher included different terms related to different tool which are used to collect the data. The students were asked to distinguish sample and population, structured and unstructured interviews, direct and indirect observation. The domain of this quiz was cognitive and its level was 2.

The results are evident that the desired outcomes have successfully been achieved by the undergraduates of electrical engineering. No one has got average or below average marks. In this CLO majority of the students has got excellent marks.

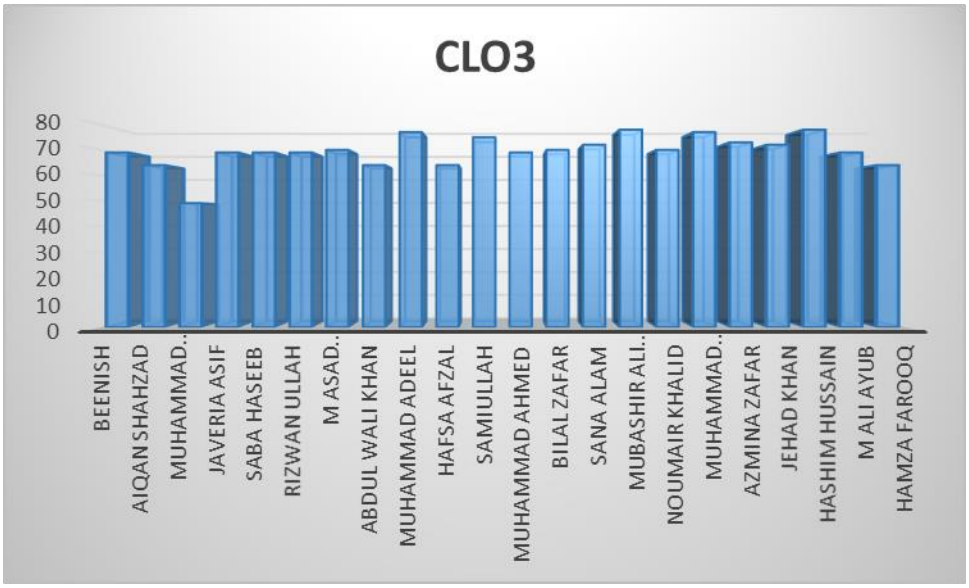

Figure 12: Result of CLO3 for Technical Report Writing

The above figure shows the result of CLO-3 which includes the performance of the students in end term exam, an assignment and presentation. This paper was consist of three questions and it was conducted online due to covid-19. The forth question was replaced by viva voice which was held in physical mode at the campus.

In the first question of end term exam the teacher asked the students to prepare a recommendation report to purchase a laptop for their employer. The domain of this question was cognitive and its level was 3. In the second question of the paper the students were asked to explain different parts of a long report. The domain of this question was cognitive and its level was 2 which is related to understanding. The third question of this paper was also from the same domain and level. In this question the students were asked to paraphrase the given paragraph.

For this particular CLO, the students were asked to prepare a long report on Covid-19. This assignment was also from cognitive domain and its level was 3.

For CLO 3, quiz was replaced by the presentation of same report which the students prepared as an assignment. This task was given from affective domain and its level was 2. To judge the performance of the student's rubrics were designed which are attached at the end.

In the above graph it is quite visible that only one student got below average marks which means that in his case the outcomes are unachieved but rest of all have successfully achieved the outcomes as they have got above average marks.

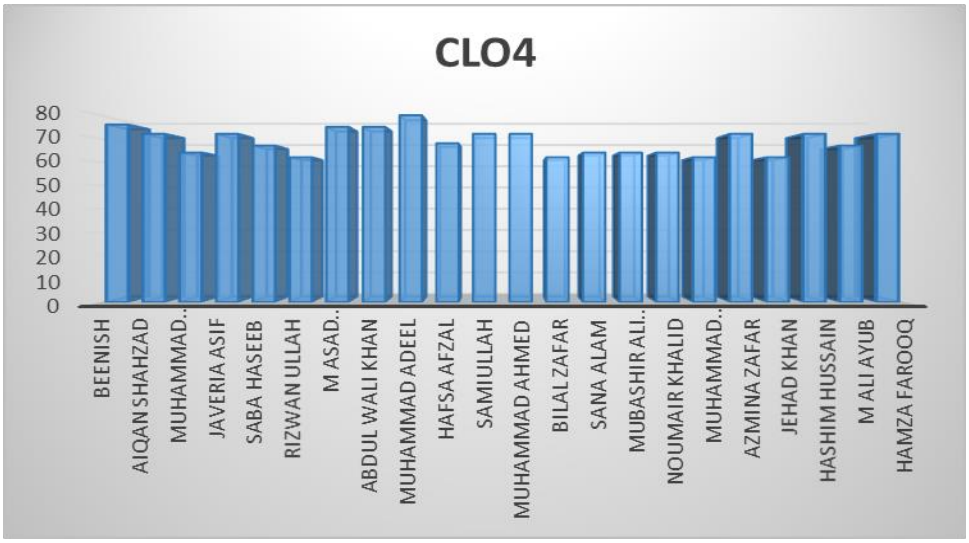

Figure 13: Result of CLO4 for Technical Report Writing

This graph shows the performance of the undergraduates for CLO-4. The teacher examined the performance of his students through end term exam, viva voice and an assignment. The quiz was replaced by viva voice.

In the fourth question of end term exam, the teacher asked the students to design a proposal to establish a Machine lab for their department which could facilitate at least 30 students at a time. The domain of this question was cognitive and its level was 5.

To judge the performance of the students the teacher conducted viva voice. In this viva most of the questions were asked from cognitive domain and their level was 1 and 2. The purpose of conducting viva voice was to discourage cheating and to get the fair results. This viva was conducted in physical mode at campus.

The consolidated result of CLO 4, shows that all the undergraduates have achieved the desired goals as their results are above average. In this particular CLO majority has performed well as no one is below 60% marks.

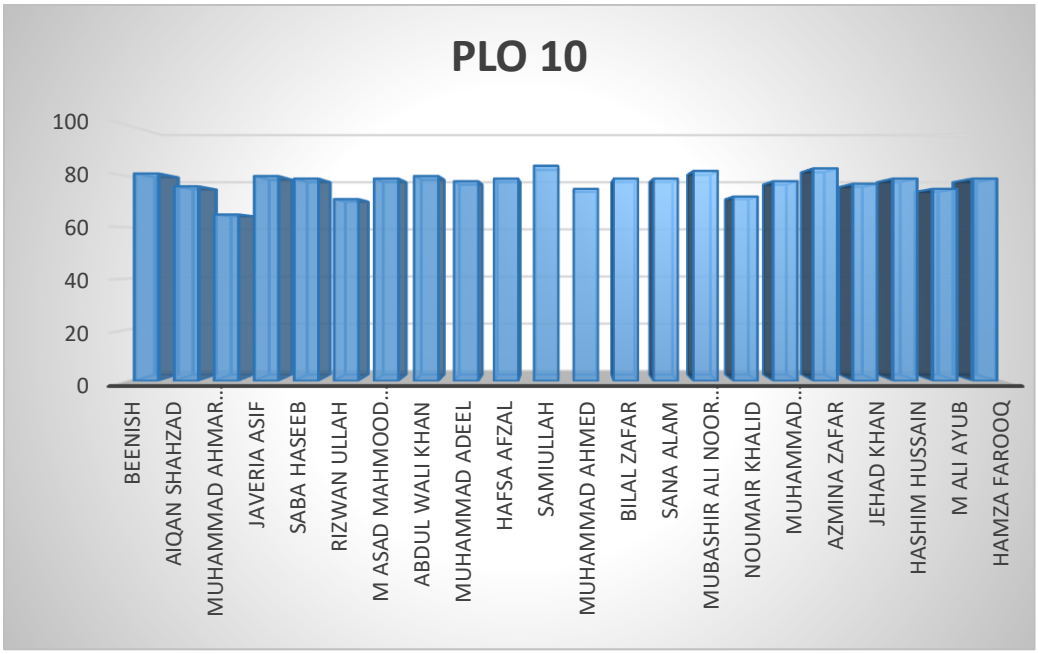

Figure 14: Result of PLO10 for Technical Report Writing

This graph shows the achievement of students in program learning outcomes. The PLO-10 is mapped in accordance with the described three course learning outcomes and it is about students' ability in oral and written communications. This PLO is basically an average of above three course learning outcomes. The graph shows that all the students have successfully achieved the program learning outcomes at the end of the course which means that now they can effectively communicate in targeted skills i.e. oral and written. They have also improved their presentation skills.

For PLOs, Pakistan Engineering Council demands that 90% internal weightage and 10% external weightage should be given to each PLO. The external weightage means that after the completion of degree, 10% weightage should be taken from the students in form of feedback. As the research has been conducted during the semester soon after the completion of each course in a semester that's why the researcher has only considered the internal weightage.

4.3 Data Analysis of Teachers' Perception

4.3.1 Teacher Forms

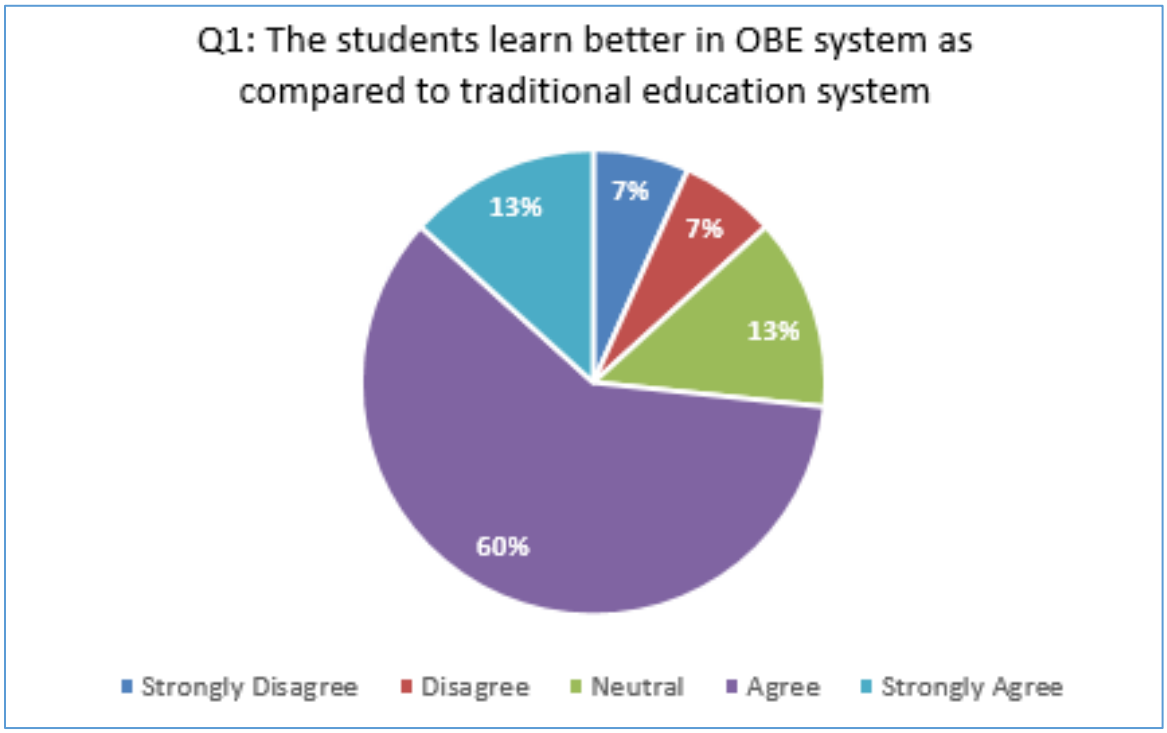

Figure 15: Teachers' Response for Question 1

In response to the above question, sixty percent teachers have agreed and thirteen percent strongly agreed that in outcome-based education system the students learn better as compare to the traditional method. These teachers have been teaching their students through OBE system since 2018. Before 2018, they were following the traditional method where they did not have course learning outcomes separately for each content. Even at the completion of the course they would never bother whether the program learning outcomes were achieved or not. But after the implementation of the OBE in their department they feel that it is better as compared to the traditional system of education because the process of the course learning continues until they are achieved.

In the above chart the response of 13% teachers is neutral. Perhaps they were newly inducted in the department of electrical engineering and experiencing teaching through the OBE. That's why neither they agreed nor disagreed in their response, rather they remained neutral till they find it through the experience.

The chart indicates that almost fourteen percent teachers were not in favor of the OBE system that's why they disagreed that the OBE system is better than the traditional method. These teachers were perhaps used to the traditional method and they wanted to bring any change to evaluate the performance of their students. So, on the basis of above facts it can be concluded that the students learn better through OBE system.

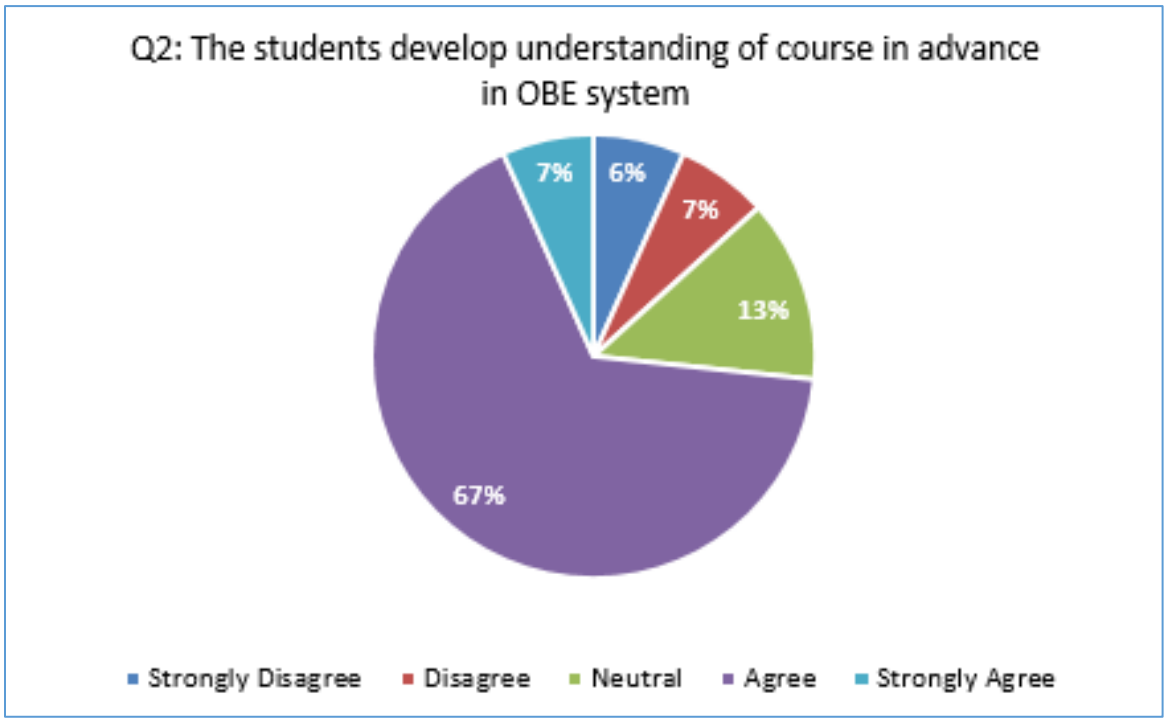

Figure 16: Teachers' Response for Question 2

This pie chart shows that 67% teachers agreed and 7 % strongly agreed that in OBE system the students develop better understanding of the course in advance. In this systems teacher design all their activities in form of quizzes, assignments and presentations according to the course learning outcomes. While teaching different contents of their subject they tell the students about the outcomes of each content which they have to learn during the semester. Each CLO is described in term of action words and accordingly the students are examined in midterm and end term exams. Their other tasks are also designed on the basis of action words. The students also know the particular domain from which the questions are asked. So, they develop an understanding of their subject in advance and accordingly prepare themselves so that they may achieve the desired outcomes. These teachers have the experience of teaching in traditional way and they know that in the traditional system such developments are not seen

and the students are totally unaware of those outcomes which are set at the time of syllabus designing.

