ADDIS ABABA UNIVERSITY

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Modularization and the Practices of Module Development in Selected Ethiopian Universities

BY

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Addis Ababa University

Institute of Educational Research

Thisis to certifay that the thesis prepared by **Moges Logaw** entitled **Modularization and the Practices of Module Development in Selected Ethiopian Universities** and sumbitted in fulfilment of the requirements for the Degree of Doctor of Philosophy in Educational Research and Development complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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Modularization and the Practices of Module Development in Selected Ethiopian Universities

By

Moges Logaw

A Dissertation Submitted to the Institute of Educational Research

In Fulfilment of the Requirements of the Degree of Doctor of Philosophy in Educational Research and Development

Advisor**:** **Dr. Wanna Leka**

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ABSTRACT

This research investigated the practices of module development in Colleges of Education within the selected Ethiopian Higher Education Institutes. The research looked into the training program conducted by Colleges of Education within the Universities. Relevant literature on the practice of module development and modular instruction were also reviewed. In the research different modular theoretical assumption including the ADDIE (Analysis, Design, Development, Implement, and Evaluate) instructional model were examined and used in studying modularization and the practice of module development. Data were collected from three Universities namely Woldia University from the third generation, Wollo University from the second generation and Bahir Dar university from the first generation by employing questionnaires, unstructured and structured interviews, focus group discussion and document analysis. Data analysis was made by using chi-square, t-test and F-test for quantitative data and use of interpretational and reflective analysis for qualitative data. The findings showed that modularization and the practice of module development was not done as intended: critical gaps were not clearly identified and seen thoroughly; principles of designing modules were not kept and used; organization of modules were found weak; teaching methods that were employed were highly dominated by the traditional lecture method with less emphasis to others; and various techniques of assessments were not employed as needed. Eventually, it was concluded that the practice of module development in the college of education were found challenging that require consideration both from the government and institutions.

Key terms: Practice of module development; Modules; Modularization and Instructional model

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TABLE OF CONTENTS

Page

LIST OF FIGURES

Page

LIST OF TABLES

Page

LIST OF ACRONYMS

ADDIE	Analysis, Design, Development, Implement, Evaluate
CTE	College of Teacher Education
CTM	Committee for Tutorial Matters
ELIP	English Language Improvement Program
ESLCE	Ethiopian School Leaving Certificate Examination
ECTS	European Credit Transfer System
FDRE	Federal Democratic Republic of Ethiopia
GEQAEA	Government of Ethiopia Quality Assurance and Examination Agency
HDP	Higher diploma Program
HEI	Higher Education Institute
ISD	Instructional System Design
KSA	knowledge, skills and attitudes
LAMP	Leadership and Management Program
MOE	Ministry of Education
NAAC	National Assessment and Accreditation Council
QI	Quality Indicator
TEI	Teacher Education Institute
TESO	Teacher Education System Overhaul
TDP	Teacher Development Program
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UNU	United Nations University
USAID	United States Agency for International Development

CHAPTER ONE

INTRODUCTION

This chapter introduces the practice of modularization in general and module development in particular in Colleges of Education within the selected Ethiopian HEIs. The study finds its basis in the needs for improving modularization in Colleges that had had a lot of problems within its practice. The practice of module development in Colleges is outlined in the background of the study consisting of two aspects, namely quality of education and modularization.

The study presents the issues of quality of teaching specifically modularization, statement of the problem and objective of the study. The research question is then formulated as guidance for the study. It is followed by the significance and scope of the study as an appropriate approach to make familiar the issues for any beneficiaries.

1.1. Background of the Study

Education is a social activity that takes place everywhere, initiating the younger generation into social norms, values and skills that adults think they need and should know for their own development as useful persons in society (Dewey, 1916). It is by means of education that we become socialized into society with other human beings. This could be done through the provision of quality education.

Research shows that teacher quality is significantly and positively linked with pupil attainment, and that it is the most important within school aspect explaining student performance and their communication (MOE, 2007).The quality of instruction that students receive in schools may affect their academic achievements which could be a result of both incompetent teachers and weak educational program. Such incompetence

may be a result of limitation with respect to knowledge, poor professional development, and challenges to new method of teaching, or less attitude about the teaching profession and lack of commitment to professional duties.

Generally incompetence in teaching involves one or more of the following factors: Poor classroom organization, lack of knowledge of the subject-matter, poor methodological competencies, ineffective use of languages, poor planning and preparation of lesson, lack of motivation , poor material utilization competencies, poor construction and employment of various evaluation techniques or lack of communication (Highet,1963).

Among all the contributing factors to education quality at all educational levels, quality of teaching is recognized as the key factor without which other quality inputs are unlikely to be successful. As a result, teachers are on the front line where quality improvement is concerned; they need to be involved in such development work. According to UNU (2009), educational quality and an improvement of student completion rates highly depend on the quality of training programs. It is, therefore, of paramount importance that teachers should not be left out in the work to improve the quality of education. They are the key to it.

In order to address the growing concern of quality of education, it is crucial to examine the core of the problem that is, the type of professional preparation and training being provided. As a first step, it is required that the developmental needs of institutes and of teachers should be identified and examined. Secondly, a framework that provides a systematic recording tool helping institutions to ascertain and assure their quality provision needs to be evolved (NAAC, 2007).

For instruction and learning to become effective, the teacher must be concerned with: the quality of instruction, which means that instruction, must make sense to the students; the appropriate strategy to use; the incentive to the students for them to learn; and sufficient time for learning to occur (Bedaure , 2012). Teachers must adapt instruction to the students' level of knowledge and development, motivate them to learn, and manage their

behavior. According to Bedaure one important issue is matching tasks to students' abilities, or vice versa.

Whatever approach a teacher uses, a clear focus and explicit learning outcomes that students understand and are held accountable for learning; material or materials presented in a manner that elicits active inquiry and interest; guidance provided by the teacher as students interact with new materials or tasks; and feedback about the quality of students' learning are basics (Bedaure, 2012).

One instructional strategy, which has recently gained popularity, is modular instruction. Of all the various systems of individualized instruction, modular instruction is one of the recently used and combines many advantages of a number of separate instructional innovations, such as performance objectives, self-pacing, and frequent feedback (Hand et al., 2000).

According to Hand et al. observation, modules have a variety of aims, which fall broadly into four main categories. The first one is the development of the student as an independent learner and critical thinker. The second one is the enhancement of individual study skills such as writing essays and making the most of class sessions and lectures. The third one is the development of inter-personal attributes including working with others, presenting and communicating ideas and arguments, and active listening. The fourth is the provision of support for students during their transition into higher education and back out into the world of work.

As Russell (1974) has given an emphasis from the sound administrative point of view the importance of feasibility study as the beginning step in the modular instruction is mandatory. Russell recommended that professionals first investigate whether this mode of instruction is feasible under local conditions. According to this author, the next step is the design of new modules, if no modules are available.

In Ethiopia, Higher Education Institutions have embarked on major reform since last decade. Of all important tools of the reform, Business Process Reengineering (BPR) and Teacher Education System Over all (TESO) were the most known. According to MOE (2012) in the reengineering of the teaching learning core process, modularization was proposed as a best way for the implementation of curricula and the production of competent graduates. Some of the reasons of this modularization were; the first one is that the existing curricula are discipline based and the courses are fragmented. They are not organized around competences. As a result, the curricula do not enable HEIs to produce competent graduates. Students who drop out from universities are simply wastage because they cannot be certified in any of the competences as a result of the fragmented courses; the second reason is that the existing curriculum does not say anything about student work load which is very important for students' success in their academic life. What is mentioned there is only the contact hour that the instructor uses only for the classroom. Hence, student workload is one of the central points in the modularization; the third is that there is a loose connection between the world of education and the world of work because of the inherent problem of the existing curriculum. Furthermore, the traditional curriculum focused on the teacher rather than the learner (MOE, 2012).

Currently there has been a paradigm shift taking place, moving the emphasis from teaching to learning and a more student-centered curriculum. This change has impacted on the curriculum design process with a greater emphasis on the learning in terms of knowledge, skills and competencies within courses and modules.

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The program has already implemented in most of our universities. By now almost all have already taken the courage to move forward in implementing modularization. Most faculties within the university have already organized their curriculum into module.

In Ethiopia, Part of the curriculum revision in higher education imposed by the National Qualifications Framework was the conversion of college subjects and courses to modules.

The process was intended to improve portability and credit for achievement, in comparison with year-long subjects.

Modules were to be redesigned in terms of outcomes, according to guidelines of the Ethiopia Qualifications Authority and were to shift towards continuous assessment practices

From the above models of modular approach our public universities are expected to follow variation one of model one. In doing so, the identity of courses have to be maintained and graded independently. This is because there is a dearth of experts in modularization who will direct the integration of contents and immediate move to integration (MOE,2012)

1.2. Statement of the problem

As many evidences indicate, among many teachers in Ethiopia, the critical determinants of effective teaching, namely knowledge of the subject matter, pedagogical skills and motivation are actually lacking (Ambaye, 1999). Teachers' motivation is declining and teachers began to develop low self-esteem in their professional role, and felt that they were no more respected by others. As a result attrition of teacher is increasing and this in turn results in the possible deterioration of quality of education (Manna and Tesfaye, 2000).

Despite the government's efforts such as establishing the Teacher Development Program (TDP) and commissioning the World Bank Project on Education Quality Improvement Project, the quality of teachers and education in general continues to decline. Perhaps the most powerful indictment of the seriousness of declining quality in teacher development and consequently the student learning can be seen in preparation of teachers in all levels.

According to Daniel's (2004) observation, in most higher education, lecture method was dominating in the teaching learning process. It persists as a common mode of instruction in colleges of further education and elsewhere. As Curzon, 1985:191 cited in Daneil (2004), lecturer is a person who talks in someone else's sleep.

In a study made by Alemayehu and Solomon (2007) on active learning strategies in TEIs through HDP, it was found that most college instructors in Ethiopia were not interested on the practice of active learning in the actual teaching learning process.

The other significant serious challenge which was observed by Daniel was attitude towards education course and teaching. Here, knowledge of the subject matter is considered as sole determinant factor for effective teaching. Such understanding does not consider the central person, a student, who is in reality the main actor of the teaching learning process. If teachers do not understand and appreciate their students, it is very difficult to make the teaching learning process student centered and to encourage the deep approach to learning. Similarly, UNESCO (2005) has identified the problem of changing the focus of teacher training from theoretical to methodological approach to enhance the quality of teachers. These types of limitation together with the general social attitudes towards the teaching profession may affect the quality of teaching and learning.

Due to the rapid expansion of HEIs, many challenges are left untouched as a result many poorly prepared graduates were produced. As scholars agreed here in Ethiopia, very little efforts have been made to improve quality education especially in College of Education within the HEIs.

In comparison to the international dimension, there is a need of focusing on the exchange of knowledge, interactive networking, mobility of teachers and students, and working on international research projects (Firdissa, 2006). According to Firdissa lack of higher education staff empowerment, support, incentive systems, recognition, clear policies and guidelines to link teaching with research; unavailability of explicit plan to internationalize programs of HEIs, and staff members low commitment and conviction to

assertively strive to improve their professional practice are some of the areas in higher education which need more attention in the enhancement of quality of education.

Among all, one of the most critical constraints in higher education for quality education is poor organization of teaching module. To make the teaching learning process more effective and efficient, it is apparently very important that teachers have to look the necessary competencies, abilities, knowledge, and skills while she/he develops a module (Rosenberg, Sindela & Hardman, 2004). A module has to be developed so as to make learner more active and cooperative.

In any training programs many teachers lack the latest educational strategies such as the use of modern educational aids and instructional design (Collins & White, 2001). In such programs, inadequacy of field based experience fail to equip trainees with the practical skills necessary for effective world of work (Carroll, Jobling & Forline, 2003).

In a study made by Dawit(2008), it was discussed that the use of module in the study area does not meet those high level of outcomes and students are not invited to read other related materials. According to Dawit, modules were not prepared in the accurate sense and they are filled with facts and finished information. The above result was supported by Mehari ‘s (2007) study that the studied modules were not good enough in making students get involved in the teaching learning process. Based on the stated critical professional development limitation in enhancing quality education in HEIs in Ethiopia, this study is planned to examine the status of modularization with a special focus on module development practice.

Thus, this national and international critical issue that is related to quality education initiates me to carry out research on the above specified topic. Although a few studies dwelling on some aspects of use of modules have been undertaken in Ethiopia, it seems that much attempt has not been made so far to investigate modularization and the practice of module development in HEIs. Keeping this point in mind, the present study has examined the five stages of module development practice namely; need assessment,

design, development, and implementation and evaluation mechanism in CTE within the selected Ethiopian Higher Education Institutes.

1.3. Objective of the Study

The general objective of the study is to examine modularization and the practice of module development in College of Education within the HEIs in enhancing quality education. The specific objectives of the study include:

1. To check whether or not the practice of module development has gone through an effective performance gap analysis
2. To examine the instructional design elements within the module
3. To examine the organization of teaching learning strategies within the module
4. To examine the various teaching learning methods within the modular instruction during implementation
5. To check whether or not evaluation of the module has taken place for successful program implementation
6. To identify the major contributing factors that affects the practice of module development while modularization is undergone

1.4. Research Questions

Research questions were adapted from the problems stated above and they provide focus and direct attention to the major issues of concern in this research and what the researcher specifically wanted to understand by conducting this study. Therefore, they do have the capacity in determining what data should be collected and how and where to be collected. In order to achieve the objectives of the study, the following research questions will be addressed.

1. To what extent the performance gap has been analyzed to develop a training module within the program?
2. To what extent key instructional design elements within the module have been kept?
3. How well competence based issues and basic teaching learning strategies were included in the modules?
4. To what extent the principle of modular instruction methods of teaching and learning has been kept during the implementation phase?
5. To what extent the assessment mechanism have been successfully implemented during the module development?
6. What are the major factors that affect the practice of module development?

1.5. Significance of the Study

Knowledge on modularization specifically on module development is crucial for all of us. Here many educators and practitioners have given more attention to how quality education could be achieved through an effective implementation of modular approach and how such a program can be improved. Hence, it is essential to assess the practice of module development with their constraints in the HEIs to know more about the issues with their implication and to set the right remedy as per their magnitude.

The significance of the study explains the reasons why the study is conducted and the values of the research findings. Due to this reason, it is expected to identify the people or institutions that may benefit from the research results. Accordingly, this research is thought to be significant in the following arenas.

a. It provides a rich description of the contemporary modular instruction at HEIs by documenting and clarifying its implementation problems to all interested institutions and individuals.
b. It helps all stakeholders within the HE program mainly; researchers, educators and policy makers to improve the current practices of modularization.

c. It can become a baseline for further investigation for other researches that focus on the implementation of apprenticeship training.

Besides, knowledge of the practice of module development in HEIs, the finding of this study can encourage Ministry of Education to look once again the status of modular instruction within the higher education institutions and to take appropriate measures to maintain the quality of modular instruction across all HEIs.

The other important contribution of this study is it encourages policy makers in education and strategic education planners to explore the best practices used elsewhere to improve and support practitioners both in the pre-service and in-service training programs for the improvement of educational effectiveness.

Moreover this study helps teachers to be more familiar with strategies for analyzing, planning, developing, implementing, managing and evaluating modules. It equips teachers with essential concepts of their subject and with the skills and strategies for designing and teaching.

1.6. Scope of the Study

Scope of the study refers to the conditions that pose restrictions on the conclusion and application of a research endeavor (Best & Kahn, 2003). Accordingly, lack of financial resources has affected this study in taking more HEIs and colleges to investigate the problem as intended. As a result, it was exclusively limited to the investigation of the problems in three colleges of education of year two students from the three selected Ethiopian HEIs. The reason for selecting year two students and their respective teachers was both of them have gone through modular instruction for two years.

The study does not attempt to offer a single, one-fits-all, conclusive definition of neither module development practice, nor does it try to identify a set of characteristics of

modularization. The study does not take as one of its objectives the mission of establishing whether one group's understanding of modularization is superior to another, or whether certain teaching methods or techniques are the only ones compatible with the practice of module development. Instead, the study is primarily concerned with identifying the degree to which the practice of module development match or mismatch with the principle of modular instruction.

Finally, due to few numbers of HEIs that were taken as a sample, research results are not intended to be generalized to a larger population.

1.7. Definition of Terms

College of Education: a professional training college for teachers within Higher Education Institutes.

Competence: A cluster of related abilities, commitments, knowledge, and skills that enable a person to act effectively in job or situation. It indicates sufficiency of knowledge and skills that enable someone to act in a wide variety of situations.

Higher education institution: an educational institution that provides an educational program for which the institution awards a bachelor's degree or provides not less than a 2-year program that is acceptable for full credit toward such a degree, or awards a degree that is acceptable for admission to a graduate or professional degree program.

Modular instruction: Modular instruction defined as instruction which is either partly or entirely based on modules. Current uses of modules range from one or a few modules inserted into a traditional course, through complete course that consist of a prescribed sequence of modules, to courses that offer the student the choice of a certain number of modules among a large set of modules.

Modularization: It is the activity in which the structuring in modules takes place. A modularization approach takes objects apart, eliminating duplicates and puts the rest together again in a well-structured way.

Module: a module is an essential and self-contained functional unit relative to the product of which it is part. The module has, relative to a system definition, standardized interfaces and interactions that allow composition of products by combination.

1.8. Organization of the Dissertation

This dissertation consists of six chapters and organized in the following manner: Chapter I includes an introduction to the study, statement of the problem, purpose of the study, questions guiding the research, delimitation and limitation of the Study significance of the study and, definition of terms.

Chapter II contains the literature review pertinent to the practice of module development and factors related with modular instruction. Chapter III consists of theoretical model and conceptual frame work. Chapter IV focused on description of the procedures, instrumentation, and methodology of research and general design of the study. Chapter V presents and analyzes the data obtained by the study. Chapter VI includes the summary of results, conclusions and associated recommendations related to the study and for further study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Introduction

In quantitative and qualitative research the literature review plays various roles. In quantitative research, literature review is usually done prior to the data collection in order to gain a general understanding of the existing knowledge of the topic. Moreover, it helps to integrate the new results with the research study made by others (Creswell & Plano Clark, 2007; Johnson & Christensen, 2004).

However, in qualitative research, the views of the researchers have resulted from the development of two schools of thought. One school of thought believes that the researcher should conduct a full coverage of the literature review (as in the case of ethnography) before collecting the data. On the other hand, the other school of thought thinks that it is not necessary to review the literature first due to the fact that new research questions, hypotheses and theory may emerge while collecting the data. According Johnson & Christensen (2004) in most qualitative research the second approach is not recommended. This is due to the fact that the approach may not give chance to raise basic issue and make the necessary adjustment and take instant measures related to the research problem under investigation (Johnson & Christensen, 2004)

It is, therefore, more important to conduct the literature review in such type of research before the actual data collection takes place. Due to this reason some theoretical assumptions and relationships were reviewed here in the chapter:

2.2. An Overview of Higher Education in Ethiopia

In this section information that are related to the Ethiopian higher education system has been given by starting with a brief overview of the demographic and socio-economic context of the country and followed by discussions on the historical development and structure of higher education in Ethiopia.

In Africa, Ethiopia is the second most populous country next to Nigeria, with a total population of 93,877,025 million (Central Statistics Agency, 2008). Ethiopia possesses a 1,700-year tradition of elite education linked to the Orthodox Church. Since the sixth century Ethiopia's Orthodox Church had maintained a highly structured, organized system of education from primary to higher education. The focus of this education was around religious themes and principles. The educational system was modernized by mobilizing foreign scholars to Ethiopia as well as by sending students abroad (Pankhrust , 1972). During Emperor Menilik (1865-1913) and Emperor Haile Selassie I (1930-1974), they had sent several hundred students abroad for education. As a result, by 1931 many modern schools were established. However, the 1935 invasion by Italy seriously disrupted the emerging Ethiopia's educational system. The invaders eliminated educated Ethiopians; schools were closed for military purposes; consequently, shortages of teachers and teaching materials were created. During the five years of Italian occupation the invaders attempted to develop the empire with rigid Italian skilled labor alone, and the stultifying policy of providing only the most limited schooling to the indigenous population were likewise, detrimental.

During the reconstruction era (1941-1951), following Italy's expulsion from Ethiopia, the government of Ethiopia mobilized foreign scholars to help in modernizing the educational system (Teshome, 1990). According to Teshome secular higher education was initiated in 1950 with the founding of the University College of Addis Ababa. During the following two decades, half a dozen specialized technical colleges were established. These institutions hosted an educational culture that was heavily influenced by its long informal association with the Orthodox Church.

To maintain international standards, our new higher education institutions strove with considerable early success. But according to Teshome's observation the cost was high, with wastage rates approaching 40 per cent in the late 1960s. At that time the need for reform began to grow. But those incipient reforms were truncated by political events.
According to Saint (2004), as the twentieth century drew to a close, Ethiopia found itself with a higher education system that was regimented in its management, conservative in its intellectual orientation, limited in its autonomy, short of experienced doctorates among academic staff, concerned about declining educational quality, weak in its research output and poorly connected with the intellectual currents of the international higher education community. The reform pressures that had begun to build in the 1960s, only to be suppressed by the Derg in the 1970s and 1980s, returned to the fore with the establishment of elected government in 1994. This time higher education reform was embraced as a critical national need by the government of the day.

Currently Ethiopia is engaged in a highly ambitious effort to re-align its higher education system in more direct support of its national strategy for economic growth and poverty reduction. Its achievements over the past twenty years have been impressive. The reforms have targeted all levels: the overall system, the institutions and the academic programs.

At the system level, thirty four public universities now stand in the place of the previous two-university 'system.' An aggressive expansion policy designed to raise the country's insignificant tertiary enrolment ratio to more respectable levels is producing results. Total tertiary undergraduate degree program enrolments in universities have been grown up from 157,429 in 2008/9 to 294,357in 2012/13 (Ministry of Education, 2013)

2.3. Quality Education

There are different views of quality. The issue of quality is both confusing and contradictory (Amare, 2005). As Middleharts (1997) cited in Amare (2005),the issue of quality is a spectrum between fitness for purpose, and academic excellence.

The idea of quality education derives from the manufacturing industries that supposedly assess a product against its stated purpose. According to Barrow (1999) cited in Amare (2005), the perspective of quality can be seen in four different ways:
Firstly, quality as expressional which focused on distinctive elitist and often linked to the idea of excellence of high quality but often unattainable by most.
Secondly, quality as transformation stresses on the empowerment and enhancement of students. In this case quality allows students to take control of themselves and the learning process.

Thirdly, quality as value for money focuses on the outcome of the educative process and seen as the lowest possible costs.

Fourthly, quality can be taken as fitness for purpose. This relies on the product of the institution that meets the needs of the consumer. In this case, quality could be seen as a measure of the extent to which an institution can fulfill its mission or educational program to meet its aim.

In an area of education the definition of quality which stress on quality as fitness for purpose has been widely used by quality agencies due to its stresses in meeting the general accepted standards which were developed by an accreditation or quality assurance body (Amare, 2005).

Here, one can see its focuses on the efficiency of the process at work in the institution or program in fulfilling the intended objective.

2.3.1. Key Issues Influencing the Quality of Teaching and Learning in College of Education

As different authors indicated educational quality has no universally accepted definition .Each country's policies defined quality explicitly or implicitly according to its own economic, political, social, and cultural visions (USAID, 2006). Virtually all countries, however, include two key elements as the basis of quality: students' cognitive learning (which is what achievement tests usually measure) and their social, creative, inter-personal, and emotional development. One of the major indictors of quality education is cognitive learning that is the main explicit objective of most education systems, although there is a wide disagreement on what to measure as cognitive learning and how to measure it. The social, creative, and emotional development is rarely assessed in a significant way (Leu, 2005 and UNESCO, 2004).

In improving quality of education, many countries increasingly focus on understanding complex interactions that take place at the school, classroom, and community levels as the primary engines of quality and as a way of engaging local actors to address the frequently weak link between policy and practice (Farrell 2002). Of the factors that contribute to education quality at the local level, quality of teaching is recognized as the key, the factor without which other quality inputs are unlikely to be successful (USAID, 2006). Focusing on teachers' and principals' roles on quality is particularly important because they are the professionals primarily responsible for interpreting and implementing the constructivist, active-learning, and student-centered pedagogical approaches to improving education quality that underlie the reform policies of many countries.