In this sample of teachers 13% teachers remained neutral. Perhaps their less experience of teaching through OBE system does not allow them to accept that the students develop better understanding in advance until they experience. The chart indicates that only 13% teachers disagreed that OBE develops better understanding in advance. So, on the basis of above response it can be concluded that in OBE the students have better understanding of their courses in advance because they know the course learning outcomes of each course before they study it.

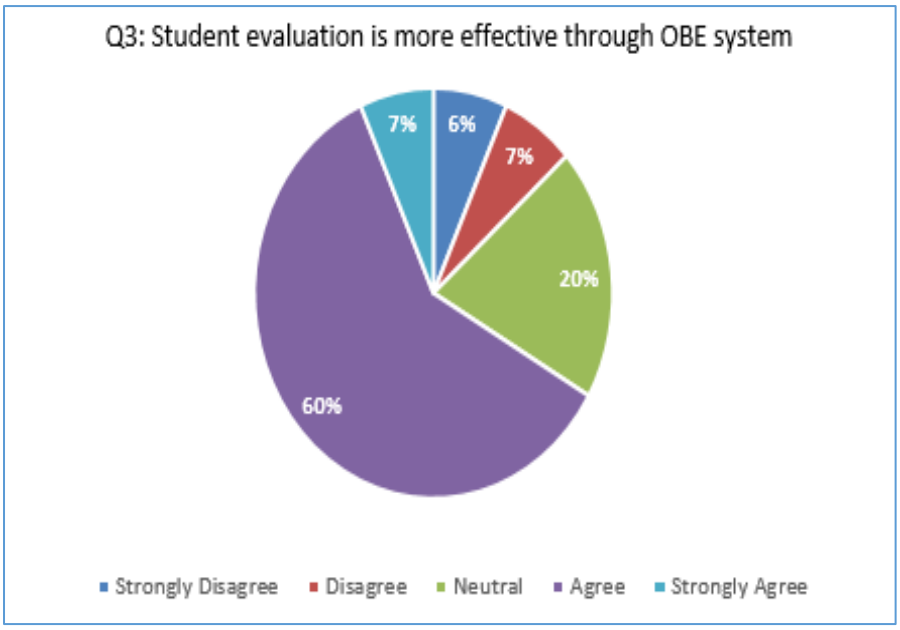

Figure 17: Teachers' Response for Question 3

This chart shows that in response to the above question, 60 % teachers agreed and 7 % teachers strongly agreed that in OBE system, the performance of the students is evaluated more effectively. In OBE system the evaluation is done separately on the basis of each CLO which includes quiz, assignment, and presentation, midterm and end term exams. To display this result of the students, outcome-based assessment sheet is prepared on Microsoft work excel sheet. This sheet separately shows the performance of the students done through afore mentioned tools on the basis of CLOs. The sheet also shows whether the program learning

outcomes are also achieved or not. This evaluation sheet also helps the teacher to trace the weak areas of his students. Keeping in view 67 % teachers think that the process of evaluation is more effective in the OBE.

For the above question, 13% teachers neither agreed nor disagreed. They remained neutral perhaps they are at initial stage of learning the process of evaluation in OBE system.

In response to the above question just 13 % disagreed or strongly disagreed that the process of evaluation is more effective in OBE. As in OBE, the preparation of outcome-based sheet is time taking and the whole process of maintaining the result is bit hectic as compared to the traditional method where overall marks for each subject are shown. For these teachers such simple sheets are easier to design. So, on the basis of above facts it can be said that the process of evaluation is more effective in outcome-based education system.

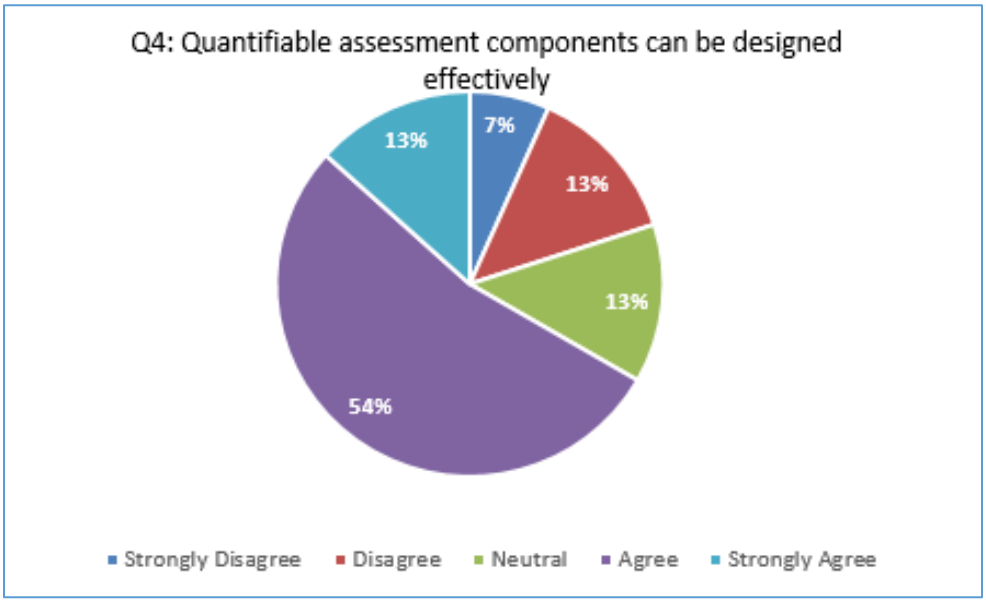

Figure 18: Teachers' Response for Question 4

In response to the above question 54% teachers agreed and 13% strongly agreed that in OBE system components are designed effectively for quantifiable data. In qualitative data it becomes difficult to assess any component with the help of words. For example, for any judgment when the words like poor, good, best are used, they do not clearly show the performance of the students but in OBE system all components are quantifiable and they show the performance of the students in numbers or in form of percentage which show how much

they have gained and how much they have lost out of hundred. Quantifiable assessment shows the performance of the students in numbers separately for each course learning outcomes. These numbers help the teachers to trace the weaker areas of students whereas in qualitative data overall performance of the students is depicted through words which do not point out the weak areas.

The above chart shows that only 13% teachers disagreed and 7% strongly disagreed that in OBE quantifiable assessment can be done effectively for all components. The chart also shows the response of those teachers who remained neutral. To answer the above question 13 % teachers neither agreed nor disagreed rather they remained neutral. Perhaps these teachers are indecisive because of less experience of such assessments.

As the above chart is evident that majority of the teachers believe that in OBE system quantifiable assessment of components can be designed easily.

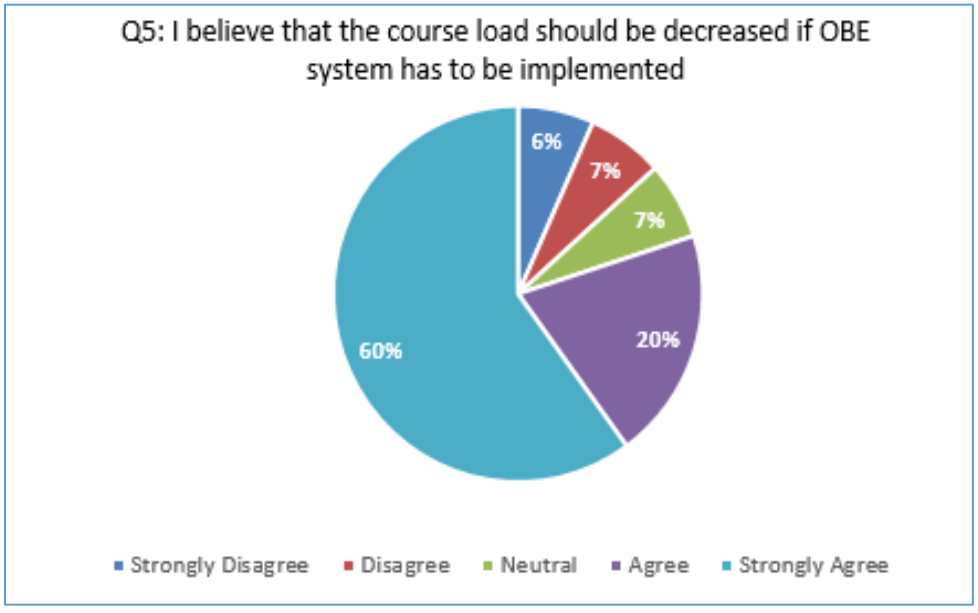

Figure 19: Teachers' Response for Question 5

The chart shows the response of the teachers about the workload especially when they are implementing OBE system. In this sample of the teachers, 60 % strongly agreed and 20% agreed and want their workload should be reduced because in the OBE system there is huge responsibility on the shoulders of the teachers. They have to prepare CLOs according to

different outcomes which they want their students to achieve. They have to conduct quizzes and assignments according to the number of CLOs which they have to mark. They have to prepare outcome-based assessment sheet which is too hectic and time taking. For further improvements of the teachers, faculty development programs and workshops are also organized by the department which are mandatory to attend so that the teacher may effectively and successfully implement the OBE in its true essence to get the desired results or outcomes. Along with above responsibilities they have to prepare folders for the visit of PEC. They also work as heads of different committees. So, on the basis of above responsibilities, these teachers want that their workload may be decreased so that they can implement the outcome-based education effectively in their classes.

The above chart indicates that only 7% teachers remained neutral. These teachers are perhaps newly inducted and think that it will be taken as negative on their part or they have not yet experienced the workload and are indecisive to agree or disagree.

The above facts also show that 6% teachers disagreed and 7 % teachers strongly disagreed that the workload should be decreased if the OBE has to be implemented. Perhaps these teachers are either skilled in computer and they can perform all tasks easily or on the basis of their experience they have developed the habit of work and take no pain of any task assigned to them.

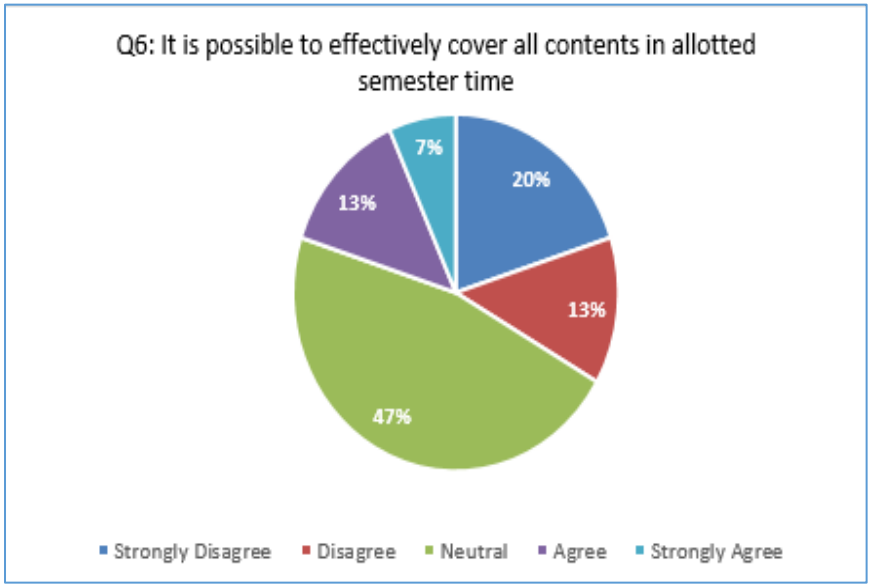

Figure 20: Teachers' Response for Question 6

To answer the above question 47 % teachers remained neutral. The reason for their being neutral may be the political or religious protests which are often observed in our country. The pandemic corona was also another issue which created uncertainty and affected education system of the whole world. Lack of experience in the implementation of the OBE might be another reason to be neutral to answer the above question.

The above chart shows that 13 % teachers agreed and 7 % strongly agreed that in the OBE system there is possibility of covering all the contents effectively during the given time of a semester for each course. During the pandemic the teachers have experience of online teaching. So, in case of any protest these teachers perhaps think that they can overcome the deficiency through online classes on weekends.

In this chart it is also visible that 13% disagreed and 20 % strongly disagreed that there is any surety of completing the contents in given time span of a semester. These teachers are either overburdened in the department or they have less experience in teaching according to the requirements of OBE, that's why they think that it is not possible to cover all contents effectively in the given duration of a semester.

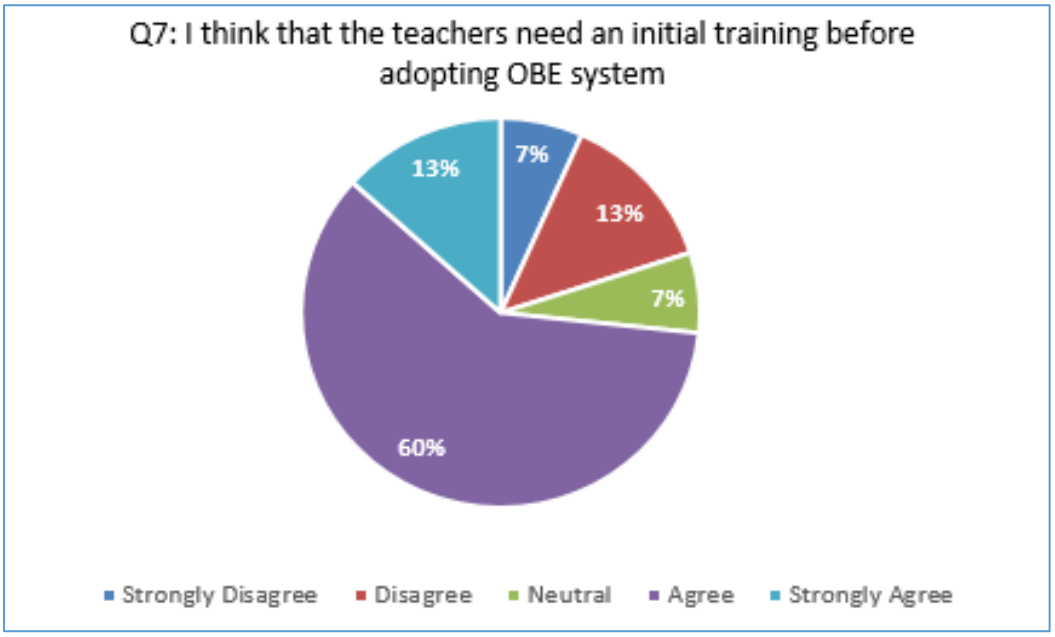

Figure 21: Teachers' Response for Question 7

The purpose of above question was to know whether the teachers feel the need of an initial training before adopting the OBE system. The chart shows that 60% teachers agreed and 13 % teachers strongly agreed that they need an initial training before adopting the OBE.