As USAID identified in a research made in Ethiopia, quality education fell into three clear categories - input, process, and output factors. From the input side it depends on resources such as textbooks, desks, teaching materials, libraries, and classrooms. Teachers and community are also considered a crucial resource. The need for qualified teachers who have appropriate subject knowledge and pedagogical skills and community

involvement are an important determinant of quality education, including teachers' interactions with parents as well as the communities' financial and other contributions to schools. From the Process side quality factors relate to teachers' and students' activities and interactions in the classroom. The use of student-centered approach and employing various teaching strategies and materials to motivate students as well as continuously assessing student performance have a significant impact on the improvements of quality education. The other important factor is the output factor which focused on scoring high on exams and achieving promotion to the next grade. This includes students' behavior, attitudes, and inter-personal characteristics of active learning such as the nature and extent of students' participation and cooperation with each other and the growth of their self-confidence. How students behave in school - adhering to the rules and regulations as well as attending regularly and punctually. In this case, quality learning also involves students demonstrating and using what they have learned in practical settings in their everyday lives.

2.3.2. Quality Indicators in Higher Education Institutes

The demand for qualified and quality teachers has been continuously increasing all over the world. It is a pertinent expectation that the teacher education programs reveal/exhibit vibrancy adequate for responding to the emerging paradigms of school education and the teacher roles thereof. It is thus necessary that quality concern is explicit in every aspect of teacher education programs. This quality concern goes beyond technical accuracy and consistent effort to carry out tasks. If such concern is an integral part of the processes and practices within an institution, students will gain meaningful and holistic experience.

The QIs can be used by HEIs as a tool for self-assessment in respect of their quality positioning. The QIs will help in indicating the kinds of data to be recorded while implementing the activity. Thus, each of the QIs implicitly or explicitly is concerned with visualizing teacher development in the context of quality improvement (NAAC, 2007).

According to NAAC as the QIs help in appraising the performance quality of a practice or institution in its various aspects, they are tools for quality assessment leading to quality enhancement. Used as tools these serve two main purposes in the HEIs, namely:

1. Measure the processes and outcomes of the program for making necessary adjustments and changes for quality improvement.
2. Monitor the processes for continuous learning and ongoing improvement.

In order to attend to the growing concern of teacher quality and teacher shortage, it is crucial to examine the core of the problem that is, the type of teacher preparation and training being provided. Realizing that the quality of the teachers as long regarded is a professional responsibility rather than a policy issue. The need to evolve a framework and evaluation tool to help institutions in quality assurance and continuous improvement, the National Assessment and Accreditation Council (NAAC), India in collaboration with the Commonwealth of Learning (COL) and Canada, has initiated the process of developing Quality Indicators for Teacher Education (NAAC, 2007). According to NAAC report, the initiative has brought together teacher educators, quality assurance experts and policy makers from around eleven Commonwealth countries. Experts from Australia, Bangladesh, Botswana, India, Kenya, Mauritius, Namibia, Nigeria, Sri Lanka, Singapore and United Kingdom (U.K.), participated in the initial workshop and subsequent development process. The Expert Group was tasked with identifying and short listing the potential indicators for quality teacher education and arriving at a framework encompassing all aspects of a CTEs functioning comprehensively. The Group worked in close collaboration with the officials of NAAC and COL, who initiated the activity. A lot of discussion went on in developing the quality indicators.

The discussions and deliberations resulted in identifying six priority areas henceforth called as the “Key Areas” (KAs), which are central to the implementation of any teacher education program. Within each identified key area specified functional aspects have been detailed as Quality Aspects (QAs). These quality aspects represent and cover most of the broad functional aspects of a CTE cutting across geographic locations and

transaction modes. Each of the quality aspect is further delineated in terms of the actual tasks, which actually represent the quality of a CTE.

The QIs are generic statements made in such a way that they ensure comprehensive coverage of the most relevant domains of the quality of the teacher education institution. Most of the QIs are a combination of the 'inputs', 'process' and 'outcomes', but are largely process based.

The six broad areas of a TEI are functioning, i.e. the Key Areas are: Curriculum Design and Planning, Curriculum Transaction and Evaluation, Research, Development and Extension, Infrastructure and Learning Resources, Student Support and Progression and Organization and Management.

2.4. Curriculum Design and Planning

According to HEC (2012) in the past, the term 'curriculum' signified a course of studies followed by a pupil in a teaching institution. But nowadays, it means in general terms, the contract between society, the state and educational professionals with regard to the educational activities that learners should undergo during a certain phase of their lives to learn something desirable

Curriculum is the formal and informal content and process by which learners gain knowledge and understanding, develop skills, and alter attitudes, appreciations, and values under the auspices of an academic institution (Ronald Doll cited in HEC, 2012). From this view point, curriculum is not only the content selected and delivered, but also the planned and unplanned activities in which individuals participate as students.
A curriculum can be defined as the planned educational experiences offered by a school which can take place anywhere at any time (Khanh , 2001**).** It is the planned interaction

of pupils with instructional content, materials, resources, and processes for evaluating the attainment of educational objectives.

According to khanh it is common knowledge that curriculum of most higher education institutions are similar in that they share a common goal of graduate preparation. The variations are worked out in respect of the type of program being offered by the institution. The quality concern of the institution is thus reflected in the manner in which this operational curriculum is designed and planned.
Curriculum theory and practice has four ways of approach: Curriculum as a body of knowledge to be transmitted, Curriculum as an attempt to achieve certain ends in students' product, Curriculum as process and Curriculum as praxis.

In developing approaches to differentiation, the curriculum and the pedagogy it promotes will acknowledge that students learn in different and individual ways. Accordingly, good quality curriculum will encourage teachers to get to know their students and ensure that their teaching style and their classroom behaviors are directed towards achieving the best learning outcomes for them (Stabback and Male, 2011).

The other important terms that are commonly used in the area of education are syllabus and course which could be seen under the umbrella of curriculum. Here, the term curriculum can refer to any level of an educational experience, from that of a particular area within a course, to the course itself, to a broader program of study that comprises a number of different courses around a particular content area. It is often used to refer to a focus of study, consisting of various courses all designed to reach a particular proficiency or qualification. While syllabus refers to the content or subject matter, instructional strategies and evaluation means of an individual course (Khanh , 2001**)**

2.5. Models of Curriculum Development

Developing a curriculum is one of the essential functions within an education or training system as it constitutes the guideline for planning, conducting and assessing processes

(GIZ, 2011). The idea of curriculum development is seen as a process implying a wide range of decisions concerning learning experiences, taken by different stake holders at different levels, i.e. politicians, experts, and teachers at international, national, regional, local and institutions levels (Khanh , 2001**)**.

According to NAHE (2014) there are three important models of curriculum namely, the Tyler's model, Taba's Model and situational analysis. NAHE has described the three models as follows:

Tyler's model

Tyler's model is sometimes known as the 'Tyler rationale' or the 'objectives model' which is the most influential model in the field of curriculum development. This model provides a four-step approach which is logical, sequential and systematic.

The first step for any curriculum development is "setting an objective" which focus on the question of what educational purposes should the institution seeks to attain? The second step is "learning experiences and content" which gives more attention to the question of what educational experiences can be provided that are likely to attain these purposes? The third step is "organizing learning experiences" which stress on how can these educational experiences be effectively organized? The last step is "evaluation" which relay on the question of how can we determine whether these purposes are being attained?

Taba's Model

This model was developed by Hilda Taba. The model was based upon the curriculum development process similar to Tyler's, but introduced additional steps. Taba's model was an attempt to ensure that decisions about curriculum are made on the basis of valid criteria and not whim or fancy. She claimed that decisions should follow in the order of the seven steps. The steps are: Diagnosis of needs ; Formulation of objectives ;Selection of content ; Organization of content ; Selection of learning experiences ; Organization of

learning experiences and; Determination of what to evaluate and the ways and means of doing it. This model helps in analyzing learners' needs by considering the society and culture in which they live and only then making decisions.

Situational Analysis

The other new element rational/objective model is situational analysis which was introduced in the 1970s to Taba's diagnosis of needs. This refers to a detailed description and analysis of context in which a particular curriculum is to be implemented. This model focused on steps like situational analysis, selection of objectives, selection and organization of content, selection and organization of methods of teaching and evaluation of learning.

In a well-designed curriculum there will be alignment between courses, modules, modes of teaching, assessment and grading criteria and this is achieved by linking everything to clearly stated learning outcomes. For the link between curriculum design and module development the University of Sheffield in 2014 has stated the following.

> *In designing a curriculum, clearly structuring a module is fundamental to how effective you're teaching is and how your students will learn about your discipline. While no module is ever perfect, designing modules that clearly evidence student learning in your area and obviously fit within the overall programme is a benefit to students, colleagues and the overall efficiency of a programme* (Sheffield, 2014).

In developing a module, it is important to be aware of the various influences that shape how your curriculum is designed within the program of studies.

Generally according to University of Sheffield, in whatever model of curriculum is selected, in developing curriculum, the most important points that should be underlined are: asking yourself what you want your students to learn and what is the best way for them to learn it; planning your learning activities to achieve the learning outcomes; use a

structure that will encourage you and your students to engage in active learning with clear aims and learning outcomes showing what students will know, understand or be able to do by the end of the module ; consider the attributes of the learner and how they are reflected in your curriculum and; ensure that your means of assessment are also aligned with the learning outcomes, teaching methods and learning activities of your module, and that they are valid and reliable.

Curriculum development can be approached from three different perspectives (Smith and Keating, 2003): The first perspective is to regard it as “rational” or “linear”, i.e. it is a logical process which proceeds from objectives to the selection of learning experiences to the organization of learning material to evaluation.
The second one sees curriculum development as a “cyclical” model, where the whole learning process is a cycle which continually renews itself so that evaluation leads to the reformulation of objectives.

The third perspective implies an “interactive” model assuming that curriculum development can commence at any stage and that feedback leads to constant change at any stage. Here, the three perspectives of Smith and Keating’s seem to be directly linked with the above NAHE (2014) three models.

The two most commonly used methods for curriculum development – DACUM (develop a curriculum) and functional analysis – can be rated and described as linear models (NAHE, 2014). As Smith and Keating have explained, DACUM is a method to define systematically the tasks, jobs, competences and tools associated with a certain type of workplace which is an inductive approach, i.e. small units are defined and gradually extended to be applied in a broad context. While Functional analysis is a deductive and target oriented approach characterized by the process of disaggregating complex functions into smaller components whereas functions are the defined outcome of a realized activity without describing the specific context of the activity (Gonczi, Hager and Oliver, 1990).

2.6. Modularization

Modularization is not a new concept. It has been introduced into many domains, frequently in an intuitive, natural way, on many occasions without conscious thinking about the benefits it brings.

In fact, the process of modularizing a course offers interesting opportunities to improve instruction. A course using a modular design divides up its content into learning activities that target specific concepts relevant to that domain. It is a process of breaking a large program into modules.

Modularization is regarded as one of the methods contributing to raising the efficiency and flexibility of education and training and also for ensuring mobility of people. Modular teaching is one of the most widespread and recognized teaching learning techniques in America, Britain, Australia and other western countries. In addition, modular teaching is used in almost all subjects like natural sciences and medicine and even in social sciences as well as in computer education. All kinds of subjects are being taught through modules (Farooq, 1997).

Dhamija (1993) compared the effectiveness of the three approaches of teaching namely Conventional, Radio-vision and Modular on the achievement of students in social studies. The mean scores of students in Civics when taught through Modular approach were more than the mean scores of students when taught through Radio-vision as well as Conventional approach thereby indicating that Modular approach was more effective in teaching Civics in comparison to Radio-vision and conventional approach.

Generally Modularization Provides a Process of paying attention to important properties while ignoring nonessential details (selective ignorance) and makes complex tasks look simple. It also allows professional developers to write new programs in weeks or months, instead of year (Dhamija, 1993).

There are two ways of modular approach: one being the ‘creation’ model and the other the ‘conversion’ model. The creation model denotes the design of a new course while the conversion model is either ‘an internal (course-led) or external (faculty- or institution-led) decision to recast and develop current courses in a modular form’ (Watson, 1989).

According to Watson the creation model which focused on clustering of courses has two variations. In the first variation existing courses are grouped into clusters with separately defined graduate profile. In this method some courses are removed while others are altered, and some new courses may be added. In the second variation the existing courses are grouped by merging the contents of the courses into a new unit.

The conversion model is usually is employed while there is a need to open a new program. It begins from professional profiles and ends with modules. The steps begin from description of professional profile, description of graduate profile and translating this into knowledge, skills and attitudes and finally come to description of modules by grouping knowledge, skills and attitude into themes (Watson, 1989).

2.6.1. International Experience on Modularization

Modular approach to curriculum implementation has got a long history. The idea of modularization evolved in higher education in the United States in the second half of the nineteenth century (Theodossin, 1986).

In US, it was assumed that modularization was used for competition between institutions for Higher Education (credits can be transferred). Within this conception, since the early 1980s, a variety of national and regional reforms as well as many local variations, have contributed the introduction and development of modules (Bruijn, 1995:1).

These days, the approach has drawn special attention all over the world in education systems, from technical and vocational education and training to higher education.

Over recent years, there has been a clear trend in the development of the upper secondary curriculum to increase the use of modular or unitized qualifications. In particular, in the 1980s much interest was shown in modular courses and many such courses were developed and introduced. As a result, the rationale for modularization and many of the issues arising from it were addressed.

According to Vidal Rodeiro and Rita Nádas (2011) the drive behind some of the attempts to modularize qualifications came from teachers seeking to make the curriculum more relevant to their students and to provide increased extrinsic motivation through the setting of short-term assessment targets.

As it has been mentioned in the above paragraph, the earliest attempts to modularize occurred in the 1980s.However, by the early 1990s there were concerns about modular courses being too easy in comparison with terminally examined courses. Some of the reasons for these concerns were: modular courses had been associated with lower attaining students, candidates could retake modules to improve grades and candidates could be examined on parts of a subject rather than on the entire syllabus (Hayward and McNicholl, 2007)

Modularization in the sector of vocational education and training is more recent. For example according to Roberts(1987) observation, the introduction of a modular system in Britain for craft training by the Engineering Industry Training Board in 1968 marked the start of this approach to vocation training which was then emulated in many other industries. The extensive International Labour Organization (ILO) project on ‘modules of employable skills’ (MES) from the mid-1970s onwards, aimed at workers in developing countries, was a particularly significant initiative in relation to a modular approach to vocational education and training (ILO (1984) cited in (Cooke & Dinkelmann, 2001))

2.6.2. Advantage and Disadvantage of Modularization

No college or college system should want to change from traditional to modular methods without sound reason to believe that students would benefit from the transition. Therefore, every effort should be made to explore advantage and disadvantage of modularization.

The modular approach in education is an exciting, efficient, and effective student centered means of introducing students to a wide variety of broad concepts (Daugherty, 1996). Many experts in the field of Education have weighed in with pertinent opinions on the usefulness of abandoning traditional methods in favor of modular instruction. As MacKenzie (1998) reported, traditional instructional design is usually limited use in teaching difficult and complex concepts..

Among the various system of individualized instruction proposed so far, modular instruction is one of the newest and combines many advantage of a number of separate instructional innovations, such as performance objectives, self-pacing, and frequent feedback.

Present evidence suggests that modular instruction meets the needs of today's students more adequately than traditional instruction both with respect to the quality of learning and the content. However, certain problems may arise in implementing modular instruction. These are presented from the perspective of the student, instructor, and administrator (Barbara and Marcel, 1973).

The proponents of modular schemes have long argued for their advantages in terms of curriculum flexibility, short-term assessment goals and increasing extrinsic motivation for students. Critics of modular assessment claim that its disadvantages lead to a diminution of trust in the qualification as a whole among the general public, higher education tutors and admission staff (Hayward and McNicholl, 2007). The advantage and

disadvantage of modularization has been described by Hayward and McNicholl as follows:

Flexibility

A well-designed and constructed modular curriculum might well offer students more flexibility and variety than other, more conventional, forms of curricular organization. Flexibility in the number and timing of the modular examinations is one of the main advantages of unitized qualifications, with many positive implications (Hayward and McNicholl, 2007).

Proponents of modularization argue that students can take units at the time their teachers feel is most appropriate for them (assessment can be matched to the point of learning within the course), and that exam stress is likely to be reduced by the possibility of taking exams over a longer period of time, rather than concentrating them all into a narrow window at the end of the course. Also, the pressure of an "all or nothing" assessment is removed.

Ownership

Thomson (1988) argues that a modular curriculum helps both teachers and students to develop an ownership of the study program; teachers by contributing to the development of the innovation or its implementation in their school, and students by taking full responsibility for their own learning, through planning their own pace of studying and assessment.

Improved student-teacher relationship

As teachers and students need to negotiate short-term goals, planning and teaching methods, they will build an effective working relationship. Module choices will require staff counseling and even parental support, and these, in turn, will improve teaching and

learning styles. However, it was also reported that modules are a hindrance to the teacher-student relationship, as teachers' slack time, which could be devoted to students' needs, is taken up by a continuous preparation for assessment (Thomson,1988).

Spread of assessment vs. fragmentation of learning and over-assessment

Another advantage of the modular assessment is the spread of the assessment throughout the course, which can be seen as a motivating factor and a benefit from these types of qualifications. However, according to critics, it can lead to fragmentation of learning and over-assessment. The concern that students will learn a particular part of the course and then forget it is one of the main issues against modularization. Also, there is a danger of fragmentation of learning and a lack of coherence in the learning experience, endangering what is called 'synoptic understanding' (Hart and Howieson, 1994; Hayward and McNicholl, 2007). Thomson (1988) reported that the short time-span of the modular course leaves no opportunity for the students to achieve their full potential. Another downside of frequent assessments is the danger that assessment becomes dominant throughout the course, rather than towards the end of it. Priestley (2003) reported that the modularization led to more teaching to the test and to a 'climate of cramming', while Hodgson and Spours (2001) suggested that, with the modular assessment, teachers spend much valuable learning time preparing for examinations. This assessment load has other implications: increased workloads produce student stress leading to dropout and less opportunity for enrichment such as taking part in extra-curricular activities (Hodgson and Spours, 2001; Priestley, 2003).

Re-sit opportunities

Another aspect of modular courses that can be seen as a benefit is the ability to re-sit units. Ofsted, (1999) states that the modular system allows more students to eventually reach a higher standard than is the case with linear courses and that many candidates, in particular weaker students, benefit from being able to re-sit modules and from being tested in smaller amounts of content at one sitting.

The knowledge that a re-sit is available may also lessen students' resolve to do their best at the first attempt. Also, receiving feedback and the re-sitting modules create an opportunity for students to remedy weaknesses before its too late (Hayward and McNicholl, 2007). However, as mentioned above, receiving negative feedback and having to re-sit modules might be de-motivating for some low-achieving students.

The opportunity to re-sit modules also ties in with another advantage of the modular curriculum, that of enabling students to plan their way forward in both studying and completing a course (Hayward and McNicholl, 2007).

Focus of teaching

Proponents of modularization claim that modular curriculum gives due weight to all the elements within a curriculum and not just to those that form part of examination syllabuses. However, critics argue that in the modular course, teaching to the test time is heightened and this undermines enrichment activities or time spent on topics not in the test (Thomson, 1988). Moreover, teachers may find the constant repetition of modules tedious, and this might result in dull teaching of a very narrow range of subjects. However, proponents of modularization argue that the greater accountability of teachers and students leads to the revision of teaching strategies in the delivery of the module. This in turn, might result in teachers glamorizing their subject (Thomson, 1988).

Workload

One concern regarding the effects of modularization on teachers' workload is that implementing a modular approach requires large initial workload for teachers, as it may involve a considerable investment of time, preparation and energy. The risks may be great (Warwick, 1987). Others are concerned that teachers workload remains elevated throughout the course, as their time consuming non-teaching demand (e.g. record-keeping, paperwork and administrative work) would also rise: Some teachers have argued

that the proportion of time devoted to assessment and administration rather than teaching is proportionally greater than in a conventional curriculum (Thomson, 1988).

Shorter duration of examinations

Another advantage of modularization could be the duration of the examinations (Gray, 2001). Most modular examinations, though greater in number, are shorter in duration than the usual 2 or 3 hours, mainly because of the lesser module content. Thus, it can be argued that a higher level of concentration can be sustained throughout the examination leading to better performances and the cumulative effect over all modules may be manifest in an enhanced overall grade. Although the total number of examinations is often greater than those set for the conventional examinations, the burden is seen as lighter.

Regular feedback

Another source of strength of modular assessments is that they provide regular feedback to students. According to McClune (2001) regular feedback to pupils and teachers on performance is a perceived benefit from modularization, as this can help to identify the students' learning needs. Others argue that sitting modules soon after they have been taught exposes shortcomings and misunderstandings but at a point in the course when something can be done to correct them.

Critics of the modular assessment claim that it leads to fragmentation of learning, students entering examinations when not ready, more teaching to the test and over assessment.

Even though Mackenzie made seemingly valid points in favor of modular instruction, other experts presented thoughtful arguments against it. In an editorial, Zuga (1999) wrote that she expected the primary concern of those selling modules to be content of the curriculum, what ideas children would learn when using the modules and how those ideas

fit together to tell a coherent story about the nature, role, and purpose of education in society. Instead she found that the prime concern of the module adherents she encountered was management and control, with every child at a desk, monitored by a teacher. She lamented the loss of students' ability to take responsibility for managing their own time, materials and project work. In her opinion, modular instruction eliminated valuable interaction among students, and that the loss of that interaction resulted made creativity obsolete. Zuga came to believe that modules, which she described as isolated and impersonal, make students more like "products on an assembly line."

2.6.3. Constraints of modularization

Important strategies for planning, development, implementation, management and evaluation curriculum have to introduce for teachers. However, furnishing the teachers with essential concepts of their subject and with the skills and strategies for its design and teaching may not be enough for the successful implementation of the subject in schools (UNESCO, 1985). There is no educational systems that exist without constraints that hinder innovations. In such and related areas UNESCO have seen constraints under three levels: Within the school, within the education system and within the community. Within the school the constraints are timetable difficulties, conflict with traditional teaching approaches, lack of resources and lack of co-operation from other staff members and administrators. Within the education system, constraints are in the form of overcrowded curriculum, unsupportive examination system and financial difficulties. Within the community, problems in getting support from parents and other community members and lack of outside resources, may be regarded as constraints (UNESCO, 1985).

2.6.4. Development of Training Module

In the early 1970s, an individualized learning package or container for modular teaching was called a module a self-contained, independent unit of a planned series of learning

activities designed to help the student accomplish certain well-defined objectives (Petrina, 2007). Modules are freestanding, self-contained and comprehensive instructional packages, meaning that basically everything that the student needs is in the module. Whereas a unit is directed by the teacher and may involve the use of modules, a module provides for self-direction, or self-paced learning of a realm of content. In the late 1980s and through the 1990s, modules became immensely popular in England and Scotland in a context of "flexible learning," educators' response to flexible economics (Petrina, 2007).

Russell's (1974) definition of modules is "an instructional package dealing with a single conceptual unit of subject matter." A module, as a self-contained unit, offers variety and adaptability to the instructional process. It can be used by an individual or a small group of learner s in a variety of situations. It incorporates multimedia learning experiences so the learners can see or hear about the concept they are studying. A module may be several minutes or several hours long. According to Russell, the concept of module is described as follows:-

> *The rationale for the module concept of teaching has a sound basis in learning theory. Modules take in to account individual learning styles, are flexible to meet variable learner needs, and place maximum responsibility on the learner. Modules also provide for active participation by the learner and reinforcing the theorem that we learn by doing.*

Goldschmid and Goldschmid (1973) define a module as "a self-contained, independent unit of a planned series of learning activities designed to help the student accomplish certain well defined objectives". In this study, self-learning modules refers to self-instructional, self-explanatory, self-contained, self-directed, self-motivating and self-evaluating material to assess the achievement of the students.

The development of materials that help both trainers and trainees could be taken as an important strategy in the area of education. At the time of module development focusing

on content that can meet the needs of both in-service and pre-service professional development programs is very important (UNESCO, 2003). According to UNESCO the modules should be developed in such a way that they support a blended model of training, which includes face-to-face training and self-study.

The development of modules involves different stages like analysis, design, development, implementation and evaluation phases. As UNESCO identified, this development cycle focuses on: the stage of teacher education to be targeted, such as deciding between pre- and in-service training; identifying the needs of the trainers or learners; selecting content from different sources in the curriculum; the nature and role of the trainee-learner; choosing alternative pedagogies; language and medium; emphasizing cultural content; and establishing the desired level of integration.

In the literature it was believed that modules can be created where critical gaps exist. Here, the use of multimedia formats that ranges from print to video to computers should be taken in to account (UNESCO, 2003).

At the time of module development issues that are related to locality and involvement of stakeholder specifically teachers should be considered from the beginning to the end. For such roles UNESCO has said the following.

> *The importance of using locally-relevant examples cannot be overstated. Cases of good practice from within a national context are highly inspiring, while local databases and websites tend to engage teachers more than remote ones and have proved more motivating.*
>
> *The involvement of local master-teachers right from the planning stage of the instructional design, and during the production of the materials, is also very motivating. If teachers are involved in the production of their own materials they can easily demonstrate the value of using technology. This model of an inbuilt mechanism for capacity-building will be useful for further expanding and localizing the training systems (UNESCO, 2003, P.20)*

According to Hand et al (2000) observation, it seems that linking of modules to the world of work is crucial in helping students to realize the importance of personal development per se At the same time, implementation is critical; whatever the design of modules, if they are not backed up by rigorous processes they can fail. More over as Hand et al argued the staffs who teach on the modules need to be enthusiastic about the philosophy, aims, objectives and learning outcomes of the module.