The OBE system is not as simple as the traditional system of evaluation. It is a bit complex in which first of all the teachers are required some basic knowledge, purpose and benefits of OBE system. They also need training to design different CLOs based on action words. They also need to know how to prepare outcome-based assessment sheet etc. For this purpose, they need basic training so that right from the beginning they can implement the OBE system in their courses in a right direction. The above percentage of the teachers realizes the importance of training before adopting OBE system in their classes.

In the above chart we can see that only 13 % teachers disagreed and 7% strongly disagreed that they need any initial training to implement OBE in their classes. These teachers are either over confident or they don't realize the complexity of this system. They are taking it for granted but the reality of the OBE system is totally contrary to what they feel. The percentage of neutral response is just 7 % in the chart.

So, on the basis of majority opinion it can be concluded that there is a need of initial training before adopting the OBE otherwise the desired results cannot be achieved. The teachers would depend upon the fake results.

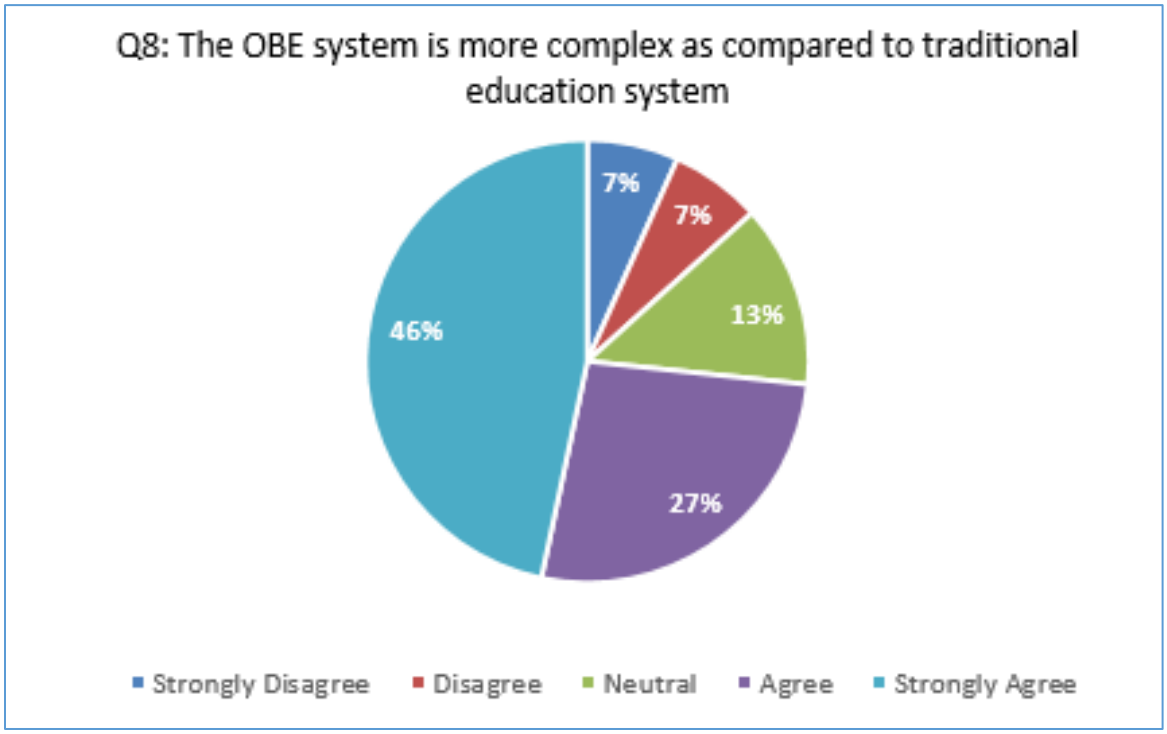

Figure 22: Teachers' Response for Question 8

This chart shows that 46% teachers strongly agreed that the OBE system is more complex as compare to the traditional education system. In the sample of 13 teachers, 27 % teachers have strongly agreed. These teachers have agreed on the basis of their experience. The designing of CLOs, mapping the PLOs according to the CLOs, preparing results, attending for shops and updating the whole process on regular basis make the system bit complex for the teacher. In contrast, the traditional education system does not make such requirements. Though trainings and workshops are the part of traditional system but designing CLOs, mapping PLOs on these CLOs, or preparing outcome based assessment sheet etc. are not the requirements of traditional education.

The chart shows that the response of 13% teachers was neutral. Perhaps for them, it is something new which attracts them to implement. Before they learn it and implement it, they were indecisive to say anything about the complexity of the system.

The chart shows the same 7% for each agreed and disagreed that the system is more complex as compare to the tradition system of education. These teachers perhaps do not think that it is more complex. Because of their experience now they are comfortable and used to the

system. So, for them it is not complex. On the basis of above facts, it can be said that the OBE system is more complex.

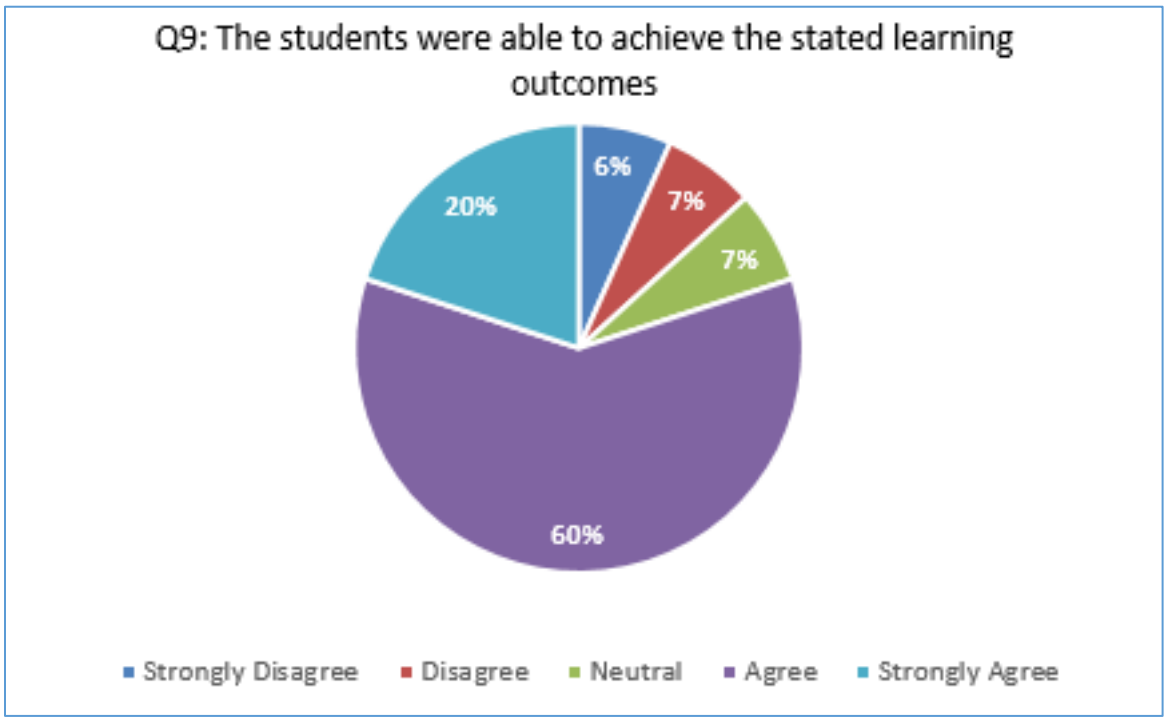

Figure 23: Teachers' Response for Question 9

The chart shows that 60% teachers have agreed and 20% teachers have strongly agreed that the students achieved the stated learning objective which shows the level of satisfaction of the teachers about the performance of the students. In the first section of this chapter, the researcher has analyzed the results of his students in three subjects which they study in three different semesters. These subjects are Function English, Communication skills and Technical report writing which they study in first, second and fifth semester respectively. The section 1 of this chapter can be considered as a strong evidence that the students were able to achieve the course leaning objects taught by researcher himself. The above chart shows the response of other teachers who say that the outcomes have been achieved.

The chart shows that 60% teachers agreed and 20% strongly agreed that the students were able to achieve the stated learning outcomes. The analysis of the results in section 1 of this chapter is evident that the stated outcomes were successfully achieved by the students.

Only 7% teachers disagreed and 6 % strongly disagreed that the students achieve all stated outcomes. In certain cases, some students do not achieve all the outcomes as it is visible in case of Functional English, that some students could not achieve all the learning outcome.

The chart also shows that 7 percent teachers disagreed, 6 percent strongly disagreed and 6% remained neutral in response to the above question. The reason being neutral or to disagree for the above question might be the pandemic in form of Covid-19 faced by the whole world which brought about the implementation of online system. In this system all quizzes, midterm exams and end term exams were held in online mode where it was not possible for the teachers to stop cheating. The excuses of poor signals and power failure were made by the students whenever they would disappear from the screen during the classes. To stop the sharing of answers through Whatsap or other resources, was not possible for the teachers. Even the late submission of the quizzes and papers was also allowed. In spring 2020, the results were compiled on the basis of different projects and assignments which were completed by the students at their homes. No exams were held in this particular semester. The teachers who disagreed or neutral, think that the above facts cannot be ignored. For them the achievement of outcomes by the students became possible due to online classes. On the basis of 60% response in favor of achieving outcomes is valid reason to conclude that in OBE, the students achieve the goals.

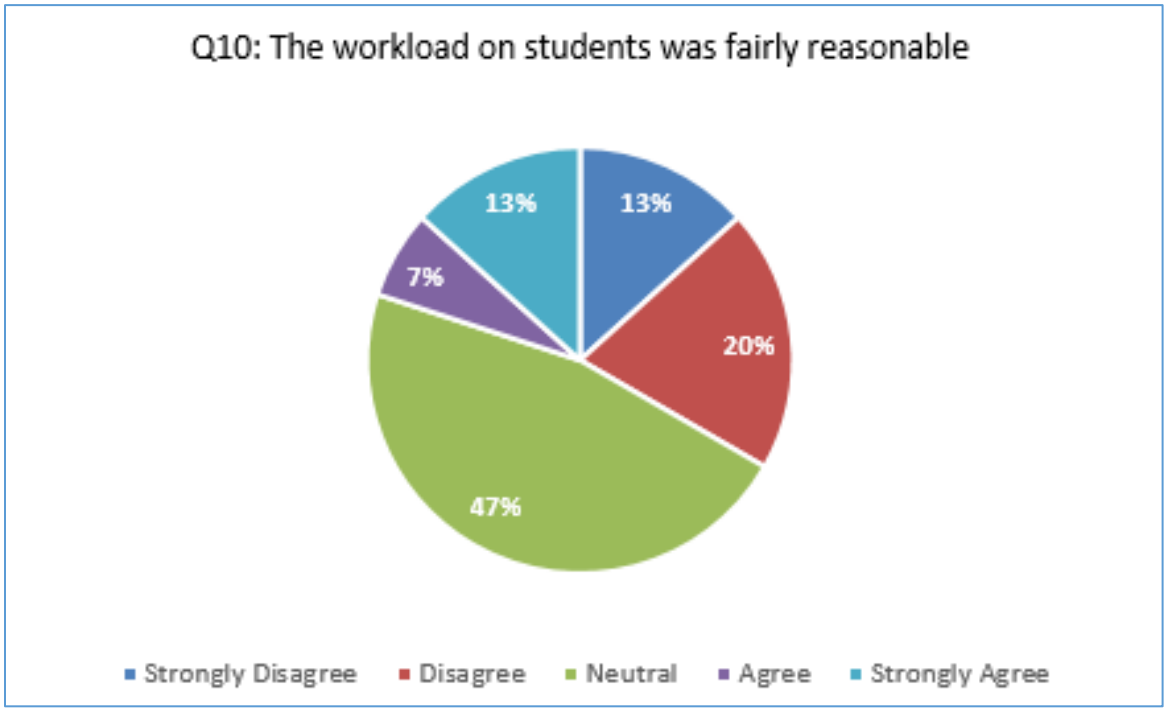

Figure 24: Teachers' Response for Question 10

The OBE system demands a lot from the students. They have to prepare one assignment and one quiz against each CLO. They have to perform other tasks like presentations and dialogue etc.In response to the above question 47% teachers remained neutral. Perhaps they think that it should be asked from the students instead of the teacher. They are perhaps indecisive to agree or disagree.

The chart shows that only 7 % agreed and 13 % strongly agreed that there is reasonable workload on the students. Similarly, 20% disagreed and 13 % have strongly disagreed.

The above facts show that the majority of the teachers have never thought about the workload of the students. Tasks are not given on the basis of mutual understanding among the teachers. All the teachers teaching to one particular semester should not fix the same date to submit the assignment or appear in the quiz. Otherwise it may affect the performance of physically weak students and their CLOs will remain unachieved.

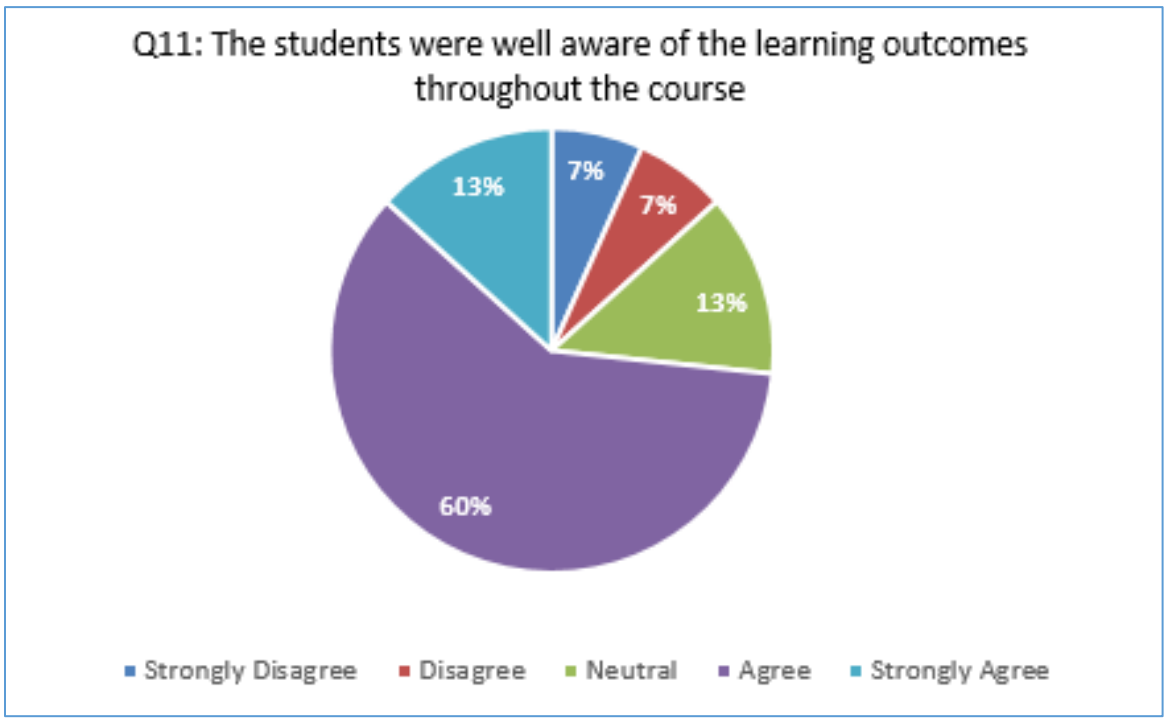

Figure 25: Teachers' Response for Question 11

The above chart shows the awareness of the students about the learning outcomes in each course. In above chart it is quite visible that 60% teachers agreed and 7 % strongly agreed that the students are well aware of course learning outcomes designed by the teacher in outcome-based education. In OBE system teachers are supposed to conduct all quizzes and assignments according to their weekly plan and mark them timely and let the students know about their performance. It makes the students aware of the learning outcomes.

These outcomes are designed by the teachers on the basis of Blooms Taxonomy which consists of three domains and each domain has further different levels. The model provides different action words for each level which are chosen by the teachers to make the questions. The above response shows that the students are well aware of those outcomes which are set by their teachers with the help of different domains. While teaching the students, definitely the teachers tell them about the outcomes for each content which students must achieve. In response the students prepare that topic according to those outcomes.

The chart shows the same percentage for both disagreed and strongly disagreed that throughout the course the students are aware of the learning outcomes. Basically, these are the teachers who do not mark the quizzes and assignments timely and do not let their students

know about their learning outcomes. These teachers are either overburdened or lazy and take the things for granted.

The chart also shows the percentage of those teachers who remained neutral to address the above question. These teachers were indecisive because they were at initial stage of adopting OBE, perhaps they were unable to manage to mark all assignments and quizzes to let their students know about their learning outcomes.

The above facts show that majority of the teachers believe that in OBE system the students are aware of their learning outcomes throughout the course.

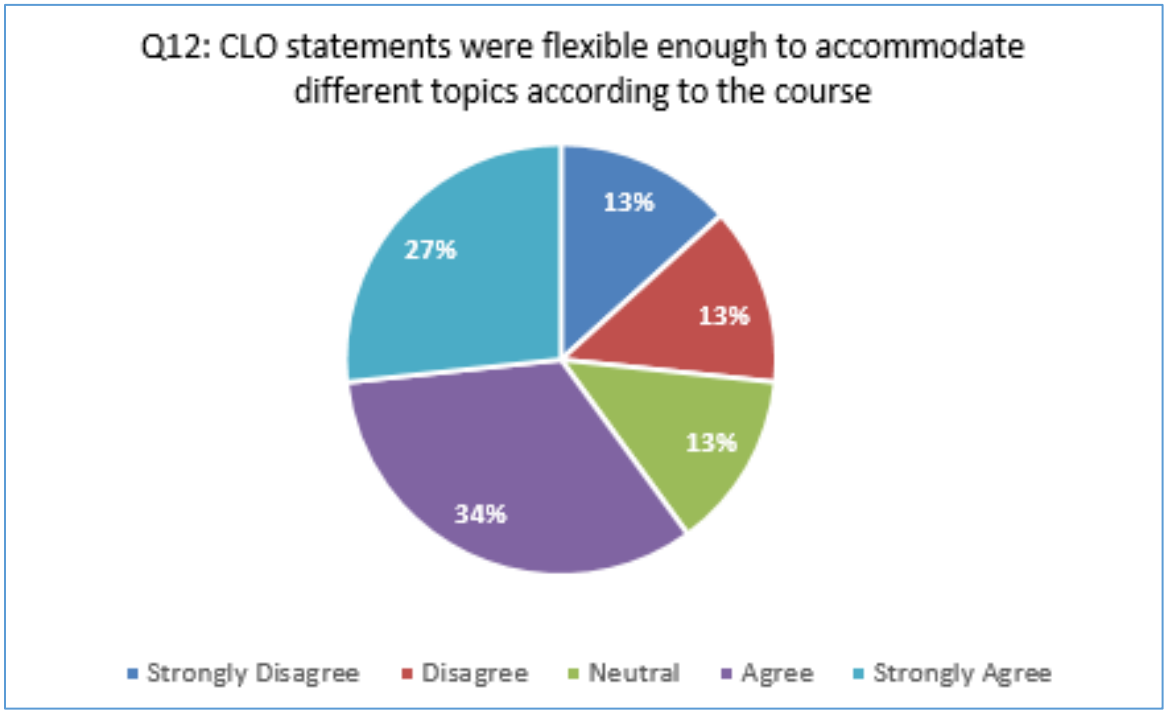

Figure 26: Teachers' Response for Question 12

For the above question, the chart shows that 34 % teachers agreed and 27% strongly agreed that the statements of CLOs are flexible to accommodate different topics. In traditional system of education, the curriculum is revised randomly. The revision of the curriculum is not done on regular basis. But in the OBE system the designed CLOs are flexible and they can be changed according to the level of the students. Sometimes the majority of the students cannot pass one particular CLO which means there is something wrong with the CLO, not with the

students. Sometimes the expectations of the teachers are high. As in OBE system the CLOs are flexible, they can be accommodated accordingly.

In response to the above question the same percentage has disagreed or remained neutral. These teachers perhaps think that the CLOs should not be dealt as variables rather they should remain same. They hold the students responsible if they cannot achieve the learning outcomes. They don't believe that whenever there is poor result for any of the CLOs, the teacher should change the CLOs.

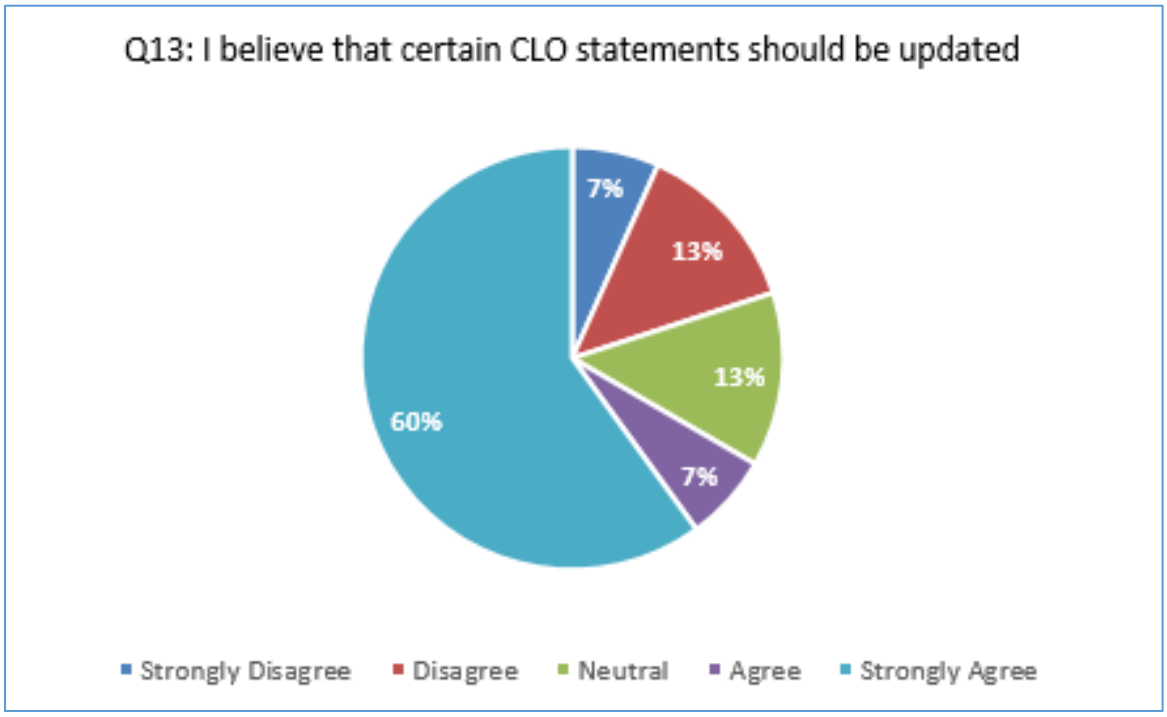

Figure 27: Teachers' Response for Question 13

The OBE system is considered as the continuous process which works till the outcomes are achieved. In the above question the researcher has tried to get answer from the teachers about the updating of CLOs. The above chart shows that to answer this question, 60 percent teachers strongly agreed and 7 % agreed that the certain CLOs should be updated. These teachers realize the importance of CLOs which are designed to achieve certain outcomes. If the outcomes are not being achieved then ultimately the CLOs will be updated according to the latest advancements in education. The same old CLOs cannot be used for all batches. These

CLOs are not only flexible to accommodate but also flexible to be updated. The teachers who have responded positively for the above question have flexibility in their behavior which brings novelty in the CLOs through the process of updating.

The chart also shows that 13% teachers remained neutral to answer the above question where as 13% disagreed and 7 % strongly disagreed. These teachers perhaps believe that CLOs should not be updated because in every semester we have new students who should be judged through the same CLOs.In the light of above facts it can be concluded that the majority of the teachers is in the favor of updating the CLOs.

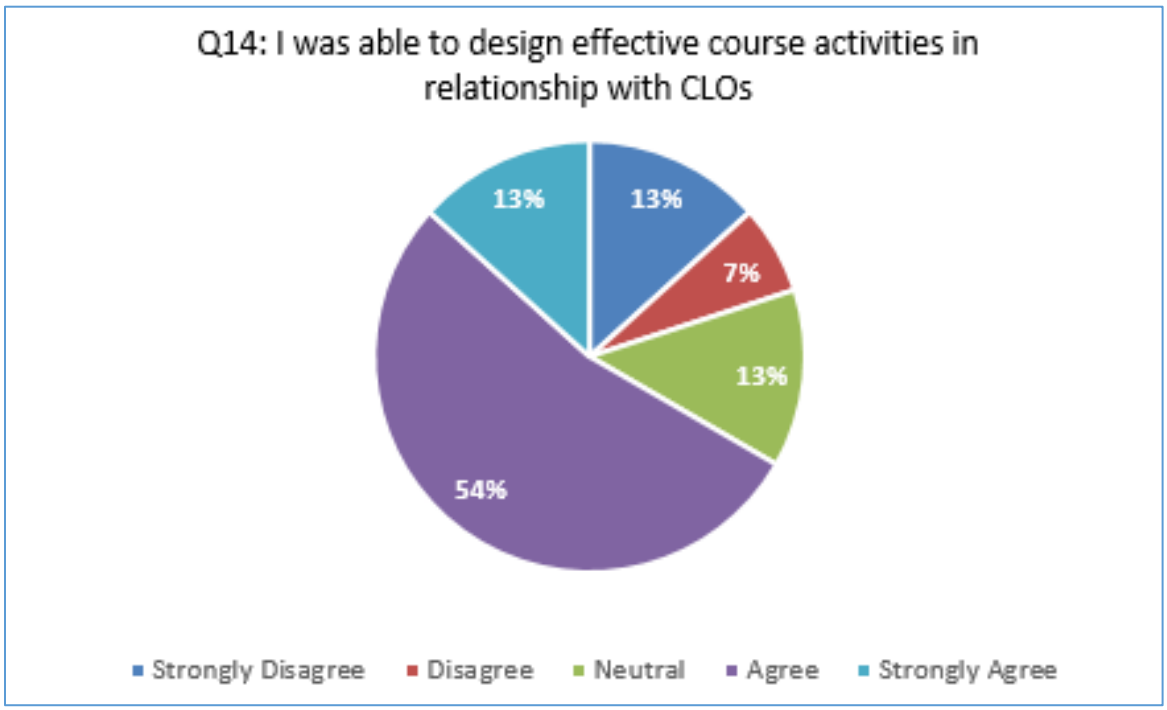

Figure 28: Teachers' Response for Question 14

The above chart shows that 54 % teachers agreed and 13 % teachers have strongly agreed that they were able to design activities based on different CLOs in an effective way. These activities include assignments, quizzes, presentations, dialogue and group discussion which are all designed by the concerned teachers of each subject. On the basis of experience these teachers are now able to design any activity or task for their students. In OBE system, the instructors design one quiz and one assignment against each CLO. In case of presentations one quiz or assignment is replaced by the presentation for the weightage.

The chart indicates that 7 % teachers have disagreed and 13 % teachers have strongly disagreed. Perhaps they think that it is not necessary that all activities designed by the teacher are not effective. Because of individual differences among the students, each student perceives differently. So, there is no surety that all the students will perform according to the requirement. Similarly, the teachers have certain flaws. They are weak in certain areas and cannot deliver according to the satisfaction level of their students. Their weakness will definitely affect the process of designing the activities.

In this chart 13 % teachers are seen neutral to answer about the ability of designing effective activities based on the CLOs. These teachers have recently joined the department and are at the initial stage of adopting OBE system. So, at this time it is not perhaps possible for them to say that they designed effective course activities until they conduct quizzes, exams and mark them to see the learning outcomes.

The above facts are enough to believe that the experience of teaching in OBE enables the teachers to design effective activities for their students.