Course team ownership appears to be important, including management support by allocating the 'right' staff and support of some staff training and development (Hand et al, 2000). Here best practice seems to develop from a dedicated team of staff, who are willing to pool their skills and ideas.

In the development of learning modules the following operational measures would clearly help both the credibility of such a module and/or the student experience (Hand et al, 2000). From the module organizers side: setting high standards and being demanding of students' performance, informing students of the culture of Higher Education including values and norms; building in some interaction of tutor and student on an individual basis; reassessment of the lecture program and its objectives; development of student understanding of the nature and requirements of work in groups and providing a course-wide view to encourage students to cross boundaries and see that module content overlaps.

From the faculty side: Delivery of the module must be assigned to core staffs that are committed to the developing learning concept. They must also 'own and understand' the norms and values of the specific degree program for which they deliver the module. This will enable them better to represent the degree program and help make the connections between modules for students; Heads of Department must demonstrate that they value the DL ideal by active support through: the allocation of appropriate staff with adequate time allowances; support for module leaders and the provision of staff development. This will send positive signals regarding the values placed on Developing Learning and help to ensure competent delivery of high quality teaching materials, which exceed the expectations of both staff and students; and wider integration of the DL objective is necessary into the rest of the

undergraduate program. Those responsible for the design and delivery of all undergraduate modules must be aware of the objectives underpinning developing learning and explicitly incorporate them into their modules. This would ensure better integration of the DL aims across a degree program and encourage the iterative practice and feedback for specific techniques.

CHAPTER THREE

THEORETICAL MODEL AND CONCEPTUAL FRAME WORK

3.1. Introduction

A conceptual frame work of a theory is a visual display of that theory- a picture or what theory says is going on with the phenomenon of the study (Maxwell, 2005). Like theory, a conceptual frame work consists of two things: concepts and their relationships.
Likewise, the intention of this chapter is to present a review of the literature on the theoretical and conceptual framework of learning theories: behaviorism, cognitive theories, and constructivism with special reference to modular instruction. It also includes model of module development such as Instructional System Design and ADDIE model.

3.2. Different Approaches to Learning using Modules

One of the significant criticisms of modular systems is that they promote a mechanistic approach to learning. For this reason there is a belief that consideration of different learning strategies is important.

The first learning strategy is Cognitive Learning. In this strategy**,** for the achievements of the goal of modularization and to ensure outcome achievement, a new method of teaching and learning, organizing content and ensuring effective education management with flexible system is very important (CTM, 2001). Organizing and sequencing learning experiences have the capacity in improving analytical thinking and cognitive skills. Here, according to the cogitative learning theory the learner is able to apply/demonstrate

the ability to analyze, apply, synthesize, and evaluate information. The provision of strategies for processing information, organization of information, application of skills, self assessment, problem solving opportunities and others can be structured according to the way the learners learn (CTM, 2001). As CTM indicates, this could be done through modularizing the course

The second learning strategy is behaviorism. According to Reigeluth (1983) explanation behaviorism has the capacity to influence teaching learning process for many years and it seems appropriate for motivating learners by securing reward, encouragement and supportive behavior.

The idea of modularization offers such periodic responses to facilitate learning through regular assessment and feedback (CTM, 2001). Here there is a belief that knowledge could be gained on the basses of previously acquired experiences and associations. As CTM indicates, for any such learning to be purposeful and directed at a specific outcome there should be built into the modules teaching and learning strategies that ensure performance, discrimination, generalization, associations, etc. From this one can easily understand that modules enable performance to be measured immediately and rewarded.

The third important strategy is constructivism. As Yule (1994) point out, constructivism gives the chance to learners to realize their full potential by solving problems by themselves. Since today's learners are equipped with some skills, knowledge and attitudes derived from the various media, life skills and prior learning, the use of constructivism strategy has a great advantage for an effective teaching learning process. Here the use of modules could afford the learner to realize their full potential by being responsible for their own learning and being in charge of the learning process (CTM, 2001).

For the use of constructivism strategy, CTM has stated that:

> *Learners will benefit greatly from this arrangement by selecting the modules they prefer and even present themselves for assessment or accreditation for credits*

already achieved. In this way we shall be moving away from the current prescriptive academic pathway to a more flexible and democratic study program (CTM, 2001)

Today in higher education, Constructive Alignment as developed by Biggs (1999) is the underlying theory influencing contemporary approaches to curriculum design. According to Biggs the focus is not on the teacher explaining or delivering the learning outcomes to the student but on the student actively being able to both comprehend and perform learning outcomes through clear structures (teaching and learning activities) and assessment designed by the teacher or lecturer.

Generally in this study it was assumed that all the above three theoretical approaches do have their own contribution in practicing modularization at all levels specifically in higher education.

3.3. Model of module development

It can be useful to view instructional material development and design can follow different models. Some of the identified modules which are underlined in an area of education are: The objective model, the process model and Instructional System Design Model.

The objectives model which focused on the premise on the idea that all learning should be defined in terms of what students should be able to do after studying the program, in terms of learning outcomes or learning objectives. According to McKimm(2007) this model follows four steps: Reach agreement on broad aims and specific objectives for the course ; Construct the course to achieve these objectives ;Define the curriculum in practice by testing capacity to achieve objectives and; Communicate the curriculum to teachers .

The Process model assumes that content and learning activities have an intrinsic value and they are not just a means of achieving learning objectives and that translating

behavioral objectives is trivializing(McKimm,2007). Stenhouse (1975) argued that in this model there were four fundamental processes of education: Training (skills acquisition); Instruction (information acquisition); Initiation (socialization and familiarization with social norms and values) and Induction (thinking and problem solving).

3.3.1. ISD Model

Among many important systematic approaches in module development and training, Instructional System Design (ISD) model is most appropriate and preferable for any program. It was believed that this approach has some common elements with others traditional systematic approaches on the following points:

- **Competency Based (Job Related):** The learners are required to master a Knowledge, Skill, or Attitude (KSA). The training focuses on the job by having the learners achieve the criteria or standards necessary for proper task performance.
- **Sequential:** Lessons are logically and sequentially integrated.
- **Tracked:** A tracking system is established that allows changes and updates to the learning materials to be performed efficiently.
- **Evaluated:** Evaluation and corrective action allows continuous improvement and maintenance of training information that reflects current status and conditions.

Instructional System Design (ISD) model has a broad scope and typically divide the instruction design process into five phases (Van Merrienboer, 1997): Analysis, Design, Development, Implementation or Delivery and Evaluation

ISD model use formative evaluations in each of the five phases and a summative evaluation at the end of the process. Moreover, it used to guide the entire process of creating the learning platform (Van Merrienboer, 1997). According to van Merrienboer assumption ISD model provides a means for sound decision making in order to determine the who, what, when, where, why, and how of a learning program.

3.3.2. ADDIE Model

ISD is sometimes referred to as *ADDIE* (Analysis, Design, Development, Implement, and Evaluate) or *SAT* (System Approach to Training). Although there are minor differences among the various ISD models, most systematic learning design models follow an approach similar to the ADDIE model:

- **Analyze** the performance environment in order to understand it and then describe the goals needed in order to correct any performance deficiencies (identify training requirements).
- **Design** a process to achieve your goals, that is — correct the performance deficiencies.
- **Develop** your initial discoveries and process into a product that will assist the learners into becoming performers (in training, this product is often called courseware).
- **Implement** by delivering the courseware to the learners.
- **Evaluate** the performers, courseware, and audit-trail throughout the four phases and in the working environment to ensure it is achieving the desired results.

ADDIE's linear design is based upon an engineering process that assumes alternative solutions to instructional problems using a systems approach to choose a solution to produce the most effective results (Allen, 2006).

The analysis phase identifies and defines the problem and proposes a solution; the design phase uses the information from the analysis phase and creates a plan or strategy that defines the information that will be used to create the instruction; the development phase produces the instruction, and all supporting media are identified; the implementation phase delivers the instruction to the learner; and the final phase, evaluation, measures and checks for the efficiency, effectiveness, value, and worth of the instruction (Taylor, 2004).

The ISD model was designed to solve human performance problems related to learning or training (U.S. Department of Defense, 1975). It was first established by Florida State University in conjunction with the Department of Defense, but can now be found in almost any type of organization (Watson, 1981). It grew out of the "systems analysis" concepts that became popular after World War II and is probably the most extensively used instructional design model in use today.

3.3.2.1. Need Analysis

A need - is a discrepancy or a difference (gap) between what there is or the current state regarding the group or situation in question and what there should be, or the desired state. A need reflects the existence of a certain issue that requires an intervention, an issue that must be dealt with (Altschuld & Witkin, 1999). Such discrepancies can be identified, analyzed and addressed at individual level, as well as at a larger, organizational level or, if we wish, at the level of certain components of the education system or even at the level of the education system as a whole.

Needs assessment follows a set of systematic procedures applied with the aim of setting up priorities and making decisions concerning improvement. Kaufman's Organizational Elements Model (OEM) focuses on three basic levels of needs or discrepancies (Kaufman, Rojas and Mayer, 1993). The first is the external or Mega level—the needs of society and the larger environment. These needs must be assessed first and concern outcomes delivered within the society in which we all live and in which we make our contributions (self-sufficiency, self-reliance, etc.). Following this, Macro level needs should be addressed—those needs relating to the nature of outputs generated by our institutions and organizations. At the Macro level, we could think of how well organizations are delivering results of benefit to the organization itself and to its partners. Such considerations are critical, for without them Mega level results could never be delivered. The Micro level deals with the results accomplished by individual performers and teams that organizations use to achieve the Macro level and, in turn, the Mega level.

At each level, the discrepancy between “what is” and “what should be” must be determined.

From a management and institutional development point of view, conducting a needs assessment at institutional level is a way to match learner needs and interests with the representative needs of the larger group we belong to.
Russell (1974) emphasizes, from a sound administrative view point, the importance of a feasibility study as the beginning step in the modular instruction process. He recommends that professionals first investigate whether this mode of instruction is feasible under local condition.

In general as Rossi et al 1998, cited in Ministry of Education and Sports Republic of Serbia (2007), a needs assessment is a systematic approach to identifying social problems, determining their extent, and accurately defining the target population to be served and the nature of their service needs.

Some of the most important elements that must be addressed before any form of modular practice within the need assessment scheme are student’s entry behavior, trainer’s readiness and knowledge on modularization, learning outcome and, competences with graduate profiles.

Regarding to specification of any prior learning experience, MOE (2012) has indicated that modular approach needs to clearly specify entry behavior expected of learners before taking the subsequent module/s. As Ali et al (2010) have noticed, it is not sufficient to merely list pre-requisite skills and it may be necessary to include a test specifically designed to check whether students have the necessary background to understand the module. If they fail in this test they should be advised on how to catch up by means of reading, solving problems or completing specified practical tasks. This is one of the requirements of learner before registering for a specific module.

In competency based training, trainers know what training or learning is to be provided and also Institutions must know the skill levels required of their student. The emphasis in competency based training is on "performing" rather than just "knowing".

Regarding this idea, Kumar and Ratnalikar (2005) suggested that of all different factors which influence the quality of education and its contribution to national development, the quality competence and character of teacher are undoubtedly the most significant.
The idea of modularization is a new concept especially for teachers who are novice. For this purpose the need of gap identification and arrangements of training in the area of teaching experience is fundamental. While in this study training needs were not explored on the side of teachers. Most teachers were expected to go through in the modular practice without any form of additional training. But the fact is different in our cases.

Learning Outcomes

Learning outcomes is a description of what the student will know and be able to do after a defined period of study, i.e. by the end of a module (The University of Sheffield, 2014). With a learning outcomes focus, one of the first steps in the process of module design is deciding at what level the teacher want his/her students to engage with subject content or skills effectively, what will they be able to do instead of what the content of module will be. Identifying intended learning outcomes at the start of the process is essential no matter the credit value or level of students; this step is undertaken before developing a module (The University of Sheffield, 2014).

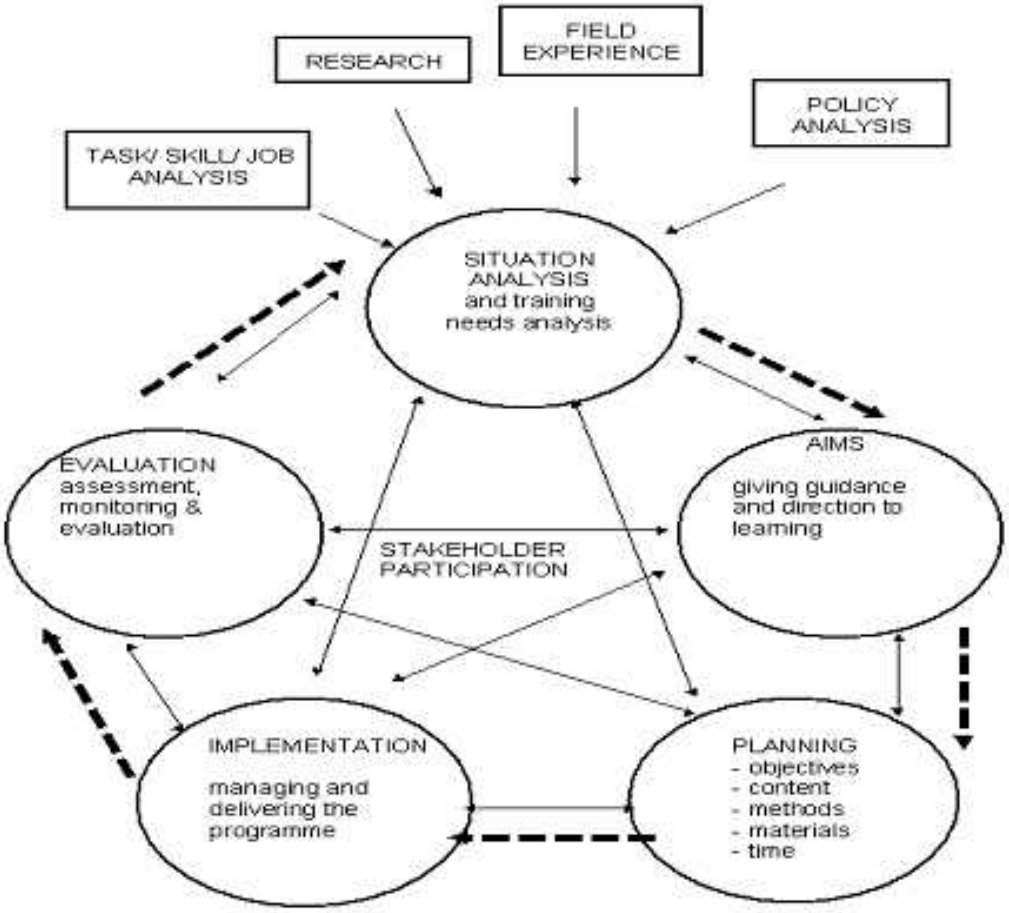
According to Betts and Smith(1998) the move towards using learning outcomes as the key descriptors of learning 'content' has, in general, been a development that has happened in parallel with the development of credit-based and modular systems. However, the learning outcomes approach has not been adopted across institutions and even within institutions the understanding and implementation of the approach has been incomplete and patchy.

Like credit, learning outcomes require subscription to the belief that students are likely to learn most effectively within a transparent system that offers explicit criteria about what they are expected to achieve. Its approach requires us to give explicit details about learning as a measurable, assessable output that the student will recognize (Betts and Smith, 1998)

In many literatures it was clearly seen that learning outcome or instructional objectives guides the entire process of education. As a result, serious attention must be given to select and identify them in such a way that the teacher is in a position to design appropriate instructional strategies to achieve them. Therefore, it is for this reason experts have given considerable attention to the criteria for the identification of these objectives or learning outcomes. Despite that there is variation in the criteria proposed by the experts, there is a general agreement that the learning outcomes or the instructional objectives should be: clear, achievable, and important.

As experts for module development, teachers need to know the broader educational context in which they work, as well as their own specific teaching context. In the case of educational objectives, aims, or intended learning outcomes, teachers need to be aware of the sources of those aims and what influences have shaped them. As suggested by The University of Sheffield, such decisions should be based upon an awareness of the requirements outlined in policy documents and the particular institution or community setting in which the curriculum implementation will occur. The following Figure shows us how an intended learning outcome relates to the other parts of the overall process.

Figure1. Intentions and Objectives in the Curriculum Development Process



Source: University of Sheffield (2012)

Competence Based Training

Education particularly professional, technical, and vocational educations are always facing the problem that knowledge acquisitions do not necessarily mean the successful application of the same knowledge (Everwijn, Bomers and knubben (1993). Similarly Miller (190) has assured that in such acquisition of knowledge there is nothing more useless than a merely well informed man.

As a result of societal development in the past decades a different view was emerged which focused on knowledge accompanied by an increased attention of competence-

based education and training. The development of knowledge is taking place in more diverse context. Gibbons (1998) speaks about two modes of knowledge production. Mode1 production refers to knowledge of the discipline –based type, typically produced in the classical universities. Mode 2 knowledge developments is the production of knowledge in the context of application, that is, it arises in the process of solving particular complex problems in collaborative trans-disciplinary teams and partnership, situated both within and outside higher education institutions.

Even though competence based education is more exercised in technical and vocational education, especially at secondary level, recently the competence-based approach been found as well in higher education.

In developing countries many higher education institutions experience a growing gap between their curricula and the demands from society, business and industry for a more flexible workforce with high skills (competencies) in problem solving, team work and project management. They have mostly kept to the traditional functions and objectives of Western Universities (Maamouri & Wagner, 2001).
However, global development in science, society and economy affects the developing countries as well and their higher education institutions are closing the gap between classical disciplinary knowledge and know-how required for the new job market.

A way to conceptualize the relation between education and the world of work is through competence –based education. Acquiring and developing competence is more than learning a set of skills. A common term describing the acquisition and development of competence is competence –based Education and Training, where training is more associated with the mastering of skills.

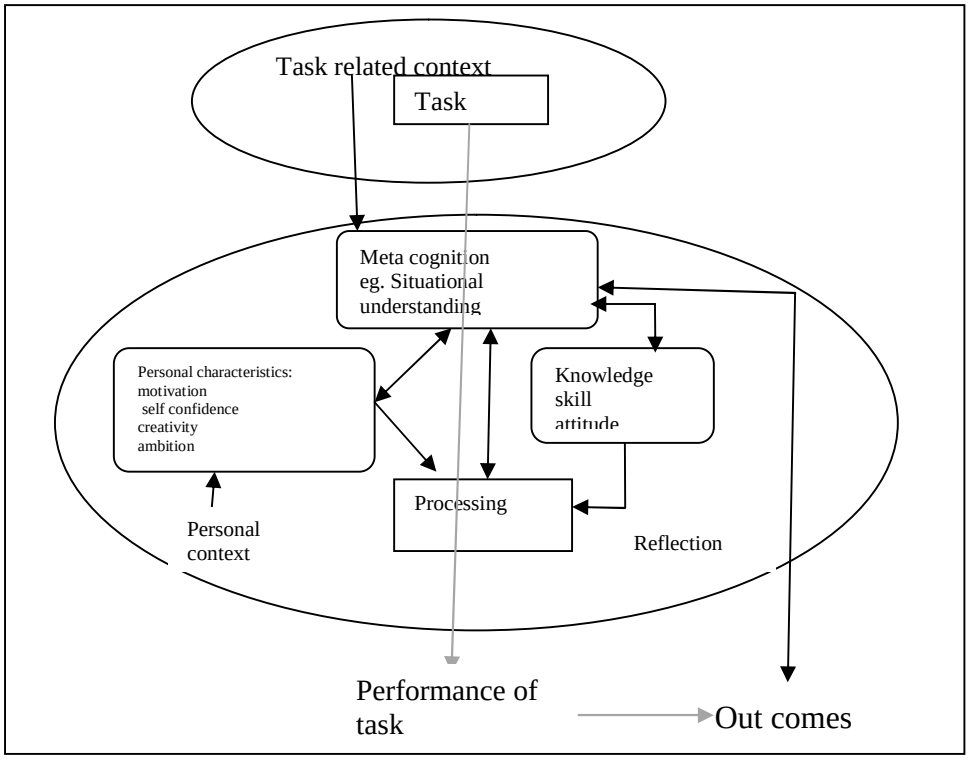
A competency is conceptualized in the model as the capability to choose and use (apply) an integrated combination of knowledge, skill and attitudes with the intension to realize a task. Competence is then defined as the capacity to realize up to standard the key conceptual tasks that characterize a profession. Competence based education aims to

make students more competent through the acquisition of competencies and the further development of the newly acquired or already held competencies. In a more elaborated way the definition of competence is defined as follow:

> Competence is t*he capability of a person or an organization to reach specific achievements. Personal competencies comprise: integrated performance oriented capabilities, which consist of the clusters of knowledge stracture and also cognitive, interactive, affective and where necessary psychomotor capabilities, and attitudes and values, which are conditional for carrying out tasks, solving problems and more generally, effectively functioning in a certain profession, organization, position or role. (Mulder, 2001:9)*

Based on the various competence definitions and dimensions of the competence concept Kouwenhoven(2003) presents a comprehensive definition of competency that can be further clarified in a model. From this model competence is deduced as the ability to process in an intentional way. A professional performs in his/ her work a large number of tasks that can be grouped in to key occupational tasks or roles.

Figure2. A model of the cognitive aspects of task performance



Source: Kouwenhoven (2003)

The realization (performance) of tasks implies intentional actions, that are consciously planned, monitored and regulated and that involve certain attributes (knowledge, skills, attitudes) and personal characteristics of the professional. Knowledge, skills, and attitudes are utilized in an integrated way, although they may be used in varying degrees, depending on the (occupational) task or a task component.

The mental processing of a task or a problem, characterized by intentional action, requires certain cognitive monitoring and regulation activities, labeled meta-cognition. (Marzano et al, 1988). In the model, presented in the above figure the task related context (where and how the task is situated) is perceived and processed by situational understanding. The personal context involves among others emotional, physical factors that directly influence the professional as a person. The personal characteristics determine to what extent these positive or negative factors will influence the processing of the task. Reflection on the outcomes provides feedback to the practitioner, leading, if necessary, to additional intentional actions.

The broad, general, concept of competence can be related to competencies through the concept of core competencies which is a set of appropriate competencies needed to realize a key occupational task at a satisfactory or superior level. Core competencies are directly linked to key occupational tasks and are integrated clusters of domain-specific and generic competencies.

Competencies are categorized in two groups. It can be domain specific that is related to clusters of knowledge, skills and attitudes within one specific content domain related to the profession. The other group of competencies is called generic because they are needed in all content domains and can be utilized in new professional situations. The name life skills are sometimes used for such type of competencies because of their transferability within and outside of the profession.

In the development of a competence based curriculum a sequence is followed involving the formulation of a professional profile with key occupational tasks, followed by

graduate profile with selected core competencies that relate directly to the professional profile. In the curriculum profile the final attainment levels of the graduate are defined in competence standards for both domain specific and generic competencies.

3.3.2.2. Designing Module

In contrast with traditional instructional arrangements the modular approach utilizes the module as a basic instructional building block instead of arranging content around, a subject, unit, or lesson. Modules are designed by systematically linking learning resources, or granules, together based on pedagogical principles defined by current learning theory (Brophy, 2000).

Designing a course using this modular approach requires a clear definition of the learning objectives for the courses, and careful organization of the instruction to optimize student learning.

Module needs to be systematically designed to facilitate learning without the constant supervision of a teacher (Hashim, 1999). In designing the module it has to help the learners to interact actively with the instructional materials rather than simply allowing them to read the materials passively (Dick and Carey, 1990). Module has to attract learner's60 attention, state instructional objectives, introduce the topic, recall previous learning, present new materials, provide examples and answers, provide practice and feedback, select appropriate media and learning strategies and give remedial and enrichment activities (Dick and Carey, 1990).

According to Heinich *et al.* (1996) there are several ways to write or design instructional modules. In the Dick and Carey model (1990), they proposed a systematic approach to designing an instructional unit or module. They identify nine steps in the design process: Identify an instructional goal, Conduct an instructional analysis, Identify entry behaviors, Write performance objectives, Develop criterion-referenced test items, an instructional strategy, Develop and/or select instructional

materials, Design and conduct the formative evaluation and instruction and finally revise instruction.

The above steps in Dick and Carey's model explain how to design the instructional product. Whereas, the design elements recommended by Heinich *et al.* (1996) suggest the main elements of module writing which do not suggest procedural steps as in the Dick and Carey model. They recommended that the following design elements are essential in designing instructional modules: Rationale, Instructional objectives, Entry test, Multimedia materials, Learning activities, Self-test and Post-test. However, these seven design elements do not include the instructional goal element that is common in any instructional design model.