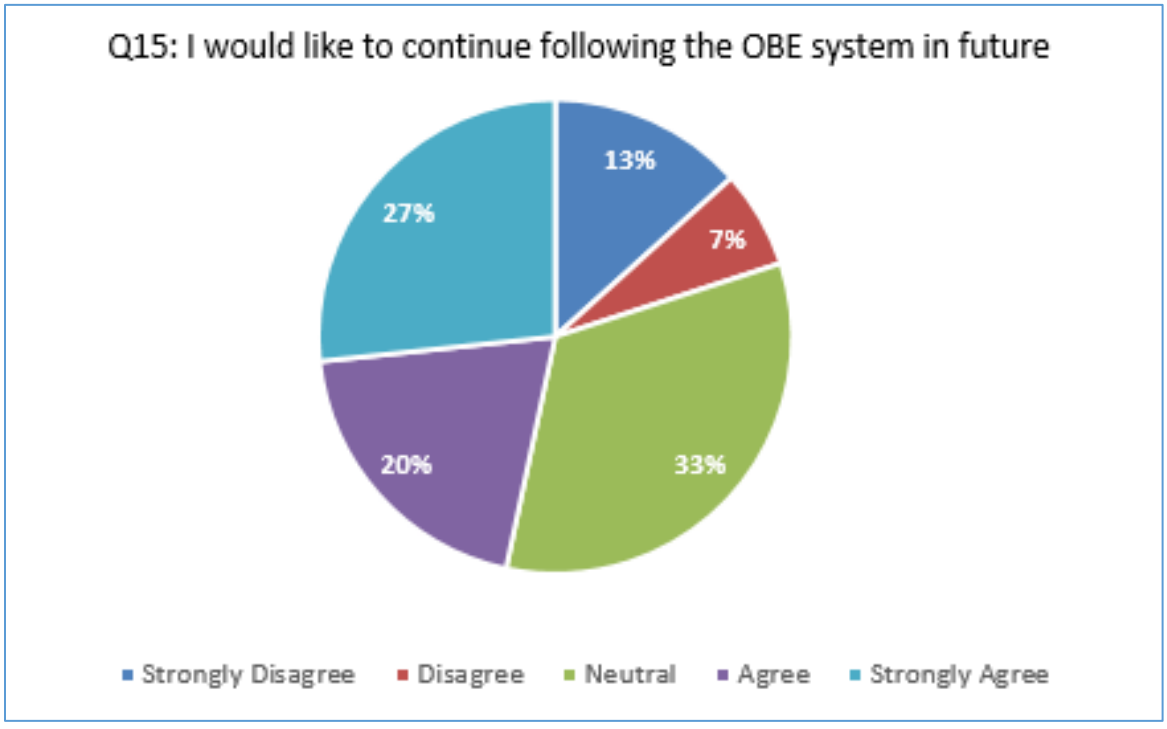

Figure 29: Teachers' Response for Question 15

This chart shows that 27% teachers agreed and 13% have strongly agreed that they would like to follow the OBE system in their classes. These teachers have realized the importance and benefits of OBE system. Through their experience they have understood how this system works. That's why they want to continue it in future. The chart further shows that 33% teachers' response is neutral. These teachers are at early stage of implementing the OBE and they are not sure that whether they will be able to continue it or not but fact is that they have to continue as it is the requirement of the PEC. If these teachers refuse to follow it, they may lose their jobs. If the department refuses to follow it, the PEC will not accredit the engineering courses offered by NUML.

The response of 13% to disagree and 7 % to strongly disagree show that these teachers feel uncomfortable to implement OBE system. For them the process of OBE is not only complex but hectic also. These teachers perhaps don't want to take the pain of designing activities and marking them. They don't want to sharpen their skills to implement this system which is continued till the outcomes are achieved. So that's why they are reluctant to say that they would like to follow the OBE system in future. On the basis of majority opinion, it can be concluded that most of the teachers would like to continue following the OBE system.

4.4 Data Analysis of Students' Perception

This section deals with the analysis of the data collected through the questionnaire to take the opinion of the students about OBE system. For this purpose, the researcher collected the data from 15 students of BEE, studying in first, second and third semester, selecting five from each semester. The data collected through closed ended questions has been presented with the help of pie charts below.

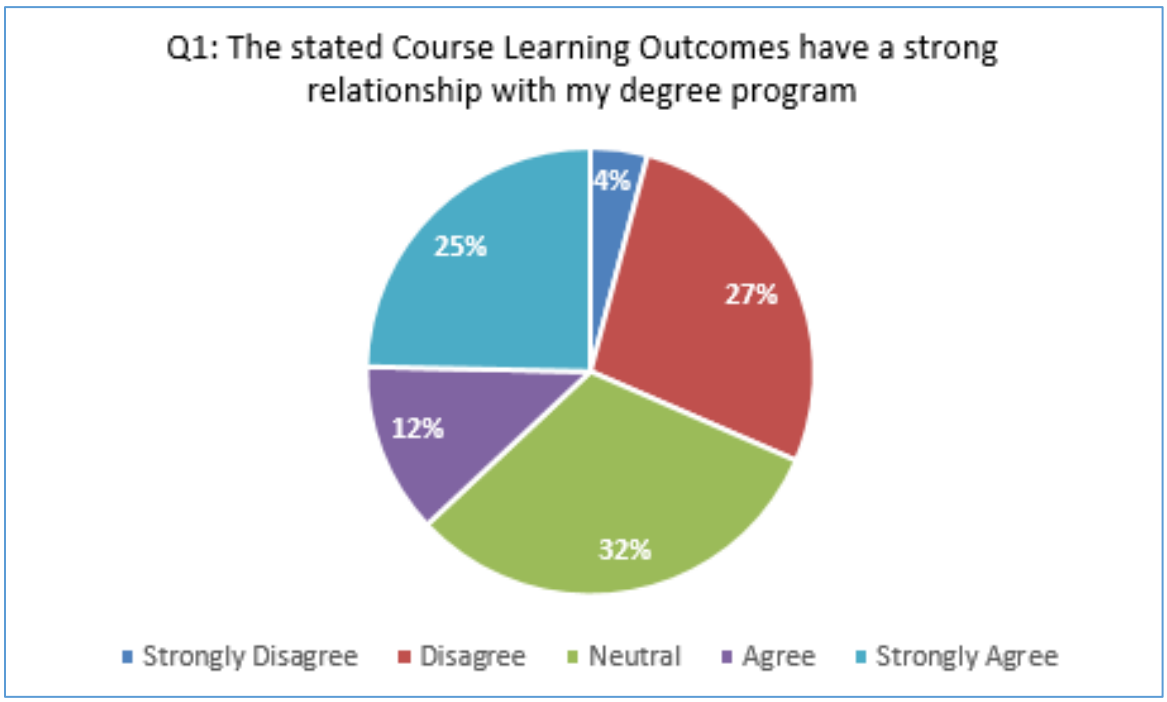

Figure 30: Students' Response for Question 1

In the OBE systems the course learning outcomes are predefined according to the requirement of each subject. The above chart represents the responses of the students for the above question. The chart shows that 12 % students agreed and 25 % students have strongly agreed that the stated outcomes have strong relationship with their degree programs. These students are most probably from fifth semester who have experienced the relationship of stated outcomes with their degree programs in first four semesters. Now as they are almost about to finish the fifth semester, they are confident enough to accept that the stated outcomes have strong relationship with their degree program.

The chart also shows that 32% students remained neutral. Most of these students were from first semester who did not have complete knowledge of CLOs and their relationship with degree program which could enable them to decide whether the stated outcomes were related to their degree program or not. That's why they were indecisive and remained neutral.

In the above chart it is also visible that 27 % students disagreed and only 4 % strongly disagreed. These students perhaps could not either understand requirements of OBE system to attempt the paper or they could not get good grades in different subjects offered to them in different semesters due to any others reason. That's why they have disagreed in response to

the above question. In the light of above facts, it can be said that most of the students believe that the stated CLOs have a strong relationship with the degree program.

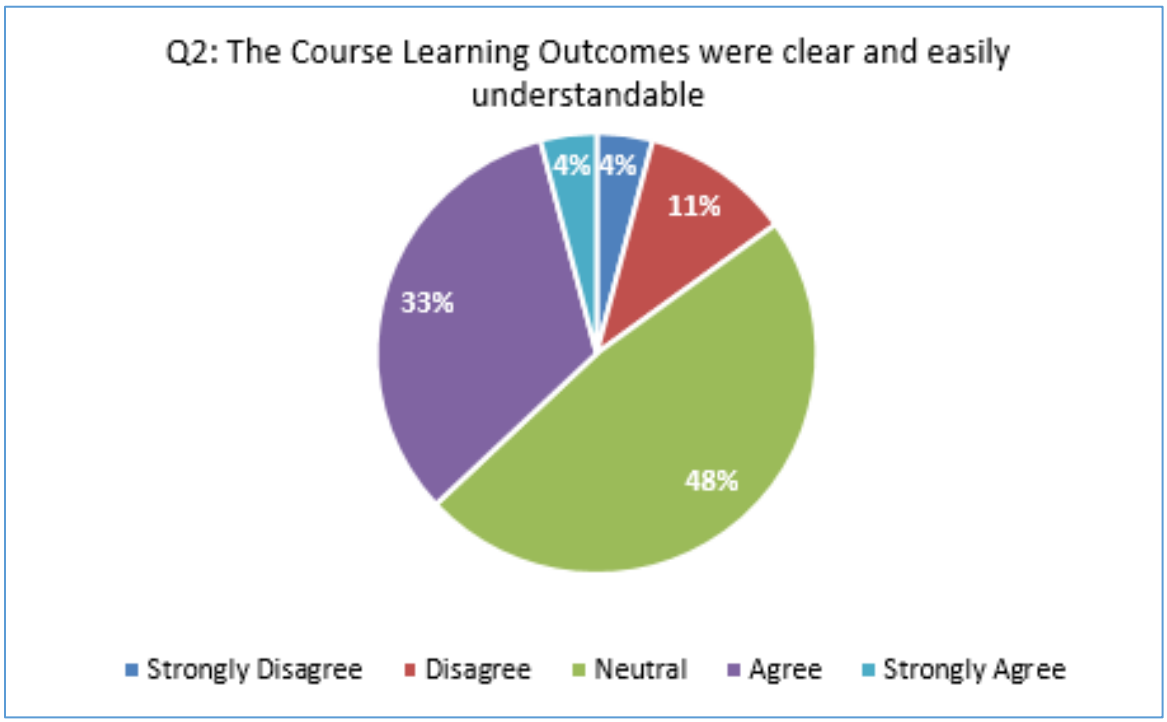

Figure 31: Students' Response for Question 2

While designing the CLOs it is the responsibility of the teacher to state all descriptions of the CLOs clearly so that the students may understand them easily to attempt the papers. An ambiguous statement might be the reason for not achieving the stated course learning outcomes. The department organizes different training sessions on OBE. In these training sessions, teachers learn how to design different CLOs with the help of different action words given in the model of Bloom taxonomy in different domains and levels.

The above chart represents the response of the students for the above question. The chart shows that 48 % students remained neutral. These students were early semesters of electrical engineering department who were indecisive to say anything about that clarity of CLOs. Perhaps they had some reservations about the stated CLOs or a bit shy or less confident to mention the reality.

The chart also shows that 33% students agreed and only 4% disagreed that the stated outcomes were clearly described and easily understood by them. These are the students who have obtained good marks in their courses and they believe that the stated outcomes for each subject were clear and easily understandable.

The chart shows the same ratio of 4% who have disagreed or strongly disagreed that the descriptions of the CLOs were clear and understandable. These students either could not perceive the statements due to lack of competence or because of their carelessness. They simply ignored the requirements of each question and attempted the papers in their own way. So, the above facts show that majority of the students is satisfied and believe that the stated outcome are clear and understandable.

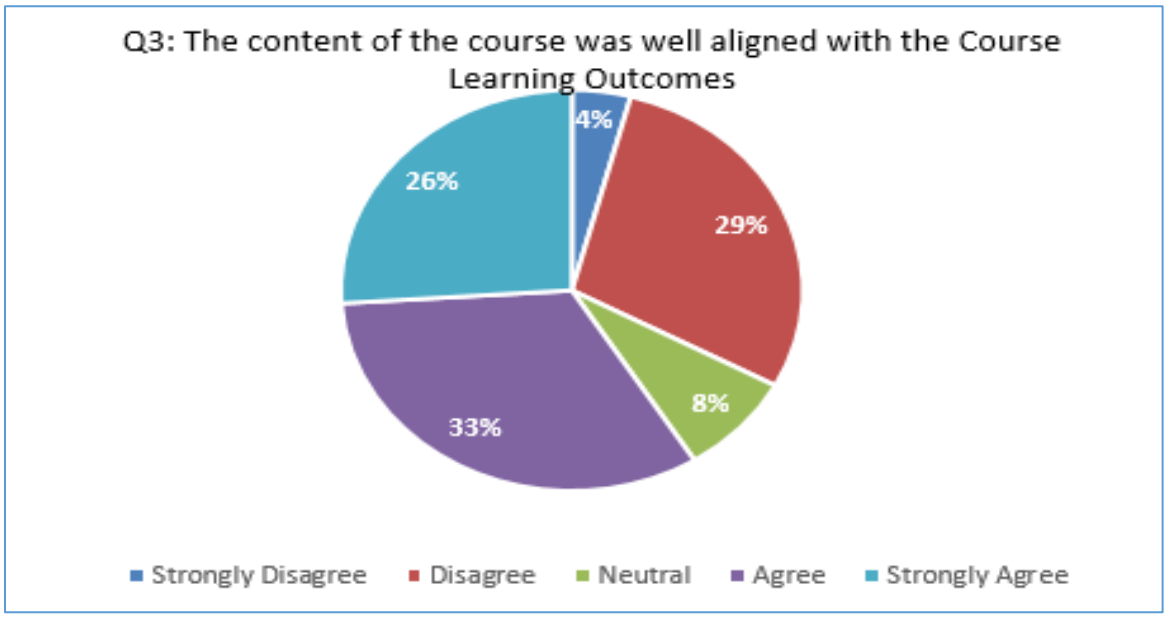

Figure 32: Students' Response for Question 3

The effectiveness of the CLOs is subject to their alignment with the contents of the course. Like designing of the CLOs, it is also responsibility of the instructors to ensure an alignment of contents of their particular subjects with the course learning outcomes. If the CLOs are not well aligned with the content, the desired outcomes cannot be achieved. Even the students will be confused if there is no alignment of content with the course learning outcomes.

The above chart shows that 33% students agreed and 26 % strongly agreed that the contents of their subjects which they studied were well aligned with the course learning outcomes. On the basis of their experience in first four semesters, these students have developed their understanding about the requirements about the OBE system and now they are in the position to decide whether the contents of each subjects are well aligned with designed outcomes or not.

The chart also shows that 29 % students disagreed and 4% strongly disagreed in their response to the above question that the contents of the subjects are well aligned with the outcomes. These students perhaps could not perform relatively well, that's why they have disagreed and think that contents are not aligned with the CLOs.

The chart also shows that8 % remained neutral to answer the above question. Perhaps these are the student either could not understand the statement of the above question or they are indecisive to make such judgments in their early semesters. Therefore, on the basis of these above-mentioned facts, the researcher is confident enough to interpret that majority of the students believes that the contents of their subjects are well aligned with the desired outcomes.