According to Dick and Carey (1990), it is almost always necessary for the designer to clarify and sometimes amplify the goal in order for it to serve as a firm starting point for the instructional design process. So the instructional goal element is added in the module design elements to develop the module evaluation instrument.

Based on the above assumption Dick and Carey have summarized and set the evaluation instrument in two section namely instructional design elements and technical design elements.

In the Instructional design elements, the following eight module elements and sub elements were the most important instrument to evaluate the modules (Dick and Carey, 1990).

1. Rationale: An overview of the content and its relation with other modules, the intended user, status of the course (eg, minor, optional, prerequisite or basic), reasons for using modules and the evaluation weight required for the course. Evaluation format consists of the distribution of grade (in percentage) for assignment/course work, tests, project, final examination and so forth.

2. Instructional goal(s). The general statement of what the learner is able to do and attain at the end of the instruction.

3. Instructional objectives: Stated in performance terms, the list of specific skills and knowledge that the learner needs to master after reading or following the module. The objectives are derived from the broad goal(s) statement and they are stated at the beginning of the instructional unit. Instructional objectives should be written clearly and accurately, arranged according to learning domains and learning hierarchy using Gagne's learning categories (1992) and Bloom's learning taxonomy (1956) and should cover the whole learning units.

4. Pre-entry test: This element is also important in the design of instructional module. The pre-entry test prepares the schema and knowledge structures that the learner requires before entering the learning unit. It provides the advanced organizers in learning (Ausubel, 1968) and the entry level knowledge or skills. Many studies show that pre-knowledge influences learner's performance.

5. Multimedia materials: Preparation of multimedia materials such as slides, pictures, charts, models, text books, videos, web-based materials and training materials and equipment that can support printed modular learning. The use of varieties of media may utilize other learning senses and thus enhance learning.

6. Learning activities: The learning activities should motivate learners and encourage learner interactions with teacher, learner, and learning materials. These interactions can create continuous two-way dialogue either in real-time or simulated dialogue (Holmberg, 1977). Examples of two-way dialogue are in-text questions or exercises, use of interactive media that accompanies the module (simulated dialogue), discussions between teacher and learner and learner with learner (real-time dialogue), case studies, project work and experiment. The use of appropriate learning strategies, learning techniques and media can enhance

learning. For example, the learner may be required to do an experiment in the lab (use of demonstration techniques and co-operative learning), be an apprentice in a workplace (situated learning), do a case study (inquiry and discovery technique) or construct a new idea in a real context (constructivism). Answers and guided examples should be included to make the module a self-standing learning material. In short, the learning activities should make learning interesting, active, interactive and meaningful. The learning activities involve the process of thinking, application, problem solving, and knowledge and skills construction. These processes may be done orally, in writing or through demonstration.

7. Self-tests: The self tests are prepared to measure learner's progress in stages based on the content and learning objectives. The tests are given at the end of every learning unit or in between text to review and check learners' progress. Answers to the tests and guided examples should be included in the module. Self-test construction needs to consider the cognitive, psychomotor and affective domains and the sequence of the learning hierarchy that is beginning from lower level skills/knowledge to higher levels.

8. Post-test: The post-test is equally as important as the entry-level test. The post-test will measure the learner's performance based on the learning objectives at the end of every module. The learner may also compare his/her performance in the post-test with his/her previous performance in the entry-level test.

In the technical design elements, the following main elements and sub elements were taken as a good instrument.

1. References: A list of references needs to be included at the end of every learning unit. The style needs to be consistent, for example APA style. The in-text references (Author and year) should correspond with the references.

2. Layout: Is the text justified or unjustified? Is there enough space to write and read comfortably?

3. Format: author/subject index, glossary/terms, dedication page, preface page, figures, diagrams or appendices pages, contents page, copyright page, cover page, author and title pages

4. Lettering: The size and font type used for adult learners. Do the modules use different font sizes for titles, headings and texts? Is the font type standardized throughout? Is the spacing consistent for texts, titles and headings?

5. Graphic: do the modules have instructional graphic elements like simplicity, Position, balance, contrast, rule of the third and color?

6. Audio: Is the audio clear? Does the audio synchronies with the visuals? Is the special effect or music suitable for learning?

7. Visual: Are the visuals (static and/or motion) clear?

3.3.2.3. Competence Based Module Development

The design phase of training is like creating a blueprint for a house while the development phase is the actual hammer-and-nails construction (Swedish Civil Contingencies Agency,2012).

Developing competence based modules involves writing materials, creating learning exercises, and working with content experts and trainers. It is the most time-consuming phase of training. As we progress through this development phase, we need to make sure the training materials and exercises match the learning outcomes we identified in the

design phase, which are based on the needs assessment (Swedish Civil Contingencies Agency,2012).

According to Swedish Civil Contingencies Agency's observation, curriculum and material development usually includes: Background and descriptive information, directions on how to use the curricula, course planning forms and checklists, guidance on tailoring each particular workshop so it matches the needs or wants of participants, or fits a program's needs, specific, measurable, and realistic learning objectives, clear and complete course content and integrated evaluation plan/tools.

In developing competence based modules the idea of course sequence is fundamental. Here, the sequence in a curriculum focuses on the order in which things occur. One approach to sequence is based on the logic of the subject matter; another approach is based on the way individual process knowledge (Ornstein and Hunkins, 2009).

A good quality teaching learning material is comprised of content which is up-to-date , relevant, balanced, integrated and consistent with international norms and expectations(UNESCO,2011). According to UNESCO to ensure knowledge is up-to-date and relevant, a number of strategies have been developed, such as: curriculum cannot afford to be static; students are encouraged to acquire learning skills so that they know how to learn and how they learn best, decreasing reliance on textbooks as the only source of learning activity, content can be made relevant by using teaching and learning activities that reflect students' personal interest, and learning about cross-cutting themes and issues can be encouraged through cross-curricular projects and assignments, structured student discussion groups and by ensuring that each subject syllabus contains specific reference to these priority themes and issues.

3.3.2.4. Mode of Delivery

There are different methods of teaching in a higher education. Among the different methods of teaching the expositive methods, application methods and collaborative

methods are some of the most common and important method of teaching (FAO, 2011). According to FAO, expositive methods require learners to listen and read or observe. An instructor delivers knowledge on a given topic, which can be complemented by tests and exercises to evaluate learners' memorization and/or understanding of the content. The expositive component is normally used to provide orientation and basic concepts before going into more practical and complex stages. This method consists of: presentations, case studies, worked examples: examples of the topic with comments and explicit reference to the theory, and demonstrations (FAO, 2011).

Application methods involve the learners in practical activities which can range from simple exercises (such as the demonstration-practice method) to more complex methods like simulations or research activities. Within the application methods there are sub methods like demonstration-practice, job aids methods which provide just-in-time knowledge, case-based or scenario-based exercises that are used to develop cognitive skills in a specific domain, role play, symbolic simulations and serious games that are used to develop scientific understanding of complex systems, guided research where the learners are charged by the tutor or the instructor to conduct research on a specific subject and project work.

Collaborative methods are based on dialogue and discussion among facilitators and learners. They add a social dimension to the learning experience, applying the principles of social constructivism and collaborative learning. They allow learners to benefit from having discussion partners and getting personal feedback (FAO, 2011).

Numerous studies show that collaborative learning, as compared to working independently, results in deeper information processing and more meaningful psychological connections among the participant. For example Kaye (1992) believes that the single most important criterion for collaboration is the synthesis of information—that is, creating a new product through the combination of different perspectives, talents, and ideas, which is quite different from what each of the participants could have created on his or her own. While working together, students build new understanding by challenging

others' ideas and defending their own. When successful, this creates a product that is different from what any individual could produce alone (Ingram and Hathorn, 2004).

Group discussions are an integral part of the health and life skills classroom. They are essential for building background on specific issues, creating motivation and interest, and giving students a forum for expressing and exploring new ideas and information (Alberta Learning, 2000). It helps students learn to articulate their views and respond to opinions that differ from their own. Participating in group discussions help students consider other people's perspectives and develop effective problem solving skills (Alberta Learning, 2000).

Most of our traditional learning experience leads us to believe that we learn best by listening to instructors. Fortunately there has been considerable research into adult learning and this provides much better understandings of the factors influencing adult learning (Commonwealth of Australia, 2003).

For the two core processes of universities namely teaching and research, there are six learning outcomes that we want for our students: disseminate knowledge; develop the capability to use ideas and information; develop the student's ability to test ideas and evidence; develop the student's ability to generate ideas and evidence; facilitate the personal development of students and develop the capacity of students to plan and manage their own learning (Bourner and Flowers, 1997). According to Bourner and Flowers, each of the above lists of outcomes suggests a large range of teaching methods. Some of the most important methods were listed as follows:

Figure 3. Methods of teaching

	Learning out comes					
	Disseminate knowledge	**Develop capability to use ideas and information**	**Develop the student's ability to test ideas and evidence**	**Develop the student's ability to generate ideas and evidence**	**Facilitate the personal development of students**	**Develop the capacity of students to plan and manage their own learning**
Teaching Methods	Lectures	Projects	Seminars & tutorials	Brainstorming	Role play	Reflective diaries
	Use of exercises	Group working	Peer assessment	Problem solving	Self assessment	Work placement
	private study	Discussion and debate				
	Use of the Internet					

Students working in a modular learning system are introduced to four types of learning: active, cooperative, individualized and interdisciplinary (Silkwood, 2000). Each time you enter your classroom, you set out to teach an effective lesson. You want to present a lesson that motivates your students, provides useful and relevant practice, and helps the learners gain confidence. To do this, as Richard and Bohlke (2011) have indicated, there are eight principles for an effective lesson: lessons reflect high professional standards; lessons reflect sound principles teaching which consists of much more than a series of activities and exercises that the teacher has strung together to occupy classroom time; lessons address meaningful learning outcomes; lessons provide opportunities for learners to take part in extended practice; lesson are effectively managed and creates a positive environment for learning; lessons are coherent sequence of learning activities

that link together to form a whole; lessons create motivation to learn and provide opportunities for success; and lessons reflect your personal philosophy of teaching.

Student-Centered Approach

An important skill in teaching is the ability to make your learners the focus of your teaching. This involves understanding your learners' needs and goals, communicating trust and respect for them, acknowledging that your students have different needs and learning styles, giving feedback on their learning in ways that help develop their confidence and self-esteem and minimize loss of face, and using strategies that help develop an atmosphere of collaboration and mutual support among learners (Dornyei, 2001).

Recently, one of the most important teaching learning strategies in higher education for adult learner is student centered approach. Thinking in 'Student centered' terms should be at the heart of our educational efforts, and not because managers and politicians think it is a good idea. As lecturers, it is our responsibility to care about our students' effective learning.

> *Student Centered Learning represents both a mindset and a culture within a given higher education institution and is a learning approach which is broadly related to, and supported by, constructivist theories of learning. It is characterized by innovative methods of teaching which aim to promote learning in communication with teachers and other learners and which take students seriously as active participants in their own learning, fostering transferable skills such as problem-solving, critical thinking and reflective thinking* (Attard et.al, 2014).

In student centered learning there is an emphasis on skills and competences which demonstrate responsibility for one's own learning, independence and cooperation, problem-solving, understanding and thinking for one (Attard et.al, 2014).

Student centered learning is broadly based on constructivism as a theory of learning, which is built on the idea that learners must construct and reconstruct knowledge in order to learn effectively, with learning being most effective when, as part of an activity, the learner experiences constructing a meaningful product . It is also akin to transformative learning which contemplates a process of qualitative change in the learner as an ongoing process of transformation which focuses on enhancing and empowering the learner, developing their critical ability (Attard et al, 2014).

Stemming from developments of unprecedented reform across higher education, student-centered learning is one of the defining elements, strengthening the outcome oriented approach. This approach is highly advocated by most modular practitioners. The concept of student-centered learning from the modularization point of view has been stated as follows:

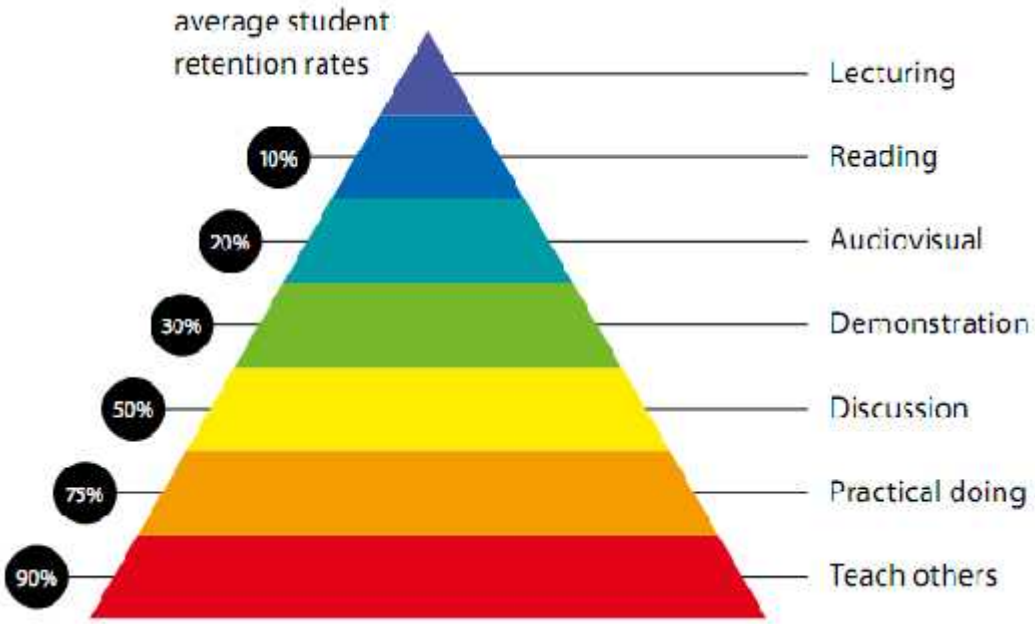
> *The use of the concept of learning outcomes and competences requires study programs and its course units or modules to be student-centered/output oriented. The key knowledge and skills as student should acquire during the learning process should determine the content of a study program (Wagenaar, 2007, p.11)*

Experienced teachers are better able than novice teachers to create learner-centered teaching because they are familiar with typical student behavior. They use their knowledge of learners to make predictions about what might happen in the classroom, build their lessons around students' difficulties, and maintain active student involvement in lessons (Lynch, 2001).

Electing to move from 'teacher-centeredness' to 'student-centeredness' implies two main shifts: a) from simply thinking about what we teach to how and why we teach something (what/how/why are the three words that should be at the top of our preoccupations when engaging with teaching/learning); b) from thinking about our performance as teachers to thinking about the learning processes the students should go through in order to learn effectively (Educational Initiative Centre,2004).

According to Education International and European Students' Union (2010) student centered learning can encourage deeper learning. As shown in the Learning Pyramid below, Knowledge retention differs depending on the way in which material is learned, but all types of active learning show a higher retention rate than traditional forms of learning. Students retain more of the information they learn where there is an aspect of active learning and active participation.

Figure 4. Learning Pyramid



Source: Education International and European Students' Union (2010)

Training that actively engages an adult in the learning process achieves significantly greater results in learner self-awareness, changed behavior, and the acquisition of new skills. Therefore, doing an assessment to ensure learners are aware of their learning is fundamental before any form of delivery.

Project-based learning

The other important Method of teaching is Project-based learning. It begins with an assignment to carry out one or more tasks that lead to the production of a final product—a design, a model, a device or a computer simulation (Prince and Felder, 2006). According to Mills and Treagust (2003) finding, relative to traditionally taught, students who participate in project-based learning are more motivated, demonstrate better communication and teamwork skills, and have a better understanding of issues of professional practice and how to apply their learning to realistic problems. Similarly, Thomas (2000) has assured that project-based learning may effectively reach students whose learning styles are poorly suited to a traditional lecture-based classroom environment.

Debate

Debate in the classroom requires active engagement by students, investing them with the responsibility to investigate, articulate and defend a particular issue (Berdine, 1987). Debate encourages class participation among those students that typically do not talk in class. For professors struggling with ill-prepared students, debate also offers an opportunity to put the responsibility back on the student but with the benefit of sharing in the reward of presentation (Dundes, 2001).

Most importantly, debate offers an opportunity for students to move beyond the acquisition of basic knowledge in a subject matter and progress into the types of higher order critical thinking skills that good debate requires by analyze, synthesize and evaluate the knowledge they have acquired in order to propose, oppose and make competing choices (Vygotsky, 1978).

Brainstorming

Brainstorming is an effective technique for generating lists of ideas, and creating interest and enthusiasm for new concepts or topics. It provides teachers and students with an

overview of what students know and/or think about a specific topic (Alberta Learning, 2002).

The information gathered during brainstorming can be used as a starting point for more complex tasks, such as essay outlines or mind maps. It can be used to introduce new units of study, assess knowledge at the beginning or end of units, review information for tests, generate topics for writing assignments or projects, solve problems or make group decisions(Alberta Learning, 2002).

Problem based learning

The implication is that students may acquire more knowledge in the short term when instruction is conventional but students taught with problem based learning retain the knowledge they acquire for a longer period of time (Dochy et al, 2001).

Having examined several meta-analyses of problem-based learning Prince (2004) concluded that the strongest positive effects of problem based learning is a robust improvement in students' skill development. According to Prince Problem based learning has the capacity in enhancing students' retention and ability to apply the required materials.

A longitudinal study of the effectiveness of problem based learning program in chemical engineering demonstrated its superiority to traditional education in the development of key process skills (Coles, 1985). Problem based learning has also been shown to promote self-directed learning and the adoption of a deep (meaning-oriented) approach to learning, as opposed to a superficial (memorization-based) approach (Coles, 1985).

Role-playing

One of the important areas of concern in an educational program of studies is helping students build communication skills, express feelings and increase awareness of how

others think and feel. In this aspect role-playing provides students with opportunities to explore and practice new communication skills in a safe, nonthreatening environment, express feelings, and take on the role of another person by walking in another's shoes (Alberta Learning,2002). According to Alberta Learning role-playing is an effective strategy for practicing new skills and exploring new ideas in the classroom. It addresses several of the multiple intelligences, and can be a motivating and memorable learning activity.

Portfolios

Portfolios are a chance for students to gather, organize and illustrate examples of their learning and accomplishments. It is the process of creating, collecting, reflecting on and selecting work samples that engages students in continuous reflection and self-assessment (Alberta Learning, 2002).

Portfolio development can be a useful strategy in education because it allows teachers to see students' thinking and it also gives students a format and motivation for completing assignments and is helpful in assessing and communicating student learning. Portfolios also allow students a measure of autonomy and self-expression that can be highly motivating (Alberta Learning, 2002).

Work placement

The purpose of work placement periods is to ensure the best possible match between training and employment as well as increased learning in genuine work environments. Education policy objectives encourage the inclusion of on-the-job learning in all education and training. In order to meet the competence development requirements of working life, cooperation with education providers and working life is imperative (EU, 2012). According to EU It is one of the ways of meeting the needs of working life involves attempting to expand and further develop practices related to on-the-job learning.

Recent studies of the relationship between work placements, in sandwich courses, and subsequent short-term employment outcomes tend to find sandwich students are advantaged in the labor market; at least in the early part of their careers (Mason et al., 2003). Employers tend to have positive views about graduates who have undertaken periods of work experience during their undergraduate program. They are perceived as having acquired many of the skills essential for success at work, including communication and interpersonal skills, in addition to acquiring attributes such as team-working, and an awareness of workplace culture (Little and Harvey, 2006)

However, although recently-reported studies of work placements continue to cite personal skills development as an important feature of placement learning, less is reported about the extent to which there is a positive transfer of learning from the placement to subsequent stages of an individual's learning through the taught (Little and Harvey, 2006).

3.3.2.5. Module Evaluation

Assessment is the process by which the University is able to confirm that a student has achieved the learning outcomes and academic standards for the module and/or award for the program for which he or she is registered (Boud and Falchikov, 2007).

Assessment is a generic term for a set of processes that measure the outcomes of students' learning, in terms of knowledge acquired, understanding developed, and skills gained. It serves many purposes. Assessment provides the means by which students are graded, passed or fail. It provides the basis for decisions on whether a student is ready to proceed, to qualify for an award or to demonstrate competence to practice. It enables students to obtain feedback on their learning and helps them improve their performance. It enables staff to evaluate the effectiveness of their teaching (Boud and Falchikov, 2007).

According to Meyer et al (2009) there are two distinct purposes of assessment: assessment of learning, and assessment for learning. Assessment of learning involves measuring what and how much students have learned, tied to specific learning outcomes which are themselves derived from the graduate profile. This kind of assessment answers the question: what exactly do students need to demonstrate that they know and can do as a result of teaching and learning? How confident is the institution that the student has mastered the graduate profile on programme completion? Assessment of learning requires attention to the validity, reliability, utility, consistency, and equity of measures, grading and marking. Assessment for learning is focused on using assessments to help students improve and move forward in their learning. This kind of assessment is equally important in giving students the information they need to guide and promote their own learning so that they can meet the intended outcomes. Assessment for learning requires that academic staff assess in a manner that will allow them to identify what kinds of improvements are needed and communicate this information to students.
From the module design perspective, UCD (20011) has identified the following 6 principles that will assist in designing learning experience.

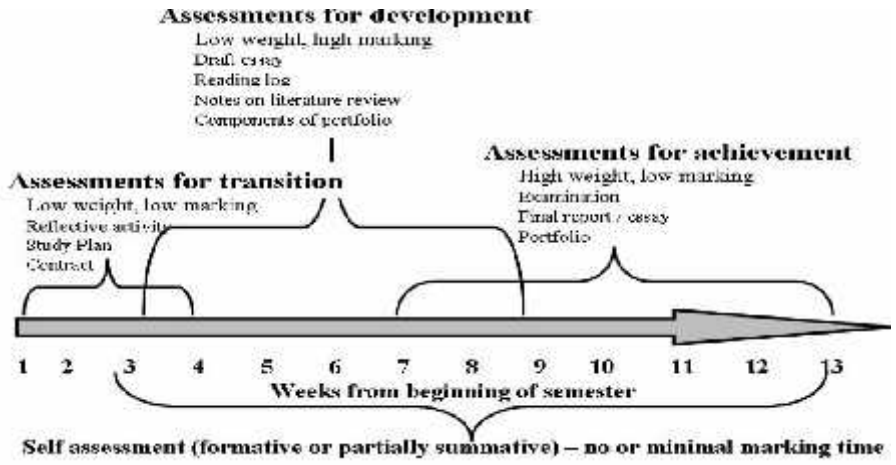
1. Allow students, where possible, have opportunity for regular, low stakes assessment with opportunity for feedback on their progress

Students especially in their first few weeks in university need regular feedback on their progress so that they can assess progress in their learning. Effective and high quality feedback is often regarded as a key element of excellence in teaching that supports student (Sadler, 1989). This is often described as formative (feedback on progress), as oppose to summative assessment (counting towards a grade). If you consider, in particular in the first semester of first year, that students should have strong emphasis on the former, then many assessment tasks can be in-class activities.

For assessment strategies to be effective students need to be given opportunities to practice doing the kinds of things that are to be assessed later. Here, technologies such as student response systems to give feedback in class can be useful. These strategies have

the added benefit of facilitating engagement. Taylor (2008), in the following figure sets out how assessment in the first semester can evolve from the idea of low stakes assessment, that emphasizes feedback to students, to high stakes which gives assessment for achievement (more summative assessment). By regular short assessments, particularly in-class or on-line, students can have multiple opportunities to have feedback on their work.

Figure5. Assessment for Transition, Development and Achievement



Source: UCD Teaching and Learning (2011)

2. Develop students' opportunities for in-class self and/or peer review of their learning against assessment criteria.

Whereas staff feedback to students is important (Design Principle 1), students have stressed that sometimes they do not understand the feedback they receive (Nicol, 2010), that the feedback is too vague or that it does not provide them with suggestions on how to improve their work. Feedback is often poorly rated by students.

While several studies have looked at the provision of feedback (quantity, quality, timing, etc.), new directions in feedback are pointing to providing opportunities for students to work with the feedback received. Thus, attention should be directed to feedback as a

process of communication between teachers and students. It should take the form of assessment dialogues in an attempt to clarify the assessment process (Carless, 2006)

Taking this one step further, Professor David Nicol states that While feedback dialogue with the teacher is important peer review is equally important where peers generate and receive feedback in relation to the same assignment task, they learn not only about their own work but also about how it compares with productions of others (Nicol, 2010). Sadler (2009) also advocates including students in the assessment process – educating them in the process of making judgments about their work in ways similar to those made by expert assessors.

Developing students active participants in the process of assessing their work can help empower them in the assessment process. Empowerment is closely linked to student engagement.

One of the key techniques associated with this approach, is to allow students opportunities, often in- class, to self or peer review their work, or examples of work, against the assessment criteria for the module. This allows them to have discussions around the expectations for the assessment of the module and is a more timely activity to allow change of behavior, than staff directed feedback given after a module is completed.

3. Allow students multiple opportunities for well-structured and supported collaborative learning and its assessment (peer and group-work, project work)

A key issue affecting students' engagement is the predominance of large classes. Cuseo (2007), in a meta-analysis of thirty years of research into the impact of class size on students concludes that `large class size is a contextual variable that has generally adverse effects on student learning, mediated primarily by lowering students' level of engagement (active involvement) with the course instructor, with classmates, and with the subject matter. Innovative assessment strategies could be used to ameliorate some of the problems associated with large classes reported in the literature. A related issue is the

difficulties incoming students report in getting to know their classmates. For example students entering UCD have concerns about the social aspects of college life; with a recent survey reporting two thirds have fears of being socially isolated in their new environment (Gibney et al 2010). Developing effective social networks is a key part of a successful transition to university life; group work and opportunities for collaborative learning can play an important role here.

Prince (2004, p223) describes collaborative learning as `any instructional method in which students work together in small groups toward a common goal', emphasizing interaction between students. Johnson, Johnson and Smith (1998), in an overview of 168 studies report strong evidence in relation to the efficacy of this approach for student learning. Collaborative learning offers clear and significant benefits in terms of engagement, improved academic achievement, and quality of interpersonal interactions, self-esteem and perception of support when compared to students working on their own. However group work, including whether it is assessed by a process product/individual or group mark, needs careful consideration.

Group work is a popular approach to student learning in higher education as: Peer learning can improve the overall quality of student learning; Group work can help develop specific generic skills sought by employers and at times can reduce the workload involved in assessing, grading and providing feedback to students (CSHE, 2010). Group work can also support the development of what UCD considers are important graduate attributes, i.e. ‘aptitude for continued, self-directed and collaborative learning’ and strong interpersonal and decision-making skills to bring to his or her individual discipline or profession (UCD, 2010). However, under less than ideal conditions, group work can become the vehicle for acrimony, conflict and freeloading (CSHE, 2010). Therefore, it is important to consider the type of assessment and how we prepare students for group work.

Many of the issues and concerns raised by students, such as equity of effort and group conflict, can be partly avoided by preparing students for group work. This can include

introducing students to the rationale for group work; exploring and getting them to set and review ground rules for group work; discussing and allocating different roles; working out procedure for dealing with group conflict as it arises, etc (CSHE, 2010).

4. Consider the redesign of the learning sequence of module learning activities in an efficient and effective manner, including the related blended learning opportunities.

In more recent module design literature, there has been a re-examination of the role and sequence of the different learning opportunities. Whereas the lecture had played the key role in the past, as students had limited access to resources, this has now changed with an increase in resources available on-line. Poor attendance at lectures in some areas has also been a source of concern for academic staff. The students are required to do a task, activity (individually or in groups, on-line or face to face meetings) and then having completed this they then receive a ‘focused expert’ lecture.

Through more careful consideration of this section, students by ‘doing’ tasks can ‘cover’ what was traditionally done in the lecture. Blended learning allows you more opportunity to monitor the ‘out of class’ leaning activities, particularly in larger groups.
Therefore, instead of starting in the module design process by filling in the usual lecture load, such as 12, 24, 36 lectures for a 12 week semester, you may consider the module as a series of in and out-of-class activities, that feed into the assessment requirements.

5. Introduce more active/task-based learning which uses more authentic assessments (i.e. subject/discipline identity)

Prince (2004) defines active learning `as any instructional method that engages students in the learning process'. For examples, carrying out a project in-class activities/exercises, engagement in wiki development, presentations, etc. More passive forms of learning, that are more teacher-led, can lead to more surface approaches to learning. In addition, to attempting to make students more active, it is apparent that in order to motivate them we

also need to make the activity relevant to what they believe could be the potential pathway for learning, i.e. their discipline/subject/program/career.
In a research made by Breen and Lindsay (2002) the significance of discipline-specific motivation is reported as being important in relation to student success. They recommend that the discipline specific values and demands are made clear early within programs of study. The paper also suggests a link between retention and clarity of discipline specific expectations.

The implication for this design principle is that a) student should be as active as possible, and b) teaching and learning activities need to use real-life examples, making important connections to the students' current lives and future careers. The assessment methods should also parallel this using a variety of authentic real-life assessments, where possible. In addition, student should have opportunity to experience a developmental and supported approach to the common assessment types of the discipline, i.e. early essay writing skills support, early exposure to case studies, support in laboratory report writing, etc.

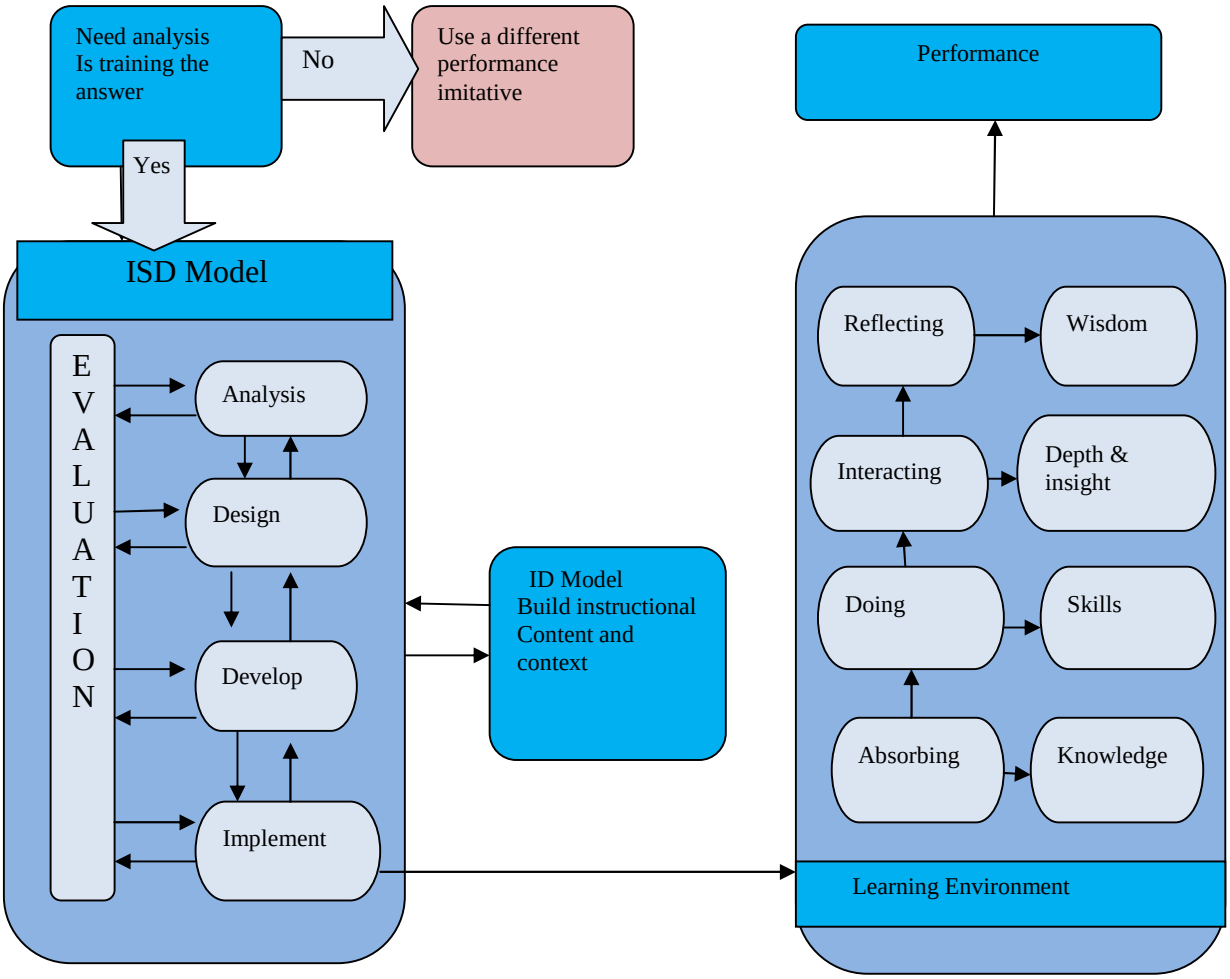
6. Consider the student work-load demands within the module, as well as in parallel modules.

Some of the issues to do with assessment workload require a school or program overview of the amount and types of assessment used, in addition, to the structure of the modules. One of the potential consequences of modularization, as far as assessment is concerned, appears to be fragmentation and over-assessment, or at least these are new possibilities. This observation points to the need to create strategies at the program level that seek to overcome these problems (Mutch, 2002). Zeegers (2001) explored the change in students' approaches to learning over time within the same cohort of science students. Findings of his study support the view that student perceptions of study tasks, time restraints, content overload, past and present teaching, and assessment procedures all have some impact on the general approach to study being adopted by the students. From a student's perspective, this can lead to him/her relying on study strategies which he/ she believes will lead to success, often driving a more surface approach to learning.

According to Prosser (2004), surface approaches to learning are generally associated with the perceptions that the workload is too high and that assessment is testing reproductive learning, whereas deep approaches to learning are associated with the perceptions that teaching is good and goals and standards are clear. Lizzio et al. (2002) also found that the perceptions of heavy workload and inappropriate assessment push students to adopt surface approaches to learning' cited in Serife (2008).

3.4. Conceptual Framework of the Study

Figure6. Instructional System Design Concept Map



Source: Clark, D. R. (2007).

From this conceptual framework one can understand that the first step in module development is a thorough analysis of an organizational need. Once the organizational need is identified and training is taken as the right answer, the next step is the identification of the appropriate model. In this study ISD was taken as the appropriate model because it is a valuable toolbox that provides proven methods for building viable training module. Within this model all the four basic steps (analysis, design, development and implementation) with evaluation in each phase should be taken in to account while the development practice is undergone.

In the implementation phase the learning environment which is the center of any type of teaching learning process must be conducive with the consideration of learning experience like absorbing, doing, interacting and reflection in conjunction with knowledge, skill, depth insight and wisdom to reach on a successful job performance.

CHAPTER FOUR

RESEARCH DESIGN AND METHODS

4.1. Introduction

In this chapter research methodological component like Design, study setting, selection of respondents, data collection instruments, method of data analysis and ethical issues were clearly described and presented in line with the purpose of the study.

The two basic approach of research that is quantitative approach and qualitative approach were clearly described and used in the study. Moreover, the three groups of methods namely, methods which are concerned with the collection of data, statistical techniques that used for establishing relationships between the data and methods which used to evaluate the accuracy of the result obtained were explained and presented with their rational in terms of the two approach of research .

4.2. Research Method

The methodological approach, which I used in this research, is a mixed method which focused on survey and case study which is a systematic approach used to describe life experiences and give them meaning. In this study I want to look at both breadth and depth, or at both causality and meaning. In such type of study, it is best to use a mixed methods design in which we use both quantitative and qualitative methods (Daniel, 2004). According to Daniel, mixed method research is a flexible approach where the research design is determined by what we want to find out rather than by any predetermined epistemological position. In mixed methods research, qualitative or quantitative components can predominate or both can have equal status.

The use of mixing quantitative and qualitative data in a single study with the inclusion of multiple methods of data and multiple forms of analysis helps a researcher to create understandable designs out of complex data and analyses (Creswell, 2003).

Quantitative research is explaining phenomena by collecting numerical data that are analyzed using mathematically based methods (in particular statistics). In quantitative research, we collect numerical data and analysis using mathematically based methods. In order to be able to use mathematically based methods our data have to be in numerical form which is not the case for qualitative research (Daniel, 2004).

In any research the use of quantitative method is particularly suited to find an answer for: The provision of information in breadth from a large number of units; the testing of theories and hypotheses and quantitative methods are better in looking at cause and effect whereas qualitative methods are more suited to looking at the meaning of particular events or circumstances (Creswell, 2003).

On the other hand information obtained using qualitative methods helps to provide meaning and understanding of the specific rather than the general, of values and of life experiences. For example, here in the study there is a need of talking with instructors and students to find out how they feel about the module development practice. To do this, you would need to use a qualitative method, such as a focus group discussion and interview methods to collect the necessary information from the informants. Therefore, the ability to use qualitative approaches in addition to quantitative methods was very important when evaluating the experience of module development.

The type of mixed method that I employed is concurrent. Such approach allows conducting a survey at one level to gather quantitative results about a sample and at the same time collect qualitative interviews to explore the phenomenon with specific individuals.

4.3. Design of the Study

The function of a research method is to ensure that the evidence obtained enables us to answer the initial question as unambiguously as possible. Obtaining relevant evidence entails specifying the type of evidence needed to answer the research question, to test a theory, to evaluate a program or to accurately describe some phenomenon. In other words, when designing methods we need to ask: given this research question (or theory), what type of evidence is needed to answer the question (or test the theory) in a convincing way?

The method, which was preferred in this study, was both survey and case study. Thus, this module development practice studies was designed to investigate issues that are related to analyzing, designing, implementing and evaluating modular curriculum with a specific focus colleges of education within The HEIs. Examining the link between the theoretical and practical aspect of modularization needs a wide range of techniques. For this reason, a quantitative survey study and qualitative case study methods were taken as the appropriate approach in collecting and analyzing the required information.

The most popular (quantitative) research method especially in the social sciences is survey research. This method is quite flexible and is characterized by the collection of data using standard questionnaire forms administered by telephone or face to face, by postal pencil-and-paper questionnaires or increasingly by using web-based and e-mail forms (Daniel, 2004).

In this study, relationship among theory and practice in module development has been scanned through the use of survey method. With the help of this method, it is possible to study a wide range of the module development practice and able to address research questions that were raised within the study. Survey methods are also efficient in terms of gathering large amounts of data at reasonably low cost and effort compared to other methods.

On the other hand, a case study was taken as an important method in collecting the appropriate information for module development practice. As a result three higher institutions within the Amhar Region that they practice modularization are taken as cases. Here, an in-depth investigation and empirical inquiry of events have been employed to explore causation in order to identify the underlying impacts within its real-life context.

As Hitchcock and Hughes (1995) indicated, a case study has the following important characteristics, which any researcher has to address in his/her study.

1. A concern, which is rich and vivid description of events with in the case.
2. A chronological nature of events within the case
3. An internal debate between the description of events and the analysis of events.
4. A focus up on particular individual actor or groups of actors and their perceptions.
5. A focus up on particular events with in the case
6. The integral involvement of the researcher in the case
7. A way of presenting the case that is able to capture the richness of the situation.

Therefore, in this research, utilization of case study has been taken as a reflection of a focus up on groups of HEI's actors and their perceptions.

4.4. Study Setting

In Ethiopia there are thirty four public Universities. Among these, seven of them are found in the Ahara National Regional State. As a result this study was conducted in Amhara region higher education institutions specifically in three colleges of educations.

The Amhara National Regional State (ANRS) is one of the nine regional states of the Federal Democratic Republic of Ethiopia (FDRE). In geographic terms, the ANRS is located between $9^{0}\ 21^{'}$ to $14^{0}\ 0^{'}$ North latitude and $36^{0}\ 20^{'}$ and $40^{0}\ 20^{'}$ East longitude. The total area of the Amhara region is estimated to be 170,752 square kilometers. The region shares borders with Tigray region in the North, Afar and Oromia regions in the East, Oromia region in the South, and Benishangul region and The Sudan Republic in the

West. The region is divided in to 11 administrative zones including Bahir Dar special administration and 116 Woredas**.**

According the Ethiopia Statistics Authority (2008) report, the region has an estimated human population of 19.8 million (26%). Within the region by now there are seven universities namely Gonder University, Bahir Dar university, Debre Markos University, Debre Birhan University, Wollo University,Woldiya andDebretabor University. Gonder University and Bahir Dar University are grouped in the first generation while Debre Markos University, Debre Birhan University and Wollo University are in the second genration. Woldiya university and Debretabor University are the newly established universities that are grouped in the third generation.

Rationale of Selecting the Study Setting

In Amhara region all Universities are practicing modularization. Each college within the universities is exercising the modular mode of delivery based on the module guide given from the Federal Ministry of Education. Though the practice is there, it seems that most trainees and instructors were not as such happy with the program. This and other related matters have pushed me to undertake research on the specified topic.

Moreover, this region has all HEI generations and also easily accessible to the researcher as compared to the other regions in Ethiopia.

4.5. Selection of Respondents

In quantitative study there is a need of taking samples from the entire population for generalizing the result. In order to be able to generalize, there should be unbiased representative samples of the population. For this reason, the probability sampling method like simple random sampling and stratified sampling technique has been employed for survey studies. In a typical simple random sample, everyone in the population has exactly the same chance of being included in the sample.

As mentioned above in Ethiopia, there are thirty four universities. Out of these figures by the use of purposive and stratified sampling techniques three colleges of education from the three universities within the Amhara Region has been selected. The main criterion for the strata was year of establishment. The organizational characteristics of the public universities were also used as a basis for selecting the sampled universities. The seven public universities within the region namely, Gonder, Bahir Dar, Debremarkos, wollo, Debrebirhan, Woldia and Debre Tabor university were categorized based on their year of establishment.

As the 2012/13 statistical abstract of Ethiopia indicates, the enrollment size of undergraduate under grade degree students across public universities within the country ranges from 157,429 to 294,357 (MOE, 2013). From this figure the seven Universities

Within the Amhara Region have the share of at about 72,764. Accordingly, one University namely, Woldia University with a total undergraduate enrolment 1746 and year of establishment 2011 is characterized as third generation. Wollo University a total enrolment of 10576 and year of establishment 2007 is categorized as second generation. Bahirdar University with a total enrolment of 16336 undergraduate students and year of establishment in 1950 is characterized as first generation.

Therefore, Woldia university from the new universities (third generation), and Wollo university from the young universities (second generation) and Bahir Dar university from old university (first generation) were selected and included the study.

After selecting issues that are related with modularization, data were gathered from 1), instructors, 2) students and, 3) written modules from the three colleges of education. Since the number of departments within each college is small, all departments were considered in the study. Once the departments were identified, twenty students from year 2 who are in the pipe line of modular training and five instructors were selected from each department using simple random simple techniques for the purpose of survey study.

The list of selected students and instructors for each section were collected from the record office of the respective colleges. The total of instructors and students that participated in survey study was 15 and 60 respectively.

Selection of informants in qualitative research is different from quantitative research. In qualitative research, the issue of representation is not the central point. Thus, sampling was not used for representativeness and generalization. Rather, selection has been made purposefully. Therefore, in order to get the right information, I contacted and discussed with different instructors and students who have a good knowledge about the issue. Thus, selection of respondents in this study has been a process of actively seeking those information- rich persons.

Hence, for the purpose of interview, the purposive sampling technique was used to five students and three instructors from each college who involved in modular training. Moreover, instructors were selected on their long time experience of consultancy and teaching in the Ethiopian higher education. Finally for the purpose of focus group discussion, three instructors from each department were selected using purposive sampling technique.

As to the selection of modules for the purpose of document analysis, among all courses five courses namely, 1) Introduction to Psychology, 2) Psychology of Childhood, 3) Psychology of Adulthood and Aging, 4) Statistical Methods in Psychology and 5) Research Methods in Psychology were selected randomly and carefully examined.

4.6. Data collection Instruments

Information that is relevant to the given program has been collected by the use of questionnaires, interviews, focus group discussion and written document.

Questionnaire

Designing a questionnaire whether it is to be administered by phone, pencil and paper or on the web is a key part of survey research (Daniel, 2004). Questionnaire is a formalized set of questions for obtaining information from respondents. Its main objective is to translate the researcher's information needs into a set of specific questions that respondents are willing and able to answer. It is the main means of collecting quantitative primary data. A questionnaire enables quantitative data to be collected in a standardized way so that the data are internally consistent and coherent for analysis. A question may be unstructured or structured.

Based on the above description, both the unstructured and structure questions which are an open ended and a scale type has been employed with a great care. In the process of construction of the questionnaire, construction of a first version of the questionnaire, validation of the questionnaire on the part of the experts (judgment by experts), pilot test and reliability and elaboration of the final version of the questionnaire has been taken into consideration. Here, once the information related with the subject of study analyzed, the objectives clearly specified and the sample carefully selected, planning and elaboration of the questionnaire has been immediately started, in order to address it to teachers and students who were participating in the development and training of the courses.

The process of elaboration of the questionnaire involved a complex procedure, the nature of the questions, the way in which they are planned and the order in which the different questions are specified. All these elements conform and directly affect the results obtained. Therefore, an attempt has been made not to leave any important element aside. Discussion with colleagues and experts has been made so as to make the questionnaire more valid.

For the formulation and disposition of the different questions in the first draft, I have followed a series of recommendations carried out by many scholars with respect to: order of difficulty, inserting easy questions at the beginning; formulating concrete questions,

avoiding ambiguity; using simple and clear language and suitable vocabulary and; asking different types of questions.

The questionnaire has been divided in according to the following sections:

1. **Back ground information** : Age, Sex, academic status, teaching experience and place of work
2. **Module Development Practice**

   A. Performance gap analysis for module development

   B. Designing of module

   C. Teaching learning strategies included in the module.

   D. Status of implementation

      - Usage of module
      - Mastery in the usage of different approach tools and resources.

   F .Evaluation status

Pilot Test

A pilot study was conducted to test the reliability and validity of the baseline questionnaire for students and teachers in one of the three universities. The validation process tries to determine if the procedure or instrument used in the research measures in fact what it is intended to measure, that is, if the information that is going to be extracted from the tool is what we really aim to obtain.

Among the different validities I decided to use the validity of contents because I considered that it is the method that could provide me with more information about the objective, that is: were the contents of the items appropriate, to which degree the items in the instrument represented a determinate thematic universe and experts judgment technique was used for testing the validity.

In order to obtain information about the correct delivery of information by means of the questionnaire, I have carried out a pretest which has been passed to 6 teachers and 20 students in Wollo University.

As far as the pretest of the questionnaire was concerned, those teachers and students were representatives for the population which would constitute object or field of work of the study, so that it has been passed to them in order to extract reliable information.

To obtain the reliability index for the questionnaire, Cronbach's coefficient alpha was employed. The alpha's reliability coefficient was used as a criterion to evaluate to which extent a test or scale is composed by sufficiently homogenous items, that is, what is verified is how much in common there is in the items.

Analysis of the pilot data indicated that the sub scales of the questionnaire have good item characteristics in terms of internal consistency and homogeneity of the items contained in each subscale. Some items are excluded based on the results of the inter-item correlation analysis.

The results show that the reliability coefficient (Cronbach Alpha) for the sub scales of the improved questionnaire for the teachers ranges from 0.57 to 0.99 and 0.52 to 0.92 for students which is considered as psychometrically sound. Which matches with the assumption of Santhi et al. (2001) that the correlation coefficient, which is greater than 0.5 are considered acceptable. Moreover, the items of the questionnaire were checked and rechecked by experts for their face validity and those items that seem vague for respondents are modified and rephrase.
After having all the changes and suggestions made, I have proceeded to the creation of the ultimate and definitive version of the questionnaire.

Interviews

As Hitchcock and Hughes (1995) have argued qualitative study collect data from in – person interviews, direct observation and written documents such as private diaries. In

qualitative study, interviewing is a major sources of data needed for understanding the phenomenon under the study. Cohen et al (2002) stated that the live form of data collection involves recording data as the interviews takes place or shortly after words. This interview was undertaken in the form of person to person encounters using semi-structured and open-ended questions, enabling respondents to address matters in their own terms and wards.

Semi structured interview has been conducted with three teacher educators and five students from each HEI in the conventional style of everyday interaction. Interview guide has been constructed to tap the perceptions of all respondents. All the interviews have been conducted in Amharic to make communication easier. All the transcribed materials were carefully translated from Amharic in to English.

Focus group discussion

A focus group is a qualitative data collection method in which one or two researchers and several participants meet as a group to discuss a given research topic. According to wellington (1996) focus group discussion is a complementary technique to collect data in qualitative studies.

Here, one researcher (the moderator) leads the discussion by asking participants to respond to open-ended questions – that is, questions that require an in-depth response rather than a single phrase or simple “yes” or “no” answer. A second researcher (the note-taker) takes detailed notes on the discussion. A principal advantage of focus groups is that they yield a large amount of information over a relatively short period of time. They are also effective for accessing a broad range of views on a specific topic, as opposed to achieving group consensus (Kotwal, 2014).

In this research focus group discussion is effective especially for capturing information about social norms and the variety of opinions or views within a population on module development practice. The richness of focus group data emerges from the group dynamic

and from the diversity of the group. Participants influence each other through their presence and their reactions to what other people say. Focus group data can also capture idiosyncratic experiences and views of individuals. Focus groups contribute to this broad understanding by providing well-grounded data on social and cultural norms, the pervasiveness of these norms within the community, and people's opinions about their own values (Kotwal, 2014).