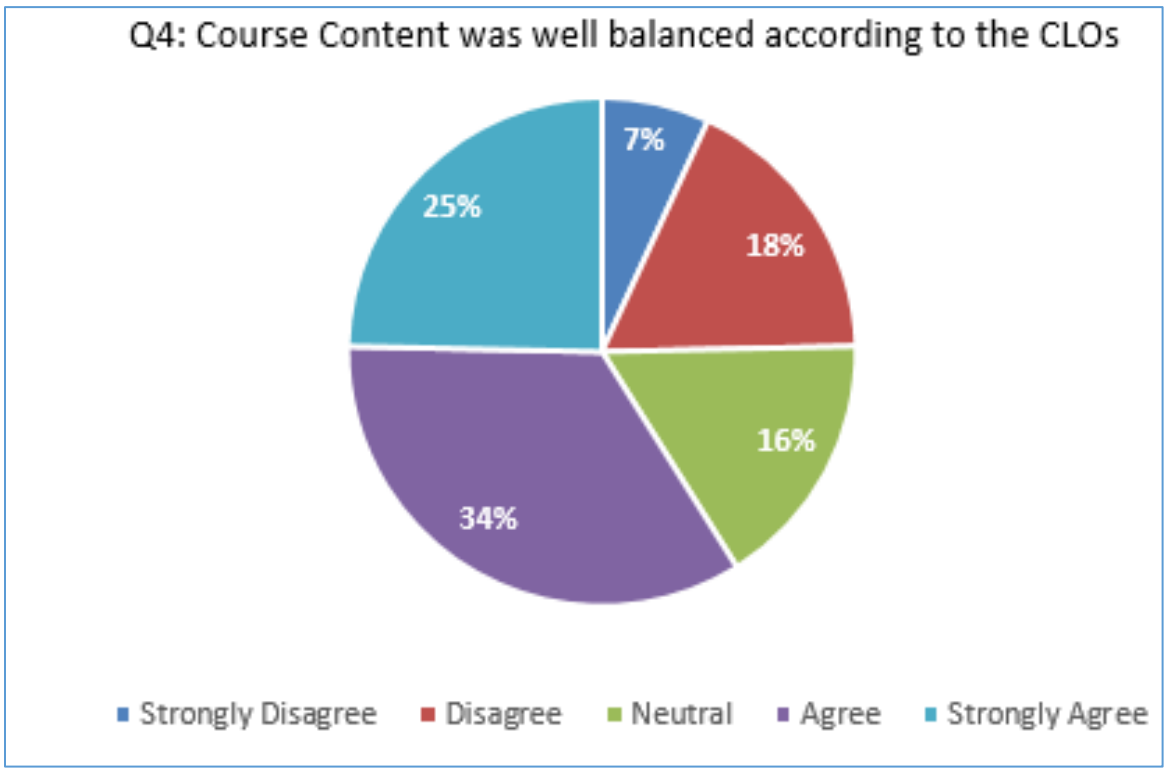

Figure 33: Students' Response for Question 4

In OBE system instructors are required to design a balanced content which should be according to the course learning outcomes which can be covered within the time span of a semester for each subject in a course. Similarly, too many course learning outcomes cannot be expected from the students to achieve. Teacher has to be careful so that he can keep balance between contents and the CLOs, otherwise it will create problems for his students to achieve the goals.

The above chart shows that 34% students agreed and 25% strongly agreed that the course contents were well balanced according to the course learning outcomes. In section3 of the same chapter, the analysis of the students' result indicates that the contents were well balanced because majority of the students have got good results.

The chart also shows that 18 % students disagreed and 7% strongly disagreed in response to the above question. These students have got relatively less marks and hold the teacher responsible for designing unbalanced contents and CLOs. These students were perhaps unable to judge whether the contents were balanced according to the outcomes or not.

The chart also highlights the response of 16% students who remained neutral to answer for above question. These students were mostly from first semester who were unable to judge whether the course contents were balance or not.

Above facts are enough to believe that the majority of the students think that the contents were balanced and designed in accordance with learning outcomes.

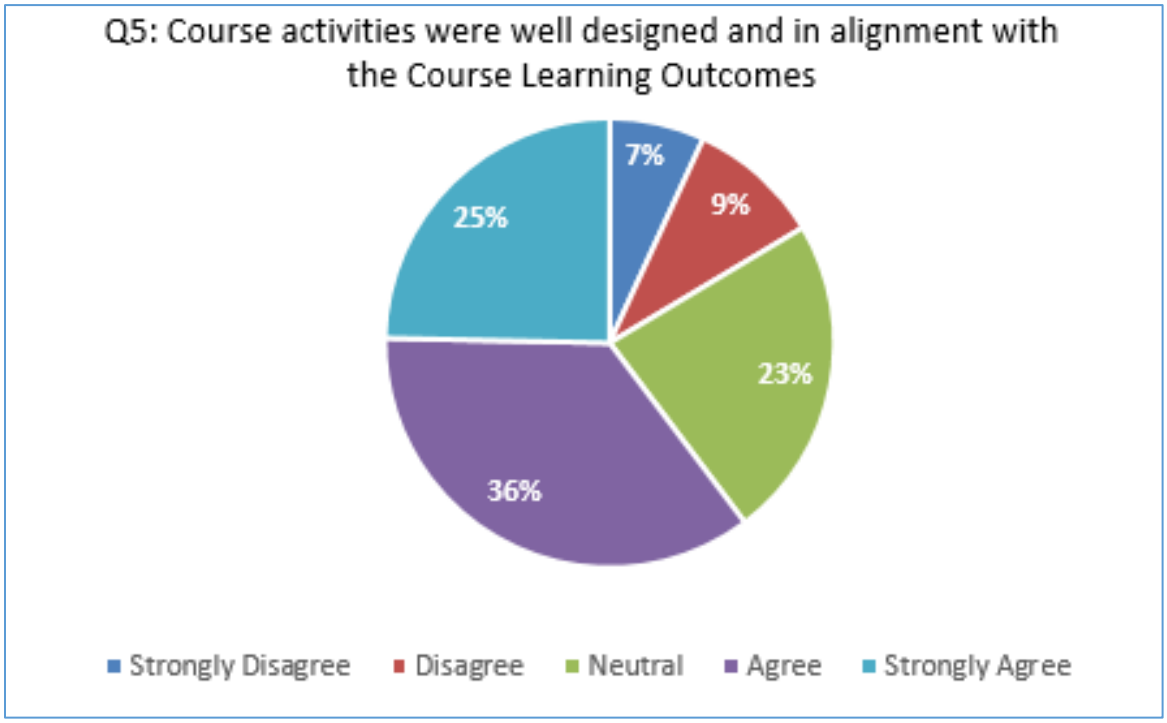

Figure 34: Students' Response for Question 5

The participation of the students in different activities in the class is considered mandatory. The performance of students in such activities is given some award or weightage in the internal evaluation. For this purpose, teachers arrange different activities such as group discussion, different exercises from the text books which students solved in the class to check their participation, confidence and knowledge.

The chart shows that 36 % students agreed and 25 % students strongly agreed that the activities held in the class were well designed and aligned with the outcomes. 23 % students remained silent where as 9% disagreed and 7 % strongly disagreed that the activities were well aligned and well designed. Perhaps this percentage of the students which has disagreed or remained neutral is the one which prefers home work over such activities. Therefore, on the

basis of above facts it can be concluded that course activities were well designed and aligned with the outcomes.

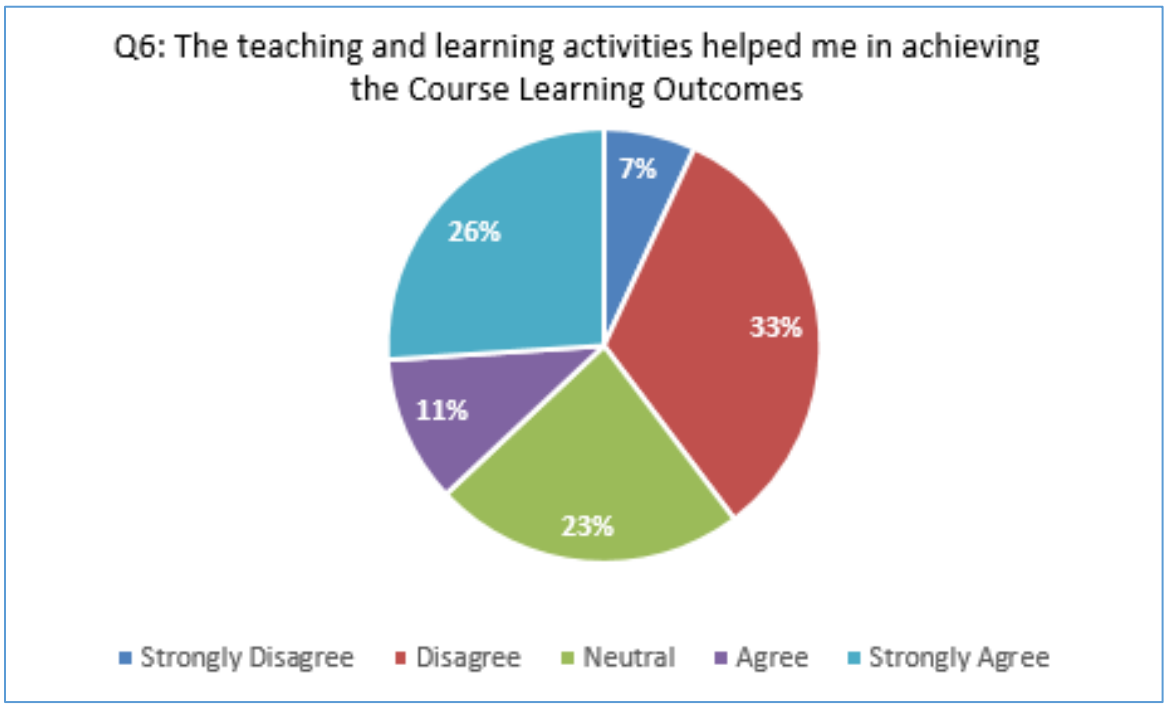

Figure 35: Students' Response for Question 6

In outcome-based education system, the students are provided with multiple opportunities so that they can achieve the learning outcomes to get through the exam. For this purpose, along with midterm and end term exams, they are examined through quizzes and assignments for each CLO. If a student loses marks in one particular CLO in exams, he still has chance to clear it through quiz or assignment.

The above question was asked to the students to know about the role of activities in achieving the learning outcomes. In their response, 11 % agreed and 26% strongly agreed that the activities in form of quizzes, assignments, dialogue and presentations proved helpful in achieving the desired learning outcomes. These students were punctual and regular. They appeared in all quizzes conducted by the teachers and they also submitted the assignments timely. Ultimately, they got very good marks in their subjects. These students realized that all the activities were helpful in achieving the outcomes that’s why they have agreed.

The chart shows that 33% students disagreed, 7% strongly disagreed and 23% remained neutral to answer the above question. As the majority of the students has disagreed that activities were helpful in achieving the learning outcomes, it means there is something wrong with the teachers. The teachers must conduct and mark the quizzes sincerely and honestly. Fake results must be condemned because sometimes the students do not perform well in midterm or end term exams but they perform better in quizzes or other tasks.

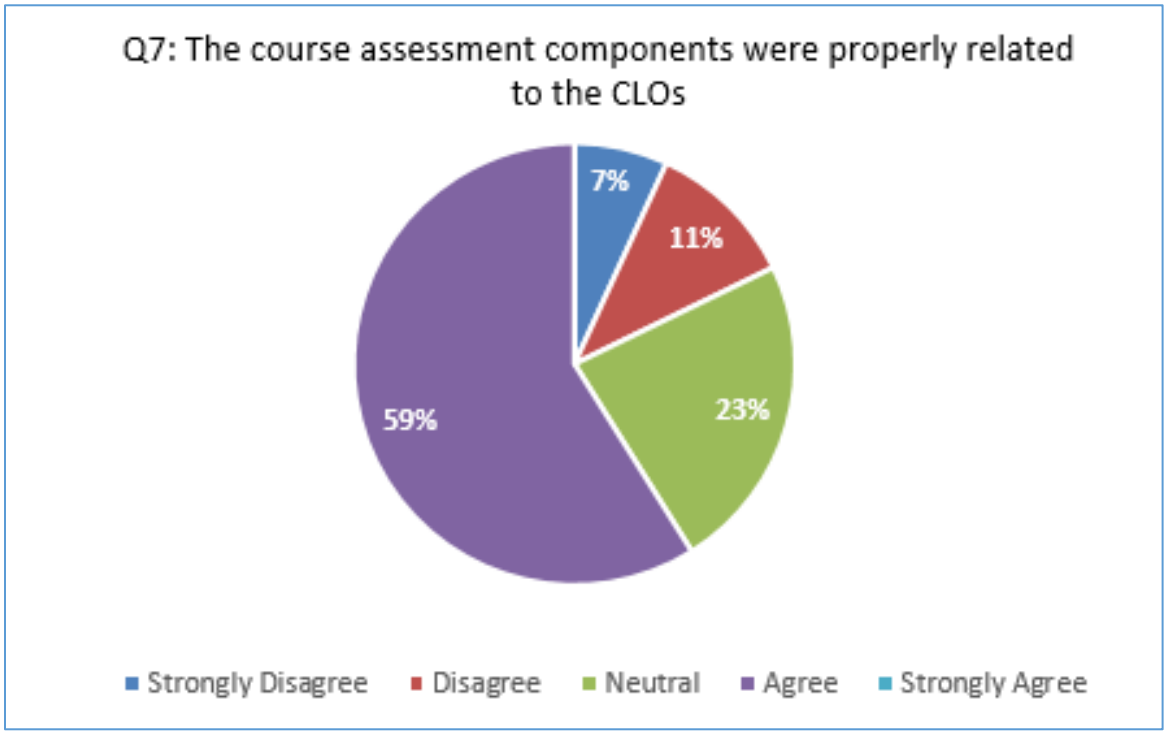

Figure 36: Students' Response for Question 7

To assess the designed CLOs the teachers are required to design assessment components in form of quizzes and assignments aligned with the CLOs. Like the contents of the subjects, the assessment components are equally important. They have weightage according to the grading policy defined by the institution. One assignment and one quiz is conducted for each CLO. Similarly dialogue and presentations are also judged with the help of rubrics.

The above chart shows that 36% students agreed and 25 % strongly agreed that the activities for each subject which they studied were well aligned with the course learning outcomes. The performance of the students which has been analyzed in the first section shows

that all activities were well aligned with the outcomes that's why the students have got good marks.

The chart also shows that 9 % students disagreed and 7% strongly disagreed in their response to the above question that activities are aligned with the outcomes. Mostly such students do not take all such activities seriously and submit the assignments too late. Some of them even do not appear in the quizzes and consequently lose the marks. Such students later blame the teachers that the activities were not aligned with the learning outcomes. The chart also shows that23 % remained neutral to reply the above question. Perhaps these are the students who either could not understand the statement of the question or they were indecisive to make any judgments.

So, the above facts show that most of the students have agreed that activities were well aligned with the learning outcomes.