Having all this in mind, focus group discussions have been conducted in the HEIs which comprise of six instructors. In this focus group discussion, a note has been taken from the discussion. The purpose was to get in-depth perceptions of respondents as a group. After data collection, all hand written notes have been expanded in to narratives that are more complete.

Document Analysis

Document analysis covers a wide variety of sources, including official statistics, photographs, texts and visual data. When one engaged in socio-historical analysis documentary analysis can be a useful research tool.

In this study documents such as written modules and outline of selected courses have been read and preserved so as to look whether or not the developed teaching learning materials has fit the assumption of module development.

In order to see the organization of the module in each institute, three modules have been selected randomly for the purpose of documentary analysis. At the time of document analysis, the issue of sequence, method of teaching learning processes, use of different teaching learning media, assessment techniques and the appropriateness of course objective have been examined.

Three modules out of 7 modules were selected involving 5 types of course out of 21 types of courses. All modules were selected from the major courses. Modules were evaluated using the five instructional design elements. Percentage and

frequency count and mean score were used to analyze the data. All modules are in the first draft design stage and written by the course lecturers.

A four-point rating scale was used to measure the instructional design elements. The scales used are:

1=Very weak

2=Weak

3=Strong

4=Very strong

4.7. Method of data analysis and interpretation

In this study, in order to reach on the reliable information on module development practice for college of education in enhancing quality education, both quantitative and qualitative analysis of the data have been employed.

For the data collected by the use of questionnaire information has been grouped in to different categories based on the respondent sex, qualification, experiences and number of years stayed in the institution.

To assess the relationship between the respondent opinions on the practice of module development, chi-square test was employed.

Furthermore t-test and F test have been employed to examine the mean difference among the respondents. This has been supported by the statistical package for social sciences (SPSS) computer program.

In analyzing qualitative data, there are different approaches, which are more relevant to the qualitative research. As Gall et al (1994) described, some of the most important qualitative data analysis approach are: a) interpretational analysis: a process of examining case study data in order to construct themes and patterns that can be used in describing and explaining the phenomenon being studied. b) structural analysis: is the

process of examining case study to identify patterns, texts, events or other phenomena with little internal meaning and c) reflective analysis: which is a process of examining cases where the researcher relies on intuition and judgment in order to portray or evaluate the phenomena being studied.

Following each in-depth interview, I expanded my notes into rich descriptions of what I have observed. Therefore, in this study, the interpretational and reflective analysis were selected as the most important approach in order to create the necessary categories and to reflect my personal views on the bases of the information I collected.

4.8. Ethical Issues

In any research it is not necessary to make use of deception in the form of withholding information. This will severely affect the result of the research (Johnson & Christensen, 2004). Accordingly, the research participants in this research gave their informed consent prior to seeking their responses. Here, I have tried to do this by requesting permission from each college deans through discussion.

By the help of the techniques that I used respondent agreement was obtained after being informed of the purpose of the research whether they could participate in the research or not. I have also arranged the interview and the Focus Group Discussion without affecting or with the consent of each informant and interviewee. The participants' freedom of withdrawal at any time during the process of the discussion was censured by telling them so. This enabled them not to feel pressured in participating (Johnson & Christensen, 2004).

For the sake of anonymity (since the identity of the participant should not be known) and confidentiality (the participants' identity was not revealed), I have tried to use pseudonyms of the participants in the research.

CHAPTER FIVE

DATA ANALYSIS AND INTERPRETATION

6.1. Introduction

In order to comply with the evidences that could be considered in practice of module development, this research paid attention to the external and internal conditions surrounding the institutes of higher education with a specific reference to College of Education in the selected Ethiopian HEIs. The basic assumption was that the practice of module development was not running in the right track.

In this research, factors that are related with modular instruction were explored within the specified colleges in three universities. This was done to answer the research questions posed earlier.

To answer the research questions, mixed method were employed to broadly explore the data that were obtained from the two groups of respondents namely teachers and students within the three colleges of educations. In doing so, I have also tried to investigate in detail the basic issues of module development practice from the perspectives of modularization. Accordingly, in researching the practice in the colleges, it was found necessary to see all groups of practitioners who came across the program.

Based on the information that has been obtained from the respondents the following analysis and interpretation of data was made with great care.

In some part of the analysis, the percentage of similar categories were added and interpreted accordingly (‘agree + strongly agree’ in one category and ‘disagree +strongly disagree’ in another category).

6.2. Descriptive and Inferential Statistical Analysis

6.2.1. Analysis on Needs Assessment

Needs assessment is essential tool in making sure that the programs that are offered are needed and that new interventions will meet unaddressed needs of students and other clients. Unless systematic needs assessments are conducted, precious resources are wasted (Schuh, Upcraft & Associates, 2001).

Learner characteristics and learner needs are important elements to consider in the design process because the learner's characteristics and needs will influence the design, structure, and operation of the learning systems as any action in one part of the system can influence the other parts of the system (Zheng and Smaldino, 2003). However, results of this study indicate that attention that was given to such important phase of module development practice is too low. In all of our sampled universities, gaps were not exhaustively examined either for the purpose of checking student entry behavior or teachers readiness. All teachers and students were expected to go through in the modular practice at random which does not go with the suggestion of Kumar and Ratnalikar (2005) that of all different factors which influence the quality of education and its contribution to national development, the quality competence and character of teacher are undoubtedly the most significant.

In this study as far as need assessment is concerned, staff members were asked whether critical gaps were identified or not before module developments. Here, as it has been indicated in Table1 great majority (77.8%) of respondents have said that there was no such assessment either for the purpose of filling the gap or establish priorities for future actions. Similar responses were also obtained from an interview and focused group discussion.

Although all interviewees were well aware of the importance of needs assessment before any form of modular practice, in practice nothing has been done on the identification of

gaps either in mega, macro or micro levels. Some of the interviewee's opinions on this issue are as follows:

> *I know that the use of gap analysis in identifying the major issues and priorities both at national and institutional level especially for module development; however in our case noting has been done on the identification of priorities except limited number of consultative workshop (a teacher interviewee).*
> *Identifying gaps and setting priorities is more important in considering issues that are seen in any field of studies while we are developing a new module. Contents that have not been addressed could be easily inculcated if we rely on research results. But here in our module development practice, need assessment was not done as expected either here in the university or at ministry level (a teacher interviewee).*

Regarding to entry behavior check up, as in Table 1 has been clearly indicated, though 17% of the respondent have shown that as there were some sort of check up mechanisms, almost 83 % of them have assured that as there was not any form of pre-tests for such checking entry behavior.

Within the interview it was also clearly seen that student were not seating for any form of entry test before they registered for one module. In all of the above stated universities criteria on entry behavior were not organizes so as to check learners readiness.
On such issue, the participants who involved in the interview stated that:

> *In the very beginning I was not as such aware of the need of checking learner readiness for taking my module. What I did was simply introducing the rational and objective of the module with its contents and tells them how evaluation could be done both in the middle and at the end of the lesson (a teacher interviewee).*

> *Though, the need of checking learner's entry behavior is clearly seen in the harmonized modular guide, in practice, nothing has been done in all our*

universities. No one teacher has gone through this experience. Therefore, in modular practice, students were registered without fulfilling the stated requirements (a teacher interviewee).

As to needs assessment made on teachers, as it has been seen in Table 1 almost 72% of teachers' respondent have agreed that there was not any form of need assessment made on teachers either by the institute or ministry of education. But few of them (27.8%) have replied that there was. Similarly teachers' knowledge and skills required to deliver the module was not looked as needed. Of the three sampled universities, though 16.7 % respondents were in a position of agreement, 83.3% of them have shown their disagreement on the implementation of teachers' knowledge and skills assessment before module development practice.

In order to make learning more practical and manageable, creating awareness on modular instruction is mandatory. If someone wants to implement a new program which has not been yet exercised, the existence of challenges is unquestionable. For this reason creating awareness on stakeholders is fundamental. However, in this study as great majority (83.3%) of the respondents have replied more attention was not given and as a result the practice of modularization was began in higher education with a less emphasis for the key stockholders.

At the time of interview, teachers were not only asked whether need assessment is made or not before the practice of modularization, but also about what other type of training they received. Almost all interviewees have assured that both of them were not done as expected either in the form of training or workshop.

Teachers expressed their wish to receive more training and professional readiness on how they develop and implement the idea of modularization. Participants both in an in depth interview and focused group discussion have said the following:

Before any form training, identification of needs and filling of trainer's gap were the most important steps that should be considered in any field of studies. But here in our case this was not taken as an important corner stone for our modular practice. As a result we teachers are practicing modularization intuitively (from the focused group discussion)

Awareness on any form of changes is an important instrument to break resistance among the implementers within our dynamic world. It is always true that when one thinks of a noble idea, others could stand on the opposite side. To minimize such type of confrontation within the sphere of education, the use of awareness creation forum is vital. However, in most cases our policy makers were not seen while they are practicing such type of methodology. As to my knowledge, the same thing was happening on the implementation of modularization in higher education. Stakeholders like teachers who are the main actors, students who are the main recipients, student family and other concerned bodies were not seen while they are giving their voice on such matters (a teacher interviewee)

Response obtained from all teachers within the sampled HEIs is almost similar. There is no significant mean difference among the three Universities in all replies ($p>00.5$).

Table 1. Critical gaps analysis, entry behavior check up and Training Needs for Teachers and Stakeholders

Questions	Response in%					mean				p-value
	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Sure	WOLLO	WOLDIA	BAHIR DAR	Total	
Before the development of modules critical gaps were identified	5.6	5.6	38.9	38.9	11	3.00	3.17	4.17	3.44	0.076
Pre-test have been provided in identifying students entry behavior	6	11	33	50		3.67	3.00	3.17	3.28	0.431
Any training needs for teachers have been identified	5.6	22.2	55.6	16.7		4.00	3.67	3.67	3.78	0.785
Teachers' knowledge and skills have been assessed	11.1	5.6	44.4	38.9		3.17	3.17	3.00	3.11	0.948
Awareness was created		5.6	22.2	61.1	11.1	4.00	3.67	3.67	3.78	0.687

Credits expressed in terms of learning outcomes are powerful way to recognize and quantify learning achievement from different contexts .They also provide an effective structure for relating qualifications to each other. The addition of the learning outcomes dimension has the potential to dramatically improve the effectiveness of ECTS (Adam, 2008).

When writing learning outcomes we need to decide what type of student learning will be demonstrating by each learning outcome. Domains of learning are commonly used as a guide to write learning outcomes as they encompass the various levels of learning; the

Cognitive domain involving thought processes, the Affective domain involving attitudes and values, and the Psychomotor domain involving physical skills (Bloom et al, 1956). These domains are commonly referred to as knowledge, skills and attitudes. Therefore, in writing the learning outcome the balance of all domains should be kept and expressed so as to fit the learner experience before any form of modular practice.

Here in this study, as in Table 2 has been shown, though outcomes were formulated as a starting point for modular practice, the relation between the stated out comes and graduate profiles was not done as needed. Great efforts were not made in exploring all domains vis-à-vis our graduate profiles on the bases of Bloom taxonomy.

In such aspects, most respondents (55.6%) do not agree with the formulation of learning outcomes that are appropriate to the graduate profiles. But 27.8% of respondents were positive regarding the formulation of learning outcomes.

In an interview made with instructors the following responses were recorded:-

> *It is already known that a well stated learning outcome is fundamental and mandatory for the purpose of knowing what our learners achieve. And as the same time such type of learning outcome helps us to show the type of graduates that we seek at the end of the day. However, when we come to our modular practice here in our university, all have not been done as we needed (a teacher interviewee).*

Though some attempts have been made on stating the outcome, great efforts were not excreted in exploring all domains vis-à-vis our graduate profiles (a teacher interviewee).

As to the selection of competencies in implementing modular curriculum, focusing on domain specific and generic competency is basic. In such identification, issues like professional and graduate profile and core competencies that are directly related with the prescribed profession have to get more emphasis and discussed with the stake holders. However, results from this study have shown us the necessary competencies were not looked and shared with the role players. An integrated competency which is useful for occupational task were not considered and identified.

As it has been indicated in Table 2, 94.4 % of the respondents have assured that the formulation of appropriate competencies in a developmental stage is almost none. Similar response was also obtained from the focus group discussion and in-depth interview. Almost all interviewees and focus group participants agreed on the lack of well structured professional and graduate profiles that are linked with competencies in either of the core or generic courses. In relation to the formulation of graduate profile and the required competencies, the following opinions were forwarded by two interviewees.

If we do have an interest of working closely with our learners, the first and the most important way is looking the practice of graduates in the world of work. This could give us the necessary information where and what our learners needs. Based on such type of information as an educational expert, one can easily

formulate the required competencies for the prospective graduates. But in practice this has not been done yet in our context (a teacher interviewee).

The concept of competence is new for both of us. Most teachers and students are not as such aware of the intent of competence. Therefore, the need of awareness creation more than the formulation of competence based education is unquestionable. I am sure nothing has been done here in our university as expected on such new concepts (a teacher interviewee.)

Table 2: Learning outcome and Competencies

Questions	Response in%					mean				p-value
	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Sure	WOLLO	WOLDIA	BAHIRDAR	Total	
Learning outcome were formulated as core (key) competencies	5.6	27.8	55.6	5.6	5.6	2.50	3.00	2.83	2.78	0.632
Competencies were formulated in terms of development stages with their indicators		5.6	50.0	44.4		3.50	3.33	3.33	3.39	0.835

In module development the most important step is the first one, that is general needs assessment. According to Farid et al (2014) the goal of step 1 is to focus on the module, by defining the deficits in knowledge, attitude, or skills that currently exist in practitioners and the ideal approach to teaching and learning these objectives. A well-researched step 1 impacts steps beyond the learner objectives by identifying educational methodologies, faculty development resources, potential funding resources, and opportunities for dissemination of the curriculum.

Identification and critical analysis of the problem that will be addressed by the curriculum requires substantial research to analyze what is currently being done by practitioners and educators, i.e., the current approach, and ideally what should be done by practitioners and educators to address problem. The general needs assessment is usually stated as the knowledge, attitude, and performance deficits that the curriculum will address (Farid et al, 2014). However, in this study research results have shown that weakness that has been underlined at the time of curriculum implementation was not adequately assessed by the concerned bodies based on research findings. The limitation of none modular approach was not properly seen vis-à-vis the modular scheme.

As it has been indicated in Table 3, though 16.7% of the respondents confirmed that problems that are related with the existing curriculum were clearly identified and considered for our modular practice, great majority of them (83.3%) did not agree with the prescribed response.

Moreover, the existing graduate profiles were not properly revisited and articulated in accordance to the prospected transformational changes. In this regard, almost 68% of the respondents disagreed while 16% of them were reserved. This has been well supported by both focused group discussion and an interview. Participants from the focused group discussion and interview have said the following.

> *In curriculum development the role of teachers, students, parents, government organizations, none government organizations, and other important stakeholders is vital. Without the involvement of these groups, curriculum improvement is unthinkable and the consequence of such approach is always a failure. The same is true for modular practice. As a lecturer here in the University, I have never seen the involvement of the above groups discussing such important matters. Therefore, though, the idea of modularization seems to be better as we compared with the traditional approach, the need assessment with an objective research result is binding (focused group participant).*

Laterally we know that as the traditional approach is not as such appropriate in producing a competent graduate at all level specially in tertiary education. This could be true if and only if the idea is supported by research. However, in our case as to my knowledge, in modular practice nothing has been done either in the form of research or brain storming to identify the critical issues (focus group participant).

Brainstorming problems are important prior to the development of any educational material including module development practice at tertiary level. It gives us an insight where we lack .In most cases our universities were not in a position of looking this side (a teacher interviewee).

Table 3: Problems and Professional Profile were brainstormed

Questions	Response in%					mean				p-value
	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Sure	WOLLO	WOLDIA	BAHIRDAR	Total	
Major problems of the existing curriculum were brainstormed	5.6	11.1	44.4	38.9		3.17	3.33	3.00	3.17	0.817
Professional profile of the existing programs was revisited	11.1	5.6	38.9	27.8	16.7	3.17	3.17	3.67	3.33	0.727

In all of the above response significant mean differences were not again observed among the three groups of respondents ($_{p>}0.05$).

Generally**,** as results have indicated in all areas of need assessment components, most critical gaps that must be addressed during the first phase of module development were not assessed and examined so as to make modular instruction more manageable and practical. Most significant issue that requires an intervention before the beginning of modular instruction like professional competencies, stakeholder readiness and learning

outcomes were overlooked. This is totally against to the Mega, Micro and Macro level of Kaufman, Rojas and Mayer's (1993) theoretical assumption.

6.2.2. Analysis on Design

One of the important characteristics of modularization is being flexible. The opportunity of learners to choose optional courses is high as we compared with linear or traditional approach. In a modular approach a student is allowed to withdraw from a program for some time up on completion of certain module/s and also she/he will be allowed to put in the program to take the remaining module/s and complete the program (MOE, 2012). Here, students have different options for taking various modules in the program so that they can complete the program on their own pace. Similarly HEC (1994) has argued that students can move in and out of modules which are not integral to their major disciplines but are important for their own learning requirements.

When we come to the practice of our Higher Education Institutes, the experience is totally different from that of the modular theoretical assumption. Rooms for optional courses to be chosen by learner are almost none which contradicts the philosophical outlook of HEC (1994). Here, students are obligated to follow simply modules that have been set by their department.

As it has been seen in Table 4great majority of respondents (72%) do not agree on the existence of optional courses to be chosen by learner preference. In this area similar responses were also observed both from the in-depth interview and focused group discussion. Some of them have been organized as follows:-

> *In principle we know that as students could have an opportunity in selecting optional courses that fill their gap in the world of work. However, due to different reason, we are not able to give such chance for our learners (a teacher interviewee)*

It is very difficult to implement what has been written in any guide of modular instruction. This may depend on the level of awareness that we have on modularization. As we all know most of us are not as such aware of the practice of modular scheme. That is why we did not practice fully the idea of optional mode of delivery (focus group participant).

From the modular instruction point of view module name have to be given more emphases in HEIs. Concepts that have been stated within the module should be easily accessed by its name. Names should directly or indirectly relate to the content of the modules and the identified competencies to be achieved by the respective modules (MOE, 2012).

Here in this study as in Table 4 is shown, great majority (61.1%) of the respondents were not fully satisfied with the relationship between the module name and the identified learning competencies. While 38.9% of the respondents agreed as there was a good link of module name and learning competencies within the specified teaching learning materials. In both cases significant mean difference was not observed among the three groups ($_{p>}0.05$).

Table 4: Options for Taking various Modules and Appropriateness of Module Name

Questions	Response in%					mean				p-value
	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Sure	WOLLO	WOLDIA	BAHIRDAR	Total	
students have different options for taking various modules	5.6	22.2	44.4	27.8		3.17	2.83	2.83	2.94	0.769
Relation between Module names and competencies	5.6	33.3	38.9	22.2		2.83	2.83	2.67	2.78	0.938

6.2.3. Analysis on Module Development

In modular instruction, traditional developmental courses has to be divided into discrete learning modules, focused on a particular competency, and interventions are customized according to a student's needs (Hanover Research,2013). Here, eliminating redundant contents that has been explained in other courses or that do have little information within the module is basic. In such aspect attempts that has been made in eliminating unnecessary redundancies and treating the most important contents within each course is better. Contents that were thought important within the learning domain were treated as match as possible.

As it has been seen in Table 6 almost 78% and 79% of both teachers' and students' respondents agreed on the elimination of redundancies and treatments of important contents respectively. Even though, 21.3% of the respondents were not satisfied with the prescribed opinions, great majority of the respondent (78.7%) assured that there was a good concern of content identification.

Similarly, in relation to important content treatments, almost 66.7% of respondents from both groups agreed that there were no problems with this regard. As it has been indicated in Table 6, of the whole teachers and students respondents, 77.8% and 63.2% agree respectively. On the other hand few numbers which are (33.3%) did not agree with a well treatment of contents within the module.

Although, awareness creation made on teachers before modular instruction is less, in this study, results have shown us efforts that have been made by teachers in reducing redundant contents for the purpose of integrating new concepts at the time of module development is much better. This may not be always true unless teachers are supported by an additional training.

In order to register for a course, you may need to meet certain requirements that must be completed prior to enrolling in a course. That means students must complete all requirements within one module before moving to the next module. Here the issue of prerequisite and requisite is basic in modular instruction.

The most common course requisites are prerequisites and co-requisites. Prerequisites identify the requirements which students must meet prior to enrollment in the intended course. These may include successful completion of certain courses, competency levels as measured by assessment tests, a specific number of years of work experience in a certain field, or consent of instructor (Australian Qualifications Framework, 2010). While a co-requisite is meant to identify a module or modules that are interrelated or integrated with a particular module (UCD, 2014). Student must either have taken or be taking a particular module at the same time as the module (i.e. same semester), or have achieved the required learning outcomes of that module in an approved equivalent module, in order to register to another module.

With this regard as results have shown below, the realigning of modules on the bases of requisite and prerequisite requirements was not done satisfactorily which is against to the above prescribed set of information. Here, though teachers are more aware of important contents that must be treated in a modular instruction, efforts that have been made in organizing themes in according to their sequence are not yet adequate. This calls for an additional training.

As in table 6 indicated, although 28% of respondents agreed on the alignment of the modules, almost 72% of respondents disagreed. This has been supported by other target group who are participated in an interview.

> *One of the requirements in modular practice is to look for pre-requisites and co-requisite courses. They are essential and become a good ground of vertical and horizontal integrity. Modules that have been well treated ahead could serve as a good step stone for the next. However, in our module development this was not*

taken into consideration. Most modules were developed independently (a teacher interviewee).

I am not fully aware of the idea of pre-requisites and requisites courses. But what I know is courses that you took in first semester or before can serve as a good source of knowledge for the next course. Similarly courses that you obtain at the same time should support each other. Probably this might be taken as integrity. However, in our university almost all courses seems to be stand alone without referring what has been done ahead (a student interviewee).

According to Ornstein and Hunkins (2009) integration is concerned with the linkages of information in order that student can develop a holistic overview of the subject matter. Integration of knowledge has been described by some as more than just making links within a module, but as linking to real-world themes.

The idea of integrative learning comes in many varieties. Integrative learning is mean: connecting skills and knowledge from multiple sources and experiences; applying theory to practice in various settings; utilizing diverse and even contradictory points of view; and, understanding issues and positions contextually. Knowledge integration takes time, energy, varied activities and many opportunities to make connections (Clark and Linn, 2003).

It is believed that student learn best when they are required to synthesize knowledge and skills learned in different places. However, in our universities an integration of theories with practice seems to be less which does not reflect Clark and Linn's assumption. As shown in Table 6, 94.4% of respondents from the teachers' side and 96.5% of respondents from students' side were in position of disagreement on the integration of theory and practice. This idea was supported by an in-depth interview and focus group discussion as follow:

Relating theory with practice can make the learner more effective and competent in the specified world of work. A learner can master what he /she have learnt

within the class at the time of practical sessions. It is at this time that we say there is learning. But in the case of our module development practice, attention that was given to this part is almost none. Great emphasis was given for theoretical part more than the practical attachment (from focus group discussion).

I know that in a competence based modular instruction, linking theory with practical activities is fundamental. However, the time that is given to practical session is less and as a result most of us are not as such engaged as needed. We are highly involved in the theoretical section (a teacher interviewee).
We students are highly influenced by theory based learning. As to my knowledge the material itself has not enough space for dealing the practical attachment. It is full of theories which seems to the practice of modular instruction. Thus, there is a need of balancing these two types of approach (a student interviewee).

In all cases significant mean differences were not obtained among the two groups of respondents ($_{p>}0.05$).

All in all, connecting skills and knowledge from multiple sources and experiences through integrative learning or applying theory to practice in various settings seems to be less in all studied HEIs. Emphasis that has been given to practical attachments is too weak which needs an additional effort.

Table 5: Content Organization

Questions	Respondents	Response in%					mean	p-value
		Strongly Agree	Agree	Disagree	Strongly Disagree	Not Sure		
Redundancies in the courses have been eliminated	T	11.1	66.7	22.2			2.11	
	S	21.1	57.9	21.1			2.00	
	Total	18.7	60.0	21.3				0.522
Very important content were treated well	T	27.8	50.0	22.2			1.94	
	S	12.3	50.9	35.1	1.8		2.26	
	Total	16.0	50.7	32.0	1.3			0.097
Consider realigning together requisite and prerequisite courses into one module	T	5.6	33.3	55.6	5.6		2.61	
	S	3.5	21.1	66.7	8.8		2.81	
	Total	4.0	24.0	64.0	8.0			0.271
In the module theory and practice have been well integrated	T		5.6	50.0	44.4		3.39	
	S		3.5	50.9	45.6		3.42	
	Total		4.0	50.7	45.3			0.837

In any modular instruction a series of learning activities that can be scheduled on a weekly or daily basis is mandatory. Learning activities may include self-study as well as a range of individual and collaborative activities, such as: readings, watching and self-study; individual assignments and collaborative project work; sharing reflections; asking questions; and discussions (FAO, 2011). Planning and documenting activities is essential in facilitated and instructor-led courses. Documentation will be used by teachers as a guide to implement the activities and can be shared with learners at the beginning or throughout the course (FAO, 2011).