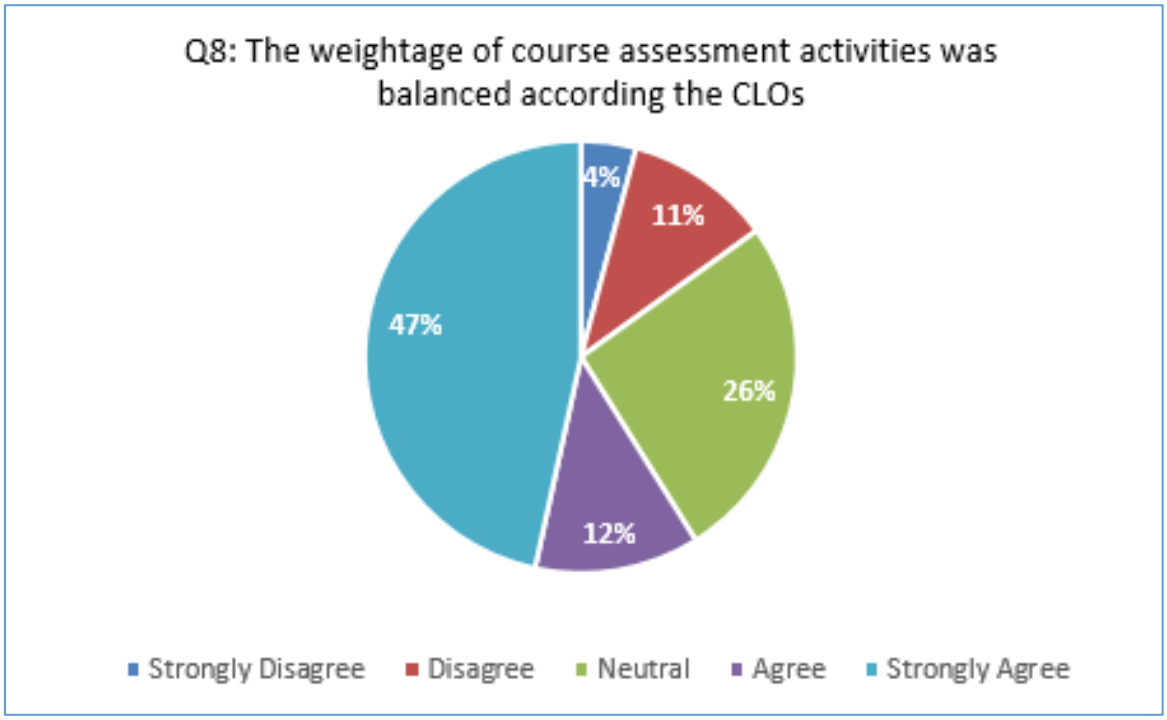

Figure 37: Students' Response for Question 8

In OBE system all tasks have weightage or credit which is included in the result of the students as internal evaluation. The teachers are required to create a balance in the weightage of different tasks. In other words, all activities in form of quizzes and assignments should be

given weightage according to the requirement of a question. They should not give more weightage to short activities. Similarly, they should not award less marks for the lengthy or difficult tasks and these activities must be according to the CLOs otherwise they cannot satisfy the students in term of awards.

The above chart shows that 47 % students strongly agreed and12 % agreed to the given question. It means that majority of the students think that the weightage of course assessment activities was balanced according to the CLOs. Only 4% students strongly disagreed and 11 % disagreed. This less percentage might be the error of judgment of these students who think that the weightage of course assessment was not balanced to the CLOs.

The chart shows that 26 % students' response was as neutral who at early stage of following OBE cannot give their judgment unless they experience it. As the above facts show that majority of the students believe that the weightage of the activities was balanced and this belief of the students can be considered as one of the reasons of achieving the CLOs.

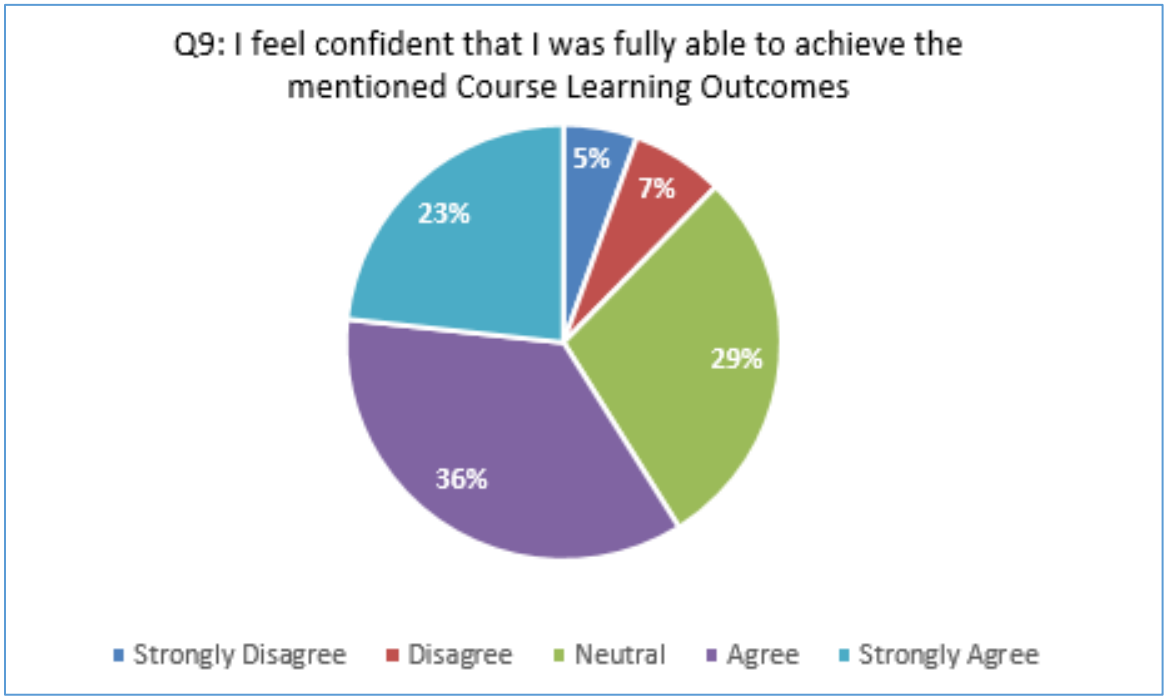

Figure 38: Students' Response for Question 9

The OBE system is bit complex. The new followers may face many problems in the beginning. The above question has been designed to take the opinion of the students that to what extent they are confident in achieving the mentioned CLOs. In response to the above question 23% students strongly agreed and 36 % students agreed that they feel confident that they were able to achieve the mentioned CLOs. This response shows that the targeted CLOs have been achieved by these students.

The chart shows that 29 % students remained neutral. These students were not in the position to make any decision in response to above question because it was difficult for them to make such judgment in early semesters. The chart also shows that only 7% students disagreed and 5% strongly to answer the above question.

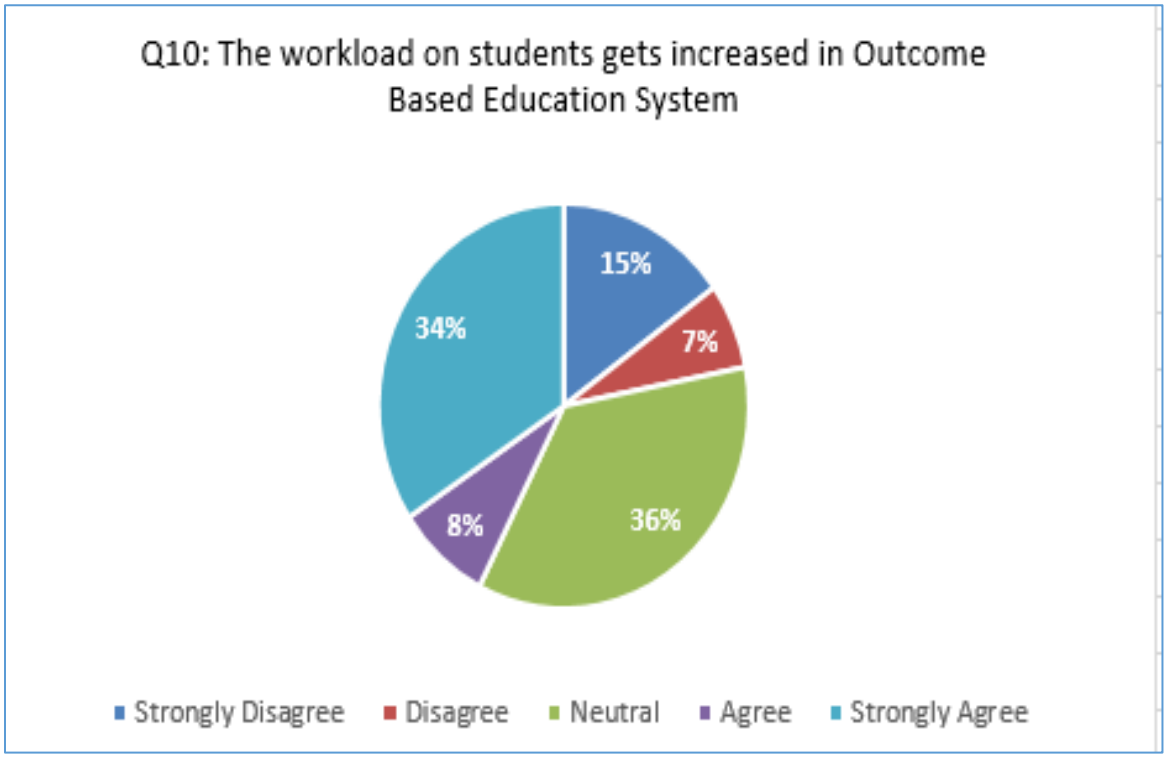

Figure 39: Students' Response for Question 10

In outcome-based education when different action words are described in term of CLOs, the teachers are supposed to design quizzes and assignments accordingly. In other words, one assignment and one quiz are assigned to the students against each CLO. If a teacher designs three CLOs for his subject, he is required to give three assignments and three quizzes

each for one CLO. According to the requirement of the subject, a quiz or an assignment can be replaced by a dialogue or presentation.

The above chart presents 34 % students strongly agreed to the statement that in OBE system the students have more burden. The students follow traditional method in schools and colleges where they do not have such tasks in form of quizzes or assignments. So, in OBE the students think that their work load gets increased in OBE system.

The response of 36% students is neutral. These students are perhaps indecisive at early stage of following the OBE system, that's why neither they agreed nor did they disagree. The chart also shows the response of 15 % students have strongly disagreed and just 7% students have disagreed in response to the above question. These students are mostly from senior semesters who are used to the OBE and don't feel the burden of the work. As the majority is of the view that the workload gets increase in OBE, it is concluded that the workload gets increased in OBE system.

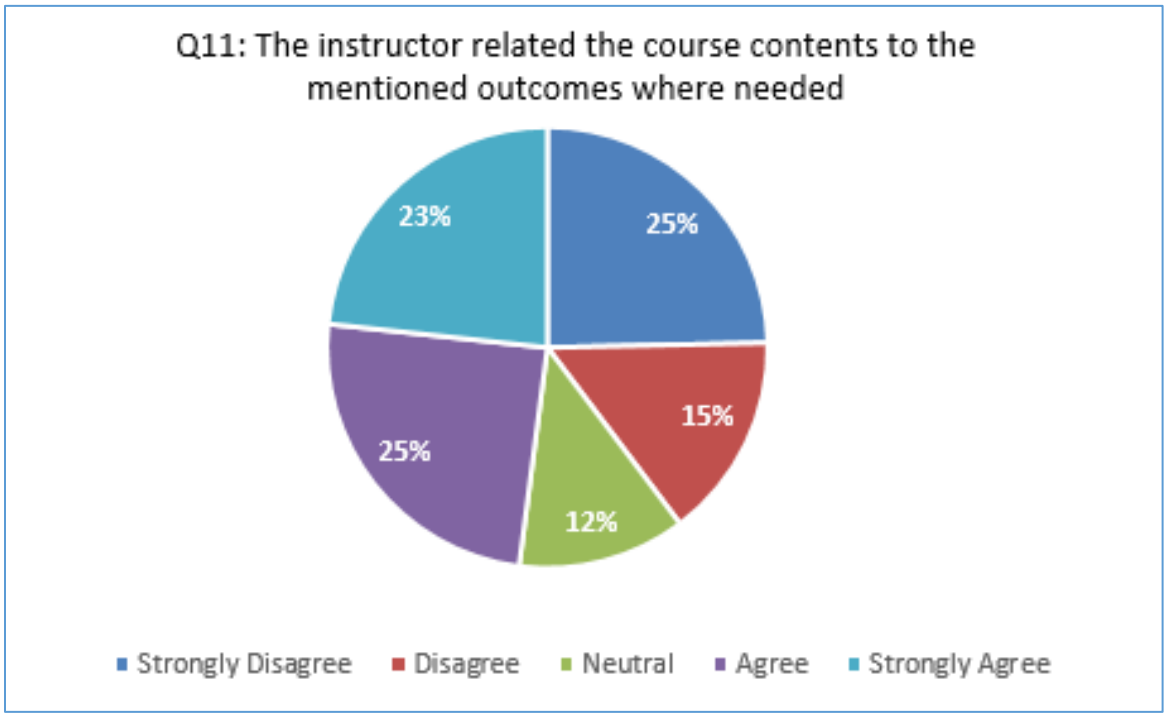

Figure 40: Students' Response for Question 11

In OBE system, it is necessary for the instructor to describe the contents in term of CLOs before the semester starts. In other words, he should be ready to implement the OBE right from the beginning of the semester. While teaching these contents, OBE system demands the teacher to relate the course contents with described CLOs so that the students attempt the papers accordingly to achieve the outcomes.

The chart shows that 25% students agreed and 23% students strongly agreed that their teachers would relate the contents of the course to the mentioned or described outcomes. These students are perhaps sincere that's why they have acknowledged efforts of instructors in implementing the OBE.

The chart shows that 15 % disagreed, 25 % strongly disagreed and 12% were neutral that teachers relate the course contents to the concerned outcomes. This negative response of the students demands teachers to relate the contents to the learning outcomes while teaching. In the light of above facts, we can say that teachers related the course contents to the designed outcomes. But the percentage of those students who disagreed cannot be ignored as it is 40 % which indicates that there is something wrong with the teachers. Either they related the contents to the outcomes rarely or randomly.

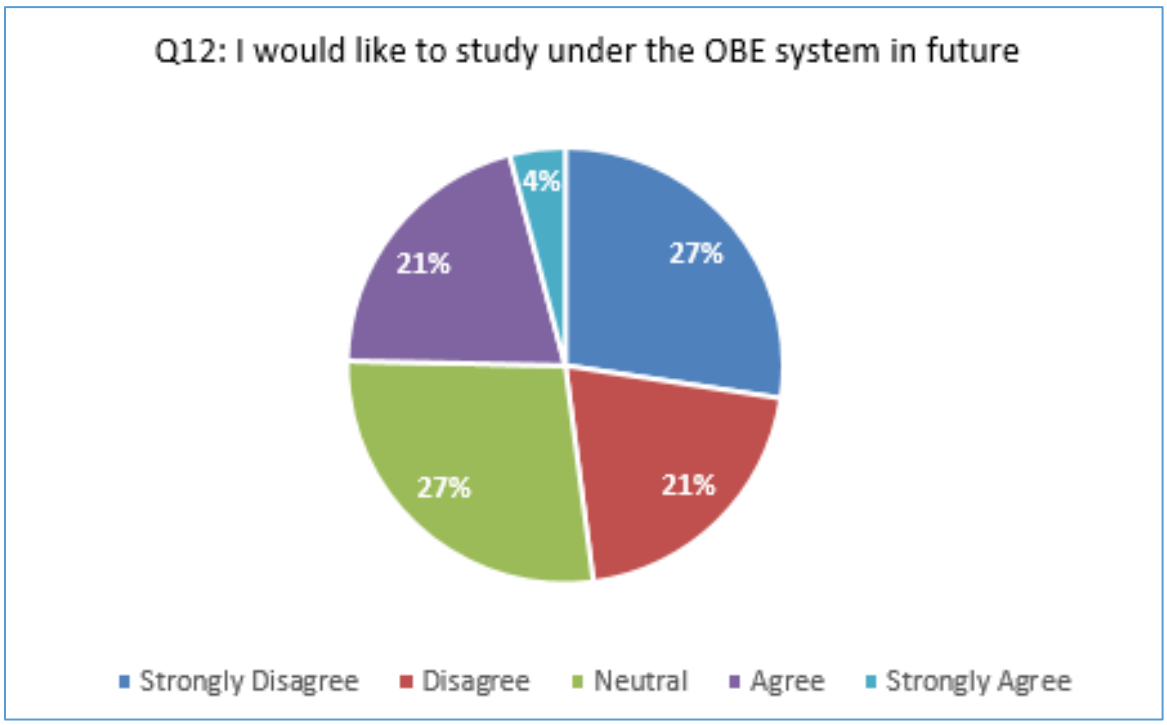

Figure 41: Students' Response for Question 12

In this chart we can see that 21 % students agreed and only4% strongly agreed that they would like to study under the OBE system in future. These students have realized the importance and benefits of outcome-based education. Through their experience they have understood how this system works. That's why they want to continue it in future.

This chart further highlights that 27% students' response is neutral. These students are at early stage of following the OBE and they are not sure that whether they will be able to continue it or not, as it seems bit complex but fact is that they have to follow it as per the requirement of the PEC. If these students do not follow it, they will either lose marks or they will be rusticated from the university.

The above chart high lights that 21 percent students disagreed and 27% strongly disagreed. These students might have their reasons but most probably their negative response indicates that they found it difficult to shift from traditional method to outcome-based education. Perhaps it was also difficult for them to appear in quizzes and submit the assignments timely. On the basis of above facts, it seems that students find OBE system and its requirements a bit difficult. So, they would not like to study under OBE system.

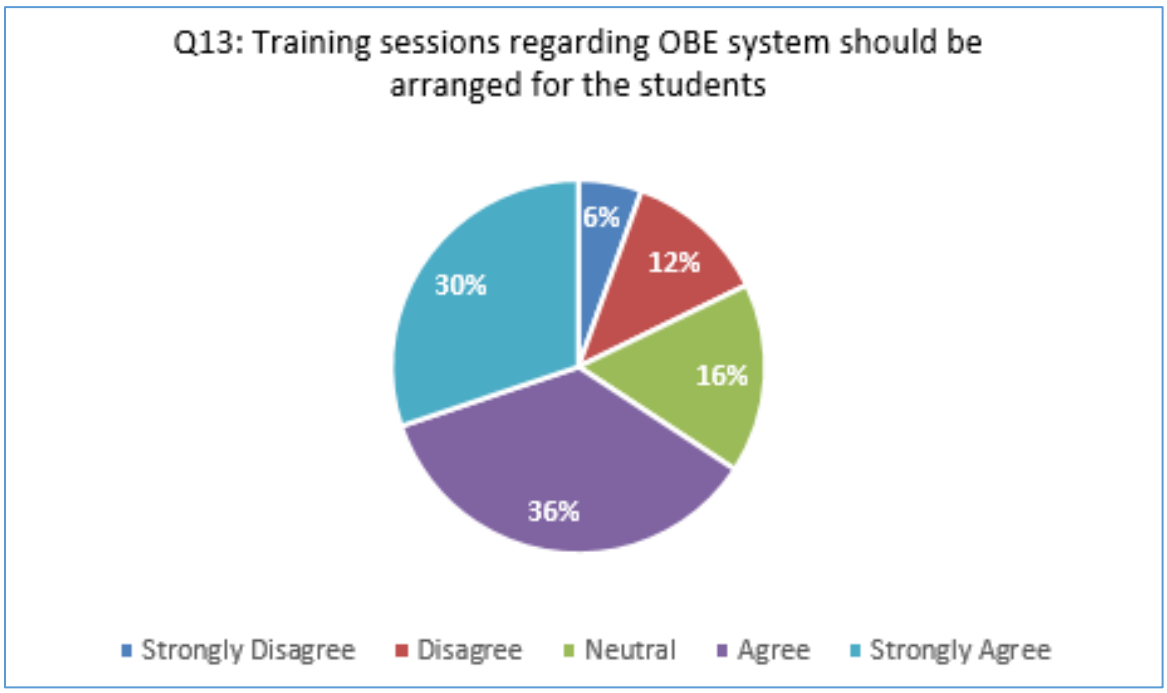

Figure 42: Students' Response for Question 13

After studying in schools and colleges for 12 to 15 years, the students are used to the annual system of exams where there is no weightage for tasks to include in the final results prepared by educational boards. When they join university where they have to follow semester system, certain tasks in form of quizzes, assignments, presentations and dialogues or group discussions are assigned to them whose marks are included in their results. When these tasks and semester exams are conducted through the outcome base education, these students cannot perform well because it is a sudden change for them to shift from traditional method to OBE system and they face many problems. The above question has been asked on the same basis and its results are described as below:

The chart shows that 36% students agreed and 30% strongly agreed that training sessions regarding OBE system should be organized for the students by the departs so that they can discuss their issues and get their problems solved. Their response shows that they definitely face problems because it is something totally new for them. The good thing is that they have shown their interest to learn it so that they can achieve the learning outcomes.

The chart shows that 36 % students remained neutral to answer the above question. The reason for their being neutral might be their shy attitude or at this initial stage they don’t know

the importance of OBE that how it is going to benefit them in future. That's why they did not respond as agree or disagree.

The chart also shows that 12 % students disagreed and only 6 % strongly disagreed. The reason behind their negative response for the above question might be their overconfidence or they don't know the importance of training session for OBE.

So, on the basis of above facts, it can be concluded that most of the students want the department to arrange training sessions regarding OBE system.

CHAPTER 5

MAJOR FINDINGS AND CONCLUSION

In outcome-based education system, course learning outcomes are considered as the criteria which is used to measure the performance of the students. It plays an important role in guiding the teachers so that they can implement it effectively. The current study was conducted to see that whether the outcomes were achieved or not. For this purpose, the researcher took the results of undergraduates studying in three different semesters in the department of electrical engineering at NUML, Islamabad. To take the feedback about the OBE system, the data was collected from teachers and the students of electrical department through the questionnaire. The triangulated data was presented with the help of graph and pie charts. The findings of this study are as below:

a) Majority of the teachers believe that the OBE system is better than the traditional system of education. The result analyzed in the 1st section of chapter three, shows that maximum students have achieved the stated CLOs' in Functional English. Out of 36 students only two students could not achieve the stated learning outcomes because they did not appear in the end term exam due to their personal issues. In Technical Report Writing and Communication skills all the students have successfully achieved the outcomes.

b) All the students except two, have also achieved program learning outcomes as well.

c) The outcomes can be achieved easily if the students develop the understanding of the course in advance. The analysis shows that majority of the teachers think that the students develop understanding of the course in advance in OBE system which is quite visible in their results. They achieved the outcomes as they had developed the understanding of their courses in advance.

d) The tools used to evaluate the performance of the students through OBE, are more effective because each tool is used against each CLO which provides maximum chance to the students to get through the course.

e) Most of the teachers and students think that in OBE system they are overburdened which may affect their performance.

f) In OBE system it is not possible for the teachers to cover all topics because of quizzes and other tasks like presentations or dialogues which are conducted by the teachers in the given credit hours of a course. Ultimately teachers find less time to cover the all contents of a subject.

g) Most of the teachers find OBE system a bit complex. The load of designing CLOs' For each subject, conducting quizzes, marking assignments and preparing results on outcome-based assessment sheets etc., all make the system complex for the teachers.

h) The workload on the students is not fairly reasonable which may affect the performance of the students who are physically weak.

i) The students were well aware of the learning outcomes that's why most of them have achieved the CLOs which has been depicted in their results in the first section of chapter3.

j) All the statements of CLOs were quiet flexible to accommodate different topics which brought about the achievements of the CLOs.

k) The activities in form of quizzes and assignments were designed effectively in relationship to their Concerned CLOs. In section one of data analysis, the performance of the students in different activities show that the activities were effectively designed that's why they have got good marks.

l) Teachers are motivated to continue following OBE system in future as well because on the basis of their experience they have realized that the process of teaching should be done through the OBE system.

m) The majority of the students think that the course learning outcomes were easy and understandable. Perhaps this is one of the reasons that most of them achieved the course learning outcomes.

n) The alignment of the course contents and activities with course learning outcomes is necessary. The analysis shows that the majority of the students believe that the course contents and activities were well aligned with the outcomes that's why their CLOs are achieved.

o) If the course content and different activities are balanced with the outcomes, the students will achieve the outcomes.

p) Some of the teachers do not relate the course contents with the course outcomes where needed which may create hurdles for the students to achieve the outcomes.

5.1 Discussion

This section deals with the discussion based on the answers of those questions which were posed in the start of this study. These answers have been derived from the triangulated data which has been analyzed in the third chapter of this study in three different sections. In this chapter the researcher has discussed two research questions of his study separately on the basis of those facts which have been collected from the students and the teachers of electrical department NUML, Islamabad through the questionnaires. The results of Functional English, Communication Skills and Technical Writing have also been considered to seek the answers of two research questions. The discussion based on these two questions is as below:

5.2.1 Reflection on Research Question 1

The first question of this study is related to see whether the OBE system is effective to achieve the outcomes of English language courses taught to the students of engineering department at NUML, Islamabad. The results of three English courses which have been analyzed in the first section of chapter 3, show that the outcomes have been achieved successfully by the majority of the students in three courses of English language. The researcher designed four CLOs for Functional English that is taught in the first semester of BEEE. The data shows that in this course 86% students achieved the first course learning outcome, 88% students achieved second course learning outcome, 92% students achieved third course learning outcome and 92 % students achieved the forth course learning outcome.

Communication and Presentation Skills is another course of English language that is taught in the second semester of BEE. For this course, three course learning outcomes were designed. The data shows that 100% students achieved all three CLOs.

Technical Report writing is the third course of English language which is taught to the students of BEE in fifth semester. For this course four CLOs were designed. In this course all the students have achieved all four course learning outcomes successfully.

In the light of above facts, the researcher has sought the answer for the first research question. The above facts clearly show that the OBE system is equally effective for English language courses which are non-engineering courses. The performance of the students in these three courses confirm the effective ness of OBE for the students of engineering.

5.2.2 Reflection on Research Question 2

The second question of this study is related to cognitive domain and affective domain which have been followed in designing the course learning outcomes. The researcher has used different action words from these two domains to design the CLOs. To see how these two domains are helpful in achieving CLOs, the PLO-10 has been considered which is mapped on these CLOs especially in the course of English language.PLO-10 shows the abilities of the students in oral as well as written communication.

In Functional English almost 94%, in Communication Skills and TRW 100% students have achieved program learning outcomes. In other words, we can say that the students have improved their oral and written communication. On the basis of these facts we can say that affective domain and cognitive domain are helpful in achieving program learning outcomes.

5.3 Conclusion

On the basis of above facts, it is concluded that the OBE system is effective to achieve the outcomes in English language courses of engineering. It is different from the traditional method of teaching. It provides more opportunities to the students to get through each course. This system is helpful in tracing the weak areas of the students. The two domains which have been followed, are also helpful in designing the CLOs and achieving the program learning outcomes. This study also concludes that if teachers and students have more work load, it may affect their performance which will ultimately affect the CLOs. Similarly.

The researcher recommends other faculties of the university to implement OBE system in their departments to get better results of their students. The researchers of the future are recommended to conduct research to find out why OBE is bit complex as compared to traditional method of teaching. They should also work how this complexity can be reduced or removed from the outcome-based education system for the convenience of those who will implement it.

5.4 Limitations

Many exploratory studies have certain constraints which bring about some short comings. It is due to the time constraints that this study has been confined to only three courses of English which are non-engineering courses.

5.5 Recommendations

The following recommendations may be followed to bring further improvements for the achievements of course learning outcomes:

a) Training sessions regarding OBE system should be arranged by the institution for both teachers and students.
b) All the teachers must relate the course contents with the course outcomes where needed.
c) The workload of the teachers and the students should be reasonable.
d) The teachers should not fix the statements of the CLOs rather they must be updated on regular basis.

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APPENDIX A

OBE System Adaptation Evaluation
Students' Perception Form

Name: _____ Semester:____ Degree Program: _____

(you may leave it blank if you like)

		Strongly Disagree				Strongly Agree
		1	2	3	4	5
1.	The stated Course Learning Outcomes have a strong relationship with my degree program	☐	☐	☐	☐	☐
2.	The Course Learning Outcomes were clear and easily understandable	☐	☐	☐	☐	☐
3.	The content of the course was well aligned with the Course Learning Outcomes	☐	☐	☐	☐	☐
4.	Course Content was well balanced according to the CLOs	☐	☐	☐	☐	☐
5.	Course activities were well designed and in alignment with the Course Learning Outcomes	☐	☐	☐	☐	☐
6.	The teaching and learning activities helped me in achieving the Course Learning Outcomes	☐	☐	☐	☐	☐
7.	The course assessment components were properly related to the CLOs	☐	☐	☐	☐	☐

8.	The weightage of course assessment activities was balanced according to the CLOs	☐	☐	☐	☐	☐
9.	I feel confident that I was fully able to achieve the mentioned Course Learning Outcomes	☐	☐	☐	☐	☐
10.	The workload on students gets increased in Outcome Based Education System	☐	☐	☐	☐	☐
11.	The instructor related the course contents to the mentioned outcomes where needed	☐	☐	☐	☐	☐
12.	I would like to study under the OBE system in future	☐	☐	☐	☐	☐
13.	Training sessions regarding OBE system should be arranged for the students	☐	☐	☐	☐	☐

OBE System Adaptation Evaluation

Teachers' Perception Form

Name: _____ Department: _____

(you may leave it blank if you like)

		Strongly Disagree				Strongly Agree
		1	2	3	4	5
1.	The students learn better in OBE system as compared to traditional education system	☐	☐	☐	☐	☐
2.	The students develop understanding of course in advance in OBE system	☐	☐	☐	☐	☐
3.	Student evaluation is more effective through OBE system	☐	☐	☐	☐	☐
4.	Quantifiable assessment components can be designed effectively	☐	☐	☐	☐	☐
5.	I believe that the course load should be decreased if OBE system has to be implemented	☐	☐	☐	☐	☐
6.	It is possible to effectively cover all contents in allotted semester time	☐	☐	☐	☐	☐
7.	I think that the teachers need an initial training before adopting OBE system	☐	☐	☐	☐	☐

8.	The OBE system is more complex as compared to traditional education system	☐	☐	☐	☐	☐
9.	The students were able to achieve the stated learning outcomes	☐	☐	☐	☐	☐
10.	The workload on students was fairly reasonable	☐	☐	☐	☐	☐
11.	The students were well aware of the learning outcomes throughout the course	☐	☐	☐	☐	☐
12.	CLO statements were flexible enough to accommodate different topics according to the course	☐	☐	☐	☐	☐
13.	I believe that certain CLO statements should be updated	☐	☐	☐	☐	☐
14.	I was able to design effective course activities in relationship with CLOs	☐	☐	☐	☐	☐
15.	I would like to continue following the OBE system in future	☐	☐	☐	☐	☐