From the above point of view, a significant limitation was observed in treating authentic activities in all studied HEIs. Modules were found with a less emphasis on various activities. Various activities that make learning easy and practical were not adequately

inculcated in all modules. This may lead to knowledge gap among learners and become incompetent in the world of work.

As stated in Table 6 almost 82.7% of respondents were not happy with inclusion of authentic activities within the modules. Responses among the two groups seems to be similar which is 73.3% of teachers' respondents and 82.5% of students' respondents were having the same replay without significant mean differences on the issue ($_{p>}$0.05). .

Student workload in ECTS consists of the time required to complete all planned learning activities such as attending lectures, seminars, independent and private study, preparation of projects and examinations etc. The workload of a module/course unit is based on the total amount of learning activities a student is expected to complete in order to achieve the foreseen learning outcomes (HESC, 2012).

In our context it was proposed that on average students are expected to work 50 hrs per week. This means that since there are 32 weeks in one academic year, students are supposed to work 32x50= 1600 hrs per year and 800 hrs in a semester. Therefore, in this case 1ECTS= 27 study hrs (32x50/60= 26.6 study hrs) where 60 is the minimum ECTS that a student is supposed to take in one year and 30 ECTS in a semester (HESC, 2012).

Most modular systems make a distinction between 'tutor contact' and 'student committed time' or 'learning time' (Theodossin, 1986). In other words it is recognized that the effort a student is expected to put into a module is usually greater than the amount of time that a tutor will have in face to face contact with that student. The total learning time may be say 100 hours, of which 100 are committed by the student and within which only 10 hours are devoted to tutor contact (Betts and Smith ,2005).

In this study, student workload in ECTS is fair and reasonable which consists of the required time to complete all planned learning activities that agree with idea of both HESC and Theodossin. As it has been indicated in Table 6, 73.4 % of the respondents agreed that there was a fair allocation of time for the specified modules. But 26.6 % of

the respondents were not happy of the allocated load. On such issue differences among the two groups were not also observed. That is 77.7% of teacher respondents and 71.9% of student respondent were in a position of positive replies. There is no significant mean difference among the two groups of respondents ($p>0.05$).

The implementation of a new module usually requires additional learning resources or at least a rethink of existing learning resources. Module developers need to think at a strategic level about the resources required and how these can be used effectively and efficiently. If teachers are trying to introduce more self directed or flexible learning either through problem based learning or other learning strategies, then close liaison needs to be carried out with library and IT staff as students will require good access to a wide range of texts, journals and web based resources (McKimm,2003). The same applies to teachers who are developing smaller parts of a course or single sessions. There are many resources which may be available to learners and helpful to think about an integral part of module.

Additional instructional support can be designed as part of the lesson or the course (FAO, 2011). According to FAO these resources may include: printable versions of the lesson content downloadable job aids (e.g. checklists, if/then tables); glossary providing key terms and related explanations; bibliography and/or links to Web resources, for learners to find out more about the topic; and pop-ups or mouse over which provide additional information on specific topics without interrupting the flow of the lesson. However, although opposing opinions were reflected in the two groups of respondents, in sum, in all of our sampled Universities, modules that were developed were not rich in various resources. Within the module one could not see an up to date and well organized resources for the purpose of making learning less difficult. This seems to be against the theoretical assumption of McKimm and FAO who give more emphasis on additional teaching learning resources.

In this study as indicated in Table 6, of the whole teacher respondents except 22.2% of them, the great majority (81.8%) have agreed that there was no significant problem in

indicting the required references within the module. On the contrary, 73.7% of student respondents have replied that there was a lack of references within their own modules. In the study opposing replies were forwarded from the two groups of respondents with a significant mean difference ($p<0.05$). This has been crosschecked by the use of interview and focus group discussion. Therefore, both groups of respondent in the interview and focus group discussion have the following opinion:

> *The need of variety of references within each module is unquestionable. In most cases students are expected to learn by themselves. For this reason in our modules the necessary references were mentioned and dispatched. However, one cannot say that all references that range from hard copy to the digital copy has been fully assessed (a teacher interviewee*).

> *Actually some hard copies were mentioned at the end of the module page. This does not mean that all the necessary references were given attention. As a student I want to look and check some educational issues with the help of different resources. Therefore, the need for all source of information within the module is basic. This has not been done yet (a student interviewee).*

> *The use of reference not only for modular instruction it also it is necessary for any mode of delivery. No one denies this fact. By now the availability of such references could not be taken as a serious problem. Thanks to Technology, everything is on board. What matters adapt yourself to this technology and manipulate as much as you can. Once you have given the title it is you who search what are needed. Therefore, as an active learner one should not expect the whole elements from a single module. It is impossible to accommodate all references within our teaching learning materials. However, here in our University you don't see many students while they are using internet due to the limited number of internet lab (Focused group participant).*

Table 6. Characteristics of Authentic Activities, Workload and Use of Reference

Questions	Respondents	Response in%					mean	p-value
		Strongly Agree	Agree	Disagree	Strongly Disagree	Not Sure		
Module is characterized by authentic activities	Teachers		16.7	72.2	11.1		2.94	
	Students		17.5	66.7	15.8		2.98	
	Total		17.3	68.0	14.7			0.807
Student workload in ECTS consists of the time required to complete all planned learning activities	Teachers	33.3	44.4	22.2			1.89	
	Students	29.8	42.1	22.8	5.3		2.04	
	Total	30.7	42.7	22.6	4.0			0.523
Important references were identified	Teachers	22.2	55.6	22.2			2.00	
	Students	7.0	19.3	54.4	19.3		2.86	
	Total	10.7	28.0	46.7	14.7			0.000

6.2.4. Analysis on Mode of Delivery

Felder and Brent (2005) stated that the goal of instruction should be to equip students with the skills associated with every learning style category, regardless of the students' personal preference, since they will need all of the skills to function effectively as professionals. Similarly, Felder and Henriques (1995) posited that the amount a student learns in a class is partially influenced by the student's native ability and prior preparation, and the student's learning characteristics' compatibility with the instructor's teaching style.

The purpose of examining the learning styles of the learner is to better understand the behavior patterns that learners exhibit so that they can be incorporated into the

instructional design and make the instruction more effective and efficient in helping learners (Baldwin & Sabry, 2003). Cranton (1994) stated that there is confusion about what constitutes a learning style, but practical literature advises educators to adopt a variety of teaching roles to meet the needs of learners with different styles.

Gardner (1993) surmised that students may exhibit one style with one type of information and exhibit a contrasting style with another. This would support the need to consider different types of instructional design to best fit the different characteristics of a learner.

> *Some students are slack and need to be encouraged; others work better when given a freer rein. Some respond best when there is some threat or fear; others are paralyzed by it. Some apply themselves to the task and over time, learn best; others learn best by concentration and focus in a single burst of energy (Butler, 1920)*

One proposed solution to the dilemma of teaching individuals within groups is the systematic use of adaptive teaching or adaptive instruction. Adaptive teaching, as defined in Corno and Snow (1986), is an attempt to address the needs of individuals in pursuit of both common and individual goals.

On the contrary, as research results have shown us in all studied HEIs, teaching methods that have been employed were not as such varied in nature so as to address the individual differences. In most cases learners' characteristics were not taken into account. Rather teaching was highly dominated by traditional lecture method. The focus is more on teacher performance than on learner engagement. Emphasis on skills and competences which demonstrate responsibility for one's own learning, independence and cooperation, problem-solving, understanding and thinking for oneself were found less.

Use of more exercise and initiating students for self study during modular instruction were found at lower levels. Efforts that have been made to become students' independent thinkers and learn to accept responsibility is not as such motivating. This is against to the

idea of Dhamija & Kanchan (2014) that learning in true sense requires individual guidance, personal attention and overall individual efforts of the learners.

Technology integration, specifically internet technology, into the classroom, to transform the teaching and learning of key content and skills has not been seen as valuable means of mode of deliveries. Students were not fully in a position of utilizing internet access in all sampled HEIs. Moreover, Project-based learning that helps students in demonstrate better communication and teamwork skills was not given more weight as compared to group work. Here, as most respondents have confirmed that the utilization of group work as a means of modular instruction in all HEIs is much better. In such aspect the possibility of students' working together to build new understanding is relatively high. This is in line with the work of (Ingram and Hathorn, 2004).

Lesson planning serves a variety of purposes. One important purpose is to help you develop your abilities to select, structure, and organize lesson content into effective support for learning (Richard and Bohlke, 2011).

Structurally, most lesson plans have five common characteristics and are no longer than a page: List of learning outcomes or learning objectives; Pre-class preparation such as list items for the lesson which are technology, handouts, saved files, videos or DVDs, etc.; Sequences of in-class activities and; Wrap up and notes (BYU–Idaho, 2009). If we come to the experience of our Universities, much emphasis was not given for the development of lesson plan. In all sampled Universities, teachers were not in a position of reflecting the above common characteristics of lesson planning. Most teachers were found without lesson plan.

Regarding to the adaptive type teaching, as in Table 7 indicated, 91% of respondents from the two groups were confirmed that less emphasis has been given for variation among the learners. Of the total teacher respondents' 61.1% were disagreed on the existence of varied method of teaching which reflects the different level of the learners. While 38.9 % of them stood in the opposite side.

Responses from the learner side are much more different from their respective teachers. Almost all learners have agreed that as the style of teaching learning process did not match the adaptive nature within the practice of modularization. Similar responses were also obtained on the consideration of learners' characteristics. In both responses although significant mean difference was observed among the two group of respondents ($p<0.05$), in sum both of them agreed with the problem.

In terms of student centered learning, trends in the sampled Universities seem to be less. Teachers are highly attached with the traditional approach that is with teacher centered approach. As it has been indicated in Table 7, though 50% of respondents from the teacher side have agreed on the implementation of student centered learning, great majority (98.2%) of the learner did not agree with their teacher's response saying that classroom teaching is highly dominated by teacher centered. There is a significant mean difference among the two groups of respondents ($p<0.05$). But interview that has been made on the two groups of respondents have strengthen students' stand:

> *It is obvious that in a class students are expected to run their learning by themselves. As a result we teachers give an opportunity for the student to work on either in group or in a form of project work. Some time individual work and assignment are included with a less emphasis on field work due to time constraints. In fact, if we measure the weight of student centered and teacher centered approach, teacher centered may outweigh than student centered. This does not mean that we are totally out of student centered approach (a teacher interviewee).*

> *I always enjoyed lecturing. Within this short period of time it is not easy to cover the whole module unless you use the lecture method. I know that in a modular instruction the role of the student is much more than the role of the teacher. But we do not have time to do so (a teacher interviewee).*

In all my classes, teachers are always uses lecture method rather than giving a chance for us to say in between. They are always running against time. They totally ignore learning by doing (a student interviewee).

I have never seen a teacher who is fully exercising an active learning in a class. In my assumption teaching in higher education seems to be highly attached with lecture method which is opposite to student centered (a student interviewee).

Planning a lesson before teaching is generally considered essential in order to teach an effective lesson, although the nature of the planning and the kinds of information included in lesson plans can vary greatly. Experienced teachers generally make use of less detailed lesson plans than novice teachers and often teach from a mental plan rather than a detailed written lesson plans (Richards 1998).

If we look once again the experience of our Universities, much emphasis was not given for this important section of learning strategy. As it has been shown in Table 7, almost 72% of respondents from the teacher's side and 96% of respondents from the student's side disagree. Here, the level of disagreement among the two groups is varied ($p<0.05$). That is students more disagree than teachers.

Table 7. Learner's Characteristics and lesson planning

Questions	Respondents	Response in%					mean	p-value
		Strongly Agree	Agree	Disagree	Strongly Disagree	Not Sure		
Teaching methods used were varied in nature so as to address the individual differences	T		38.9	44.4	16.7		2.78	
	S			68.4	31.6		3.32	
	Total		9.3	62.7	28.0			0.000
The method of teaching and learning that was employed has taken into account the characteristics of the learners	T		38.9	61.1			2.61	
	S		12.3	71.9	15.8		3.04	
	Total		18.7	69.3	12.0			0.004
Students have been encouraged to take responsibility for their own learning	T	5.6	44.4	50.0			2.44	
	S		1.8	49.1	49.1		3.47	
	Total	1.3	12.0	49.3	37.3			0.000
lessons have been carefully planned	T		27.8	55.6	16.7		2.89	
	S		1.8	59.6	36.8	1.8	3.39	
	Total		8.0	58.7	32.0	1.3		0.003

In this study, to look once again the mode of delivery in terms of student's knowledge and capabilities in use of information and generating ideas with the skill of facilitating personal development of the learner, some questions were developed and checked.

As results have shown in table 8, for the purpose of disseminating knowledge, lecture method has taken the major share among the other methods. Here, 77.3% of the respondent from the two groups said that this method of teaching is high when we compared from the others. But few of them which are 22.7% agreed that its utilization is medium. In this response significant difference was not observed among the two groups ($p>0.05$).

In using exercise, different responses were given by the two groups of respondents. In such area, of the teachers' respondents, 38.9% were agreed that as the use of exercise is high but 61. 1% of them have said that it is medium. On the contrary, except 12.3% who have said medium, great majority (63.2%) of student respondents have replied that the use of exercise as a method of teaching is low. While, 24.6% of them have agreed that as the utilization of this type of method is poor.

As it has been discussed in the literature part, one of the most important strategies of modular instruction is giving more opportunity for learners to study by themselves. But trends in our studied Universities seem to be different. Almost 79% of the two groups of respondents agreed that self study was not as such appreciated. While 20% and 1.3 % of two groups said focus on self study is medium and high respectively. Though similarities among the two group of respondents is observed, there is a significant mean difference ($p<0.05$) within the group on the overall perception.

While the call for technology integration into the classroom is clear, the application of technology within the realm of social studies has traditionally been theoretically underdeveloped. However, recently White (1999) has advocated the use of a constructivist theoretical perspective to under gird the use of technology in the social studies classroom. On the contrary, in the sampled Universities match emphasis was not given for such important way of technological utility. Almost all respondents from the two groups have agreed that the use of internet is either less or poor. In their response significant mean difference was not also observed among the two groups of respondents ($p<0.05$).

Table 8. Disseminate knowledge

Questions	Respondents	Response in%				mean	p-value
		high	**medium**	**low and**	**poor**		
Lectures	Teachers	72.2	27.8			1.28	
	students	78.9	21.1			1.21	
	Total	77.3	22.7				0.559
Use of exercises	T	38.9	61.1			1.61	
	S		12.3	63.2	24.6	3.12	
	Total	9.3	24.0	48.0	18.7		0.000
Private study	T	5.6	38.9	44.4	11.1	2.61	
	S		14.0	56.1	29.8	3.16	
	Total	1.3	20.0	53.3	25.3		0.004
Use of the Internet	T		11.1	50.0	38.9	3.28	
	S		5.3	52.6	42.1	3.33	
	Total			60.0	33.3		0.733

In the study, regarding to project based learning, teachers and students were replied in a different way. In such types of teaching method, teachers were agreed that as there is no significant problem in implementing the strategy (77.8%). In their response 55.6% said that their utilization is medium where as 22.2% of them replied that as it was high. On the contrary, great majority of student respondents (80.3%) did not agree with the practice of project based learning. Here, the mean value of responses among the two groups was significant ($_{p<}0.05$).

However, responses gathered from the depth interview and focused group discussion have confirmed that project based learning was not done as needed. In this regard the following suggestions were forwarded:

> *There are projects that were designed for a group of students as a means of support for students. But in number they are few and did not have the tendency of capacitating slow learners. Large class and time constraints were the two*

significant constraints pointed out in addressing the whole issue (a teacher interviewee).

We know that project work is the most important strategy of teaching and learning process within the implementation of modular instruction. If a student is fully exposed to such practical way of learning strategy, the possibility of subject matter mastery could be high as we compared with traditional lecture method. However, because of multiple constraints within our educational system, nothing has been done as expected (focused group participant).

As to my knowledge working with project is fundamental and helpful especially for slow learners. Teachers have to consider such type of strategy in their lesson especially while they are practicing modularization. It should not be a one time job. But trends here in our University are different. Once they gave a project for a certain group they never come back again to look our progress and even lot of project work were not seen at regular bases (a student interviewee).

As to the use of group work as a method of teaching and learning process, significant problems were not observed in all studied Universities. As it has been indicated in Table 9, except 24% of the respondents who have said the use of group work is less, great majority of them (74.7%) have agreed with the utilization of such learning strategy. In their response differences among the two groups was not also observed ($_{p>}0.05$).

Debate in the classroom requires active engagement by students, investing them with the responsibility to investigate, articulate and defend a particular issue (Berdine, 1987). Debate encourages class participation among those students that typically do not talk in class. For professors struggling with ill-prepared students, debate also offers an opportunity to put the responsibility back on the student but with the benefit of sharing in the reward of presentation (Dundes, 2001).

Most importantly, debate offers an opportunity for students to move beyond the acquisition of basic knowledge in a subject matter and progress into the types of higher order critical thinking skills that good debate requires by analyze, synthesize and evaluate the knowledge they have acquired in order to propose, oppose and make competing choices (Vygotsky, 1978).

In a traditional classroom setting, a large percentage of what students are taught occurs via the lecture format. However, with debates, students must go beyond the passive nature of the lecture format to the dynamic nature of debating. Whereas, the lecture format allows students to receive and respond to instruction, debates require students to actively engage in the multidimensional teaching and learning of a topic area (Omelicheva and Avdeyeva, 2008).

However, in this study results have shown us use of debating as one strategy in modular instruction is less. As indicated in Table 9, almost 99% of the two groups have shown their disagreement on the implementation of debating by saying its utilization is either low or poor. Moreover, significant mean differences among the two group of respondents was not also observed ($_{p>}0.05$)

Table 9. Develop Capability to Use ideas and Information

Questions	Respondents	Response in%				mean	p-value
		high	medium	low and	poor		
Projects	Teachers	22.2	55.6	22.2		2.00	
	students		19.3	59.6	21.1	3.02	
	Total	5.3	28.0	50.7	16.0		0.000
Group working	T	33.3	55.6	5.6	5.6	1.83	
	S	26.3	43.9	29.8		2.04	
	Total	28.0	46.7	24.0	1.3		0.331
Discussion and debate	T		5.6	61.1	33.3	3.28	
	S			49.1	50.9	3.51	
	Total		1.3%	52.0	46.7		0.106

The other important teaching learning strategy in a modular instruction is the use of seminar. The word 'seminar' is normally used to describe a group discussion lead formally or informally by the tutor, focusing on issues arising from subject matter (McKimm, 2007). According to McKimm seminars can provide a valuable intellectually stimulating forum for discussion when they are well managed and they provide an opportunity for students/trainees to ask questions about things they have covered in lectures which they did not understand. They provide also an opportunity for teachers to probe whether students have understood their teaching.

But as results in this study have assured, most teachers did not use this strategy as a means of intellectual stimulating forum in their modular practice. Students were not given a chance to share their experience either through seminar or consultative workshops. This seems to be against the description of McKimm's valuable intellectually stimulating forum.

As has been indicated in table 10 almost 95% of the respondent from the two groups, stood against the utilization of seminar in their lessons. Here significant mean difference was not observed among the two groups of respondents ($_{p>}0.05$).

Table 10. Develop the Student's Abilities to Test Ideas and Evidence

Questions	Respondents	Response in%				mean	p-value
		high	**medium**	**low and**	**poor**		
Seminars and tutorials	Teachers		11.1	44.4	44.4	3.33	
	students		3.5	64.9	31.6	3.28	
	Total		5.3	60.0	34.7		0.733

Brainstorming is an effective technique for generating lists of ideas, and creating interest and enthusiasm for new concepts or topics. It provides teachers and students with an

overview of what students know and/or think about a specific topic (Alberta Learning, 2002).

The information gathered during brainstorming can be used as a starting point for more complex tasks, such as essay outlines or mind maps. It can be used to introduce new units of study, assess knowledge at the beginning or end of units, review information for tests, generate topics for writing assignments or projects, solve problems or make group decisions (Alberta Learning, 2002).

However, as results have indicated in this study, though teachers were in the position of agreement in the utilization of brain storming as a means of instructional strategies in their lessons, most students did not agreed with this opinion. Students are complying with the less emphasis of such type of teaching learning strategies. Teachers were not fully exercised brain storming techniques at regular basis so as to share learners' experiences.

As indicated in Table 11, almost 94% teachers respondent have replied that the use of brain storming as a technique of idea generation is either high or medium. While 57% of respondents from the student side have agreed on the opposite side by saying it is either low or poor.

Different replies obtained from the two groups of respondents were crosschecked by the use of an in-depth interview. Here, in all of the studied Universities, the use of brain storming as a means of generating lists of ideas and creating interest for new concepts or topics was found weak. On such issue interviewees from the two groups have said the following:

> *Brain storming as a method of teaching has been implemented in all my classes. With the help of this method different novel ideas were collected and shared within the class. I enjoyed very much with such type of approach. But its frequency is less as compared with the other methods (a teacher interviewee).*

The method of brain storming can be implemented either in group or individually. I always exercise both approach to know where they are my students. It is easy and manageable to apply in the teaching learning process especially for modular instruction. However, due to time constraints and large class size most of us did not exercise regularly (a teacher interviewee).

In fact most teachers were in a position of using this method of teaching at the time of their introductory part and push us to say something within in our group work. But as to my knowledge this does not mean that teachers did use such method at regular basis (a student interviewee).

It is at the time of group work we usually exercise brain storming for the purpose of idea generation. However, in most cases teachers are highly attached with lecture method rather than giving more emphasis for such type of techniques (a student interviewee).

The other important method of teaching in modular instruction is problem based learning. The implication is that students may acquire more knowledge in the short term when instruction is conventional but students taught with problem based learning retain the knowledge they acquire for a longer period of time (Dochy et al, 2001).

After examined several meta-analyses of problem-based learning Prince (2004) concluded that the strongest positive effects of problem based learning is a robust improvement in students' skill development. According to Prince Problem based learning has the capacity in enhancing students' retention and ability to apply the required materials.

A longitudinal study of the effectiveness of problem based learning program in chemical engineering demonstrated its superiority to traditional education in the development of key process skills (Coles, 1985).Problem based learning has also been shown to promote

self-directed learning and the adoption of a deep (meaning-oriented) approach to learning, as opposed to a superficial (memorization-based) approach (Coles, 1985). But results here in this study has assured that problem based learning was not taken as an alternative of means modular instruction. Here, student were not seen while they are involving in different educational challenges so as to bring a solutions based on the above prescribed problem based learning techniques. This is completely against the longitudinal research result of Coles. In this area, the need of awareness creation on teachers is fundamental.

In this regard, as indicated in Table 11, 46.7 % and 33.3% of the two groups of respondents have said that the use of problem solving method in their university is low and poor respectively. But few of them which are 18.7% opposite perception saying it is medium. In the result significant mean difference among the two groups was not observed ($p>0.05$).

Table 11. Develop the Student's Ability to Generate Ideas and Evidences

Questions	Respondents	Response in%				mean	p-value
		high	medium	low and	poor		
Brainstorming	Teachers	50.0	44.4	5.6		1.56	
	students		26.3	50.9	22.8	2.96	
	Total	12.0	30.7	40.0	17.3		0.000
Problem solving	T	5.6	11.1	61.1	22.2	3.00	
	S		21.1	42.1	36.8	3.16	
	Total	1.3	18.7	46.7	33.3		0.442

One of the important areas of concern in an educational program of studies is helping students in building communication skills, express feelings and increase awareness of how others think and feel. In this aspect role-playing provides students with opportunities to explore and practice new communication skills in a safe, nonthreatening environment, express feelings, and take on the role of another person by walking in

another's shoes (Alberta Learning,2002).According to Alberta Learning role-playing is an effective strategy for practicing new skills and exploring new ideas in the classroom. It addresses several of the multiple intelligences, and can be a motivating and memorable learning activity.

In such type of teaching learning strategy our Universities seems to be reluctant. In all sampled Universities, students were not as such motivated in applying role play while they are taking their courses for the purpose of capturing new communication skills. Such types of selective de-emphasis does not notice what Alberta Learning says "role-playing provides students with opportunities to explore and practice new communication skills in a safe, nonthreatening environment, express feelings, and take on the role of another person by walking in another's shoes"

In such aspect, almost 99% were agreed by replying the use of role play method in modular instruction is either low or poor. Here, as in Table 12 has been shown from the teachers' respondents 61.1% and 33.3% has said low and poor respectively. Similarly from the students' side 56.1% and 43.9% of them were agreed with the above replies.

Teaching students how to assess themselves contributes to more accurate evaluation techniques and to higher student achievement. It is a powerful technique for self-improvement. According to Ross and Bruce (2005), provision of a self-assessment tool contributed to teacher growth by: 1) influencing the teacher's definition of excellence in teaching and increasing his ability to recognize mastery experiences; 2) helping the teacher select improvement goals by providing him with clear standards of teaching, opportunities to find gaps between desired and actual practices, and a menu of options for action; 3) facilitating communication with the teacher's peer and, 4) increasing the influence of external change agents on teacher practice. The study argues that providing a self-assessment tool is a constructive strategy for improving the effectiveness of in-service provided it is bundled with other professional growth strategies: peer coaching, observation by external change agents and, focused input on teaching strategies. However, this strategy as a means of teacher growth or self improvement in modular

instruction was not considered as needed in all studied Universities. As results in Table 12 has indicated almost 95% of the two groups did not agree with the implementation of self assessment techniques.

In the result 72.2 % of respondents from the teachers side confirmed that the use of self assessment in modular instruction is low while 11.1 % of them have said that it was poor. Likewise 57.9 % of respondents from the student side were agreed with the use of such technique is low but 40.4% have said that it is poor. Although, significant mean differences within these two categories were observed ($p<0.05$)among the two groups, both of them stood in one direction. That is both of them were agreed that emphasis given to self assessment is less.

Table 12. Facilitate the Personal Development of Students

Questions	Respondents	Response in%				mean	p-value
		high	medium	low and	poor		
Role play	Teachers		5.6	61.1	33.3	3.28	
	students				56.1	3.44	
	Total			1.3	57.3		0.255
Self-assessment	T			16.7	72.2	2.94	
	S			1.8	57.9	3.39	
	Total			5.3	61.3		0.003

Portfolios are a chance for students to gather, organize and illustrate examples of their learning and accomplishments. It is the process of creating, collecting, reflecting on and selecting work samples that engages students in continuous reflection and self-assessment (Alberta Learning,2002).

Portfolio development can be a useful strategy in education because it allows teachers to see students' thinking and it also gives students a format and motivation for completing assignments and is helpful in assessing and communicating student learning. Portfolios

also allow students a measure of autonomy and self-expression that can be highly motivating (Alberta Learning, 2002). However as results have indicated in this study, trends of using portfolio in all studied Universities seem to be weak.

As shown in Table 13, 66.7% and 33.3% of respondents have replied that the use of portfolio method in modular instruction is low and poor respectively. Similar responses were also obtained from students with 57.9% saying low and 42.2 % saying poor. In the two groups response, significant mean difference was not also observed within the study area ($_{p>}0.05$).

The purpose of work placement periods is to ensure the best possible match between training and employment as well as increased learning in genuine work environments. Education policy objectives encourage the inclusion of on-the-job learning in all education and training. In order to meet the competence development requirements of working life, cooperation with education providers and working life is imperative (EU, 2012). According to EU It is one of the ways of meeting the needs of working life involves attempting to expand and further develop practices related to on-the-job learning.

Recent studies of the relationship between work placements, in sandwich courses, and subsequent short-term employment outcomes tend to find sandwich students getting advantaged in the labor market; at least in the early part of their careers (Mason et al., 2003). Employers tend to have positive views about graduates who have undertaken periods of work experience during their undergraduate program. They are perceived as having acquired many of the skills essential for success at work, including communication and interpersonal skills, in addition to acquiring attributes such as team-working, and an awareness of workplace culture (Little and Harvey, 2006).

However, although recently-reported studies of work placements continue to cite personal skills development as an important feature of placement learning, less is reported about the extent to which there is a positive transfer of learning from the

placement to subsequent stages of an individual's learning through the taught (Little and Harvey, 2006).

Similarly in our studied Universities, emphasis that has been given for work placement seems to be less and as a result the link between theory and practice was not done as expected. As in Table 13 has been indicated all respondents from the two groups were in a position of disagreement in using such type of strategies as a means of modular instruction. Of the teachers' respondents 66.7% and 33.3% were given their response by saying low and poor respectively. Likewise, 63.2% and 36.8% of student respondent have replied low and poor respectively. In both cases significant mean differences was not observed among the two groups of respondents ($_{p>}0.05$).

Table 13. Develop the Capacity of Students to Plan and Manage their Own Learning

6.2.5. Analysis on Assessment Practice

Questions	Respondents	Response in%				mean	p-value
		high	**medium**	**low and**	**poor**		
Use of reflective diaries (port folio)	Teachers			66.7	33.3	3.33	
	students			57.9	42.1	3.42	
	Total			60.0	40.0		0.514
Work placement	T			66.7	33.3	3.33	
	S			63.2	36.8	3.37	
	Total			64.0	36.0		0.795

In order to collect information about the knowledge, attitude, or skills of the learner or group of learners, the role of assessment is not less. When carried out as an on-going process, assessment is known as continuous assessment.

Continuous assessment is a formative evaluation procedure concerned with finding out, in a systematic manner, the over-all gains that a student has made in terms of knowledge, attitudes and skills after a given set of learning experience (Ogunnyi, 1984). The results obtained from continuous assessment can be used to identify the students' weak areas so that teachers can give them special support in those areas.

However, despite the central role of continuous assessment in enhancing the teaching learning process, as Kellaghan and Greany (2003) further suggested, there is evidence that the quality of those practices may be deficient in many ways.

The type of assessment that has been made in our sampled Universities is not much different from the above suggestion. In a modular instruction most teachers were not used continuous assessment either for the purpose of measuring what and how much students have learned or for giving students the information they need and promote their own learning. In this case, the types of assessments that have been seen in all sampled HEIs did not adequately reflect the two distinct purposes namely assessment of learning and assessment for learning.

As in Table 14 indicated, in all cases, as far as continuous assessment concerned, both teachers and students had different positions. Although 38.9% of teachers mentioned that the use of continuous assessment is going in a right truck, great majority of them (60.1%) did not agreed with the prescribed opinion. Similarly except 3.5% of students' respondent, almost (97%) them were shown their disagreement.

In appropriately measuring students skills teachers and students were having different perceptions. In such area, except 27.8% of teachers who have said assessment made on students is not appropriate, great majority (72.2%) replied in the opposite direction saying

that it was appropriate. On the contrary 92.9% of student respondents confirm that assessment techniques that have been made at the time of modular instruction were not in a position of measuring their skills. However, 77.3% of the two groups of respondents said that assessments made on students were not appropriate in terms of measuring students' skill.

If learners' progress is not checked at key stages throughout the assignment, individuals may and often do lack focus in pursuing the learning objectives and become confused about the outcomes (Learning and Skills Development Agency, 2005). Therefore, the need of timely assessment is basic in modular instruction. However, research result in this study has indicated that teachers were lacking in assessing students in accordance to their pace. This also assured that continuous assessment was not exerted at regular basis.

In this regard, though teachers and students do have significant mean differences ($p<0.05$) on the extent of timely assessment techniques, in sum, both groups of respondents disagreed (85.3%) on assessment techniques made in line with learners pace. Here, teachers who have said assessment was not made with the expected time line with the students pace are 55.6% while students who agreed with this idea are 94.8%.

In terms of evaluation at the end of the module, significant mean difference was not as such observed from the two groups of respondents. Here, as shown in Table 14, except 14.7 % of the two groups of respondents, almost 85.3% of them agreed as evaluation have been done at the end of each module.

Modular assessment strategies are usually adopted where ever individualized competence based training and education is implemented. As the Tripartite Alliance (2014) have mentioned, competency-based education requires competency-based assessment. Learning and assessment should be founded on clear, effective and measurable competencies for the purpose of planning and implementation of lifelong learning to enhance performance, improve quality of care and enhance the effectiveness an educational system systems. However, focusing exclusively on such quality measures

alone has been insufficient as such measures are not currently available for all conditions, and in some conditions are based on conflicting or contradictory guideline (Alliance,2014)

Likewise in all our sampled Universities, the implementation of competence based assessment is found at lower level. Even modules were not prepared in line with the necessary competencies. This makes teaching more of theoretical which does not reflect the practical aspect that would answer the real problems of the society.

As indicated in table 14, almost 87% of the respondents from the two groups of respondents were agreed with the idea of the Tripartite Alliance. Here, teachers were not seen while they are assessing their students in practical demonstration. As shown on Table 14, except 38.9% of teacher's respondents, majority of them (61.1%) were not agreed with assessment made on practical demonstration. Results obtained from the students are much better. In their response almost 94% of them disagreed.

It is crucial for teachers to share the assessment criteria with learners to promote the chances of learning. The assessment criteria should be clear and should not be added after learners have generated the work for a given task. It is therefore vital that all learners in a group understand what they are trying to achieve in a given task and why they are doing it. If teachers want learners to understand and demonstrate their commitment to a task, they need, as far as it is possible, to decide on the goals and define the assessment criteria on which their progress is to be assessed (Learning and Skills Development Agency, 2005).

In the case of our sampled Universities experiences on the clarification of criteria for students on assessment is not yet fully developed. Students were assessed without clear picture of what ought to be assessed. The right of students to decide on the assessment criteria is almost none. Students are forced to be assessed with readymade criterions which are against the principle of Learning and Skills Development Agency.

As results indicated in Table 14, 93.3% of the two groups respondents agreed as clarification of performance assessment criteria for learners is less.

Students should be assessed about what they know (cognitive Domain); skills they have learned (psychomotor domain) and attitudes that they have been taught (affective Domain). For example, if the learning outcomes for a course specify that students will be able to recall basic facts then the assessment must test their ability to recall basic facts. As a second example, if the learning outcomes for a course specify that students will be able to expertly perform a certain skill, then the assessment must test expert ability.

Knowledge of the different levels of learning in the three domains (cognitive, psychomotor and affective) can help to ensure that assessment(s) test students at the appropriate level i.e. assessment fits with levels of learning specified in the learning outcomes (University of Auckland, 2010).

In measuring all level of domains within the practice of modular instruction, all sampled Universities were found at lower stage. Here, assessment made in all HEIs did not reflect the theoretical assumption of University of Auckland. This leads again students to rely on simple knowledge rather than the practical and attitudinal aspect of learning outcomes.

In assessing student's performance in all domains, except 15.8 % of students who said I am not sure and 7% of the whole respondents who said 'I agree', great majority of the two groups of respondents (76%) showed their disagreement.

Moreover, as evidences have been obtained from the depth interview and focused group discussion, most teachers were usually relying on assessment which is highly attached with cognitive domain. In this regard interviewees and focused group discussion participants have given the following opinions:

> *Since our method of teaching is highly confined within the classroom, the room in measuring the practical skill and attitude of the learner is less. We usually measure their cognitive skill specially the recalling part* (a teacher interviewee).

Most of our instruction is focused on theory. Activities that are related with practice were not treated as needed. Therefore, the experience of assessing learners' progress in the area of psychomotor and affective domains was not done as required. Rather we focused on the cognitive part (a teacher interviewee).

I have never seen a teacher while he/she is assessing students' practical skills. Even they do not know the level of our attitude towards our profession. They don't have any mechanism of knowing our interest. They are highly attached with classroom test which is a reflection of rote memory (a student interviewee).

Assessing students' performance in all level of Bloom's taxonomy is crucial. The mastery of learning can be easily examined if we all exercised such type of assessment within the realm of modular instruction. This is one of the principles of our modularize instruction which we are expected to follow. But in practice we are at far distance both in implementing the right method of teaching and assessing learners' progress at all levels. We simply measure the easiest and lowest part of the cognitive domain rather than looking and examining the all rounded personality of our learners (focused group participant).

Table 14. Assessment

Questions	Respondents	Response in%					mean	p-value
		Strongly Agree	Agree	Disagree	Strongly Disagree	Not Sure		
Student learning have been continuously assessed	Teachers	5.6	33.3	44.4	16.7		2.72	
	students		3.5	61.4	35.1		3.32	
	Total	1.3	10.7	57.3	30.7			0.001
Assessments were appropriate in terms of measuring students' skill	T	16.7	55.6	27.8			2.11	
	S		7.1	59.6	33.3		3.26	
	Total	4.0	18.7	52.0	25.3			0.000
Assessment is timed according to the pace of learning.	T	11.1	33.3	50.0	5.6		2.50	
	S		1.8	47.4	47.4	3.5	3.53	
	Total	2.7	9.3	48.0	37.3	2.7		0.000
The learner is assessed immediately on completion of each module.	T	44.4	50.0	5.6			1.61	
	S	38.6	43.9	17.5			1.79	
	Total	40.0	45.3	14.7				0.349
Assessment is based primarily on the practical demonstration of competence	T	5.6	33.3	50.0	11.1		2.67	
	S		5.3	57.9	36.8		3.32	
	Total	1.3	12.0	56.0	30.7			0.000
Performance criteria are clear to learners	T	5.6	16.7	55.6	22.2		2.94	
	S		1.8	52.6	45.6		3.44	
	Total	1.3	5.3	53.3	40.0			0.004
All domains were assessed	T	5.6	22.2	50.0	22.2		2.89	
	S		7.0	50.9	26.3	15.8	3.51	
	Total	1.3	10.7	50.7	25.3	12.0		0.008

Ramsden (2003) argues that effective comments on students' work represent one of the key characteristics of quality teaching. Similarly, Hounsell (2003) notes that it has long been recognized, by researchers and practitioners alike, that feedback plays a decisive role in learning and development, within and beyond formal educational settings. We learn faster, and much more effectively, when we have a clear sense of how well we are doing and what we might need to do in order to improve.

In a discussion of the conditions under which assessment supports learning, Gibbs and Simpson (2004) highlight the importance of feedback being understandable, timely and acted upon by students. Yorke (2003) argues that, as well as the content of feedback, an awareness of the psychology of giving and receiving feedback is vitally important to student learning. On such matters, Zahorik (1987), for example, stated that when students are told about the correctness of their answers, it helps them to alter their studying style which then leads to improved achievement. Furthermore, according to Zahorik, immediacy of feedback is important because it provides students with information about how well they are doing.

If the behavior is incorrect, the immediate feedback allows the learners to make corrective modifications and prevents continued practice of the incorrect behavior. On the other hand, if the behavior is correct, immediate feedback can motivate students to continue Zahorik (1987).

Despite its importance, the literature on feedback reveals that students are often dissatisfied with the feedback they receive, in terms of lacking specific advice to improve (Higgins et al., 2001).According to Higgins et al feedback is still relatively underexplored and is a process which faces challenges, such as time, miscommunication and emotional barriers.

Similar to Higgins et al views, as indicated in table 15, although more teachers (61.1%) disagreed, 92.9% of students reported that, the experience of immediate feedback is

found weak and as a result they were not as such beneficiaries. In the result significantly mean difference was also observed among the two groups of respondents ($p<00.5$).

However, in the depth interview and focused group discussion both groups were confirmed that immediate feedback was not done at regular bases on time.

> *At the time of classroom instruction students are expected to give an answer for a certain question either in group or individually. Just after their response we teachers usually give our comment. Actually this could not be done for the whole exercise at regular bases (a teacher interviewee).*
>
> *Timely feedback is not exercised as needed for the purpose of constructing learners' skills. In most cases teachers are not involved in such tedious activities except delivering their exam result. Even there are teachers who are not volunteers to deliver students' result (a teacher interviewee).*
>
> *Most teachers were not happy to give their feedback on either for their test or assignment that they gave us. This has been taken as a good trend in all fields of studies across the University (a student interviewee)*
> *Teachers were not ready to provide support to their students by using different supportive mechanism including giving feedback at the right time (a student interviewee).*
> *It is clear that giving an immediate feedback for students after any form of assessment is fundamental. However, due to multiple factors like large classroom, time constraints, lack of commitment, lack of awareness etc teachers were not in a position of giving an immediate feedback at all levels. As a result most students were not happy with their teachers' assessment techniques and follow up mechanisms (focus group participant).*

Table 15. Feedback

Questions	Respondents	Response in%					mean	p-value
		Strongly Agree	Agree	Disagree	Strongly Disagree	Not Sure		
Continuous feedback is given timely to a learner on assessment results	Teachers	11.1	50.0	38.9			2.28	
	students	1.8	5.3	59.6	33.3		3.25	
	Total	4.0	16.0	54.7	25.3			0.000

6.2.6. Analysis on Factors Affecting Module Development Practice

As to the factors that hinder the practice of module development, three main source of hindrance were considered, namely institutional factors**,** education system, and community involvement.

Of the three important factors within the institute conflict with traditional teaching approaches and lack of resources were considered as the significant determinants of module development practice. As has been seen in Table 16, great majority of respondents from the two groups (60%) said influence of time Table was low and 20% of them said it was poor.

On the other hand respondents who have said conflict with traditional teaching approaches is the highest source of the problem for the practice of module development is 49% which is higher than the number of respondents who have said either low (26%) or poor (4%). Similarly, 44% and 24% of respondents from the two groups were said lack of resource within the institute is high and medium respectively. In all responses significant mean difference were not observed among the two groups (p>005).

Table 16. Institute Based Factor

Factors	Respondents	Response in%				mean	P-value
		high	medium	low and	poor		
Time table difficulties	Teachers	11.0	11.0	61.0	17.0	2.83	
	students	2.0	18.0	60.0	21.0	3.00	
	Total	4.0	16.0	60.0	20.0		0.399
conflict with traditional teaching approaches	T	28.0	50.0	22.0		1.94	
	S	21.0	49.0	26.0	4.0	2.12	
	Total	23.0	49.0	25.0	3.0		0.393
lack of resources	T	33.0	44.0	22.0		1.89	
	S	21.0	44.0	28.0	7.0	2.21	
	Total	24.0	44.0	27.0	5.0		0.160

In relation to education system, all the three specific factors were assumed as the main source of the problems. As rate of responses shown in Table 17, significant numbers of respondents from the two groups (88%) agreed that overcrowded curriculum was the main challenge of module development practice.

In the case of unsupportive examination system significant mean differences among the two groups was observed ($p<0.05$). However, in sum, both groups agreed as unsupportive examination system was the other source of problem in practicing modular instruction.
Here, as indicated in table 17, though 61% of teachers respondents opposed, great majority of students (86%) agreed that unsupportive examination system was their main problem.

With regarding to financial difficulties, the two groups of respondents were having similar responses. Both of them agreed limitation of finance was the main source of their problem in exercising modular instruction. As it has been seen in Table 17, 61.6% of the two groups of respondents said problems that are related with finance are either high or medium.

Table 17. Factors Related within Education System

Factors	Respondents	Response in%				mean	p-value
		high	medium	low	poor		
overcrowded curriculum	Teachers	50.0	44.0	6.0		1.56	
	students	46.0	40.0	14.0		1.68	
	Total	47.0	41.0	12.0			0.493
unsupportive examination system	T	11.0	28.0	44.0	17.0	2.67	
	S	39.0	47.0	12.0	2.0	1.77	
	Total	32.0	43.0	20.0	5.0		0.000
financial difficulties	T	28.0	44.0	22.0	6.0	2.06	
	S	25.0	40.0	32.0	4.0	2.14	
	Total	25.0	41.0	29.0	4.0		0.711

Nowadays education takes place not only in institutes but also within families, communities, and society. In spite of the various degrees of responsibilities taken by each group, none can be the sole agent to take the entire responsibility for educating the students. The role of communities and society support is not less.

Heneveld and Craig (1996) recognized parent and community support as one of the key factors to determine school effectiveness in Sub-Saharan Africa. In developing relevant curriculum and learning materials, communities' and parents' involvement helps to achieve curriculums and learning materials that reflect student's everyday lives in society. Moreover, supports from the community can help in identifying and addressing

factors that contribute to educational problems, such as low participation and poor academic performance (World Bank 1995).

In our cases, in all of the sampled Universities, the role of communities in supporting the institutions seems to be less. Students' parents and other community members were not seen while they are supporting the HEIs either by the necessary resources or any form of ideas that pertains the practice of module development. As results has shown us in Table 18, majority of the two group of respondents said factors that are related with community is high in all the three considered factors (57% on parent support, 72% on other communality members support and 51% on lack of outside resources). In all of the three factors, significant mean differences were not also observed among the two groups of respondents ($p>0.05$).

Table 18. Factors within the Community

Factors	Respondents	Response in%				mean	p-value
		high	medium	low and	poor		
getting support from parents	Teachers	44.0	56.0			1.56	
	students	61.0	37.0	2.0		1.40	
	Total	57.0	41.0	1.0			0.288
other community members	T	61.0	39.0			1.39	
	S	75.0	25.0			1.25	
	Total	72.0	28.0				0.244
lack of outside resources	T	28.0	61.0	11.0		1.83	
	S	58.0	35.0	7.0		1.49	
	Total	51.0	41.0	8.0			0.047

6.2.7. Document Analysis

In the process of devising a module, the key is to forge educationally sound and logical links between learner needs, aims, learning outcomes, resources, learning and teaching strategies, assessment criteria and evaluation (Toohey 1999; Biggs 1999)

According to Brophy (2000) in designing a module, the following three important issues were vital; defining and prioritizing the content and skills from the domain taxonomy that the course should cover, define learning objectives for what students should be able to do at the end of the course which demonstrates their "understanding", and identify and sequence learning activities that develop this level of "understanding".
Based on Dick and Carey (1990) module design guide, document analysis has been made on five instructional design elements namely, on module rationale writing; Course objectives; Entry-level test; Multimedia and Learning activities.

1. **Module rationale writing:**

As far as module rationale writing concerned, results have shown us module rationales writing were found weak in some module elements like on evaluator on procedures, reasons for using modules, overview of content and its relations to other modules, target learners and instructions to use module.

The results showed that all modules were found to be weak in the five selected elements. As shown in Table 19, this element has a group mean score of 1.68. The two weakest elements were overview of content and its relations to other modules (mean score 1.4) and reasons for writing module (mean score 1.6).

Table 19. Module Rationale Writing

parameters		Module and courses					
		Module number: 01	Module number: 02		Module number: 03		mean
Instructional design elements	module elements	Introduction to psychology	Psychology of Childhood	Psychology of Adulthood and aging	Statistical methods in psychology 1	Research methods in Psychology	
Module rationale	Evaluation procedures (eg, assignment, examination, grade, etc.)	1	1	2		1	1.2
	Reasons for using modules	1	2	1	2	2	1.6
	Overview of content and its relations to other modules	1	1	2	1	2	1.4
	Target learners	2	3	2	2	3	2.4
	Instructions to use module	2	1	2	2	2	1.8
	Total	1.4	1.6	1.8	1.6	2	1.68

2. Course objectives

In all modules course objectives were identified in the beginning. However, as results showed in Table 20 among the six elements that were evaluated, four elements were found to be weak: Using learning domain (mean score 1.4), using learning hierarchy (mean score 1.2) and objectives are stated clearly and accurately (mean score 2.2)

In general course objectives were not analyzed according to learning domains plus they were not arranged according to learning hierarchy that is from lower order skills/knowledge to higher order skills/knowledge based on Gagne's learning categories (1992) or Bloom's learning taxonomy (1956). Similarly course objectives did not cover the overall content. The rest instructional elements were not having a significant problem (their mean score is >2.5)

Table 20. Course Objectives

parameters		Module and courses					
		Module number: 01	Module number: 02		Module number: 03		mean
Instructional design elements	module elements	Introduction to psychology	Psychology of Childhood	Psychology of Adulthood	Statistical methods in psychology	Research methods in Psychology	
Course objectives	Objectives consist of all domains	2	1	1	1	2	1.4
	Objectives are written according to learning hierarchy	1	1	1	1	2	1.2
	Objectives cover the whole module	2	3	2	3	3	2.6
	Use of appropriate performance verbs	3	3	4	3	4	3.4
	Objectives are clear and accurate	2	3	2	2	2	2.2
	Objectives are stated at the beginning	4	4	4	4	4	4

3. Entry-level test

Entry-level tests were not included in any module. In module writing, the entry-level test will determine the pre-knowledge and skills that a learner should have to help or prepare him/her for the actual lesson.

4. Multimedia

Almost all modules did not integrate non-print media such as video, slide and audio- cassette in the learning sequence to support the print-based self-instructional module.

5. Learning activities

In some modules there are few learning activities. In this area, 5 elements were evaluated. The results showed that 3 elements were found to be weak. The weak elements were: Providing feedback (mean score 2.04), providing follow-up activities (mean score2.30) and providing sufficient exercises and tests (mean score 2.50). The other two elements namely use of instructional strategies and providing references were found relatively strong.

Table 21. Learning Activities

parameters		Module and courses					
		Module number: 01	Module number: 02		Module number: 03		mean
Instructional design elements	module elements	Introduction to psychology	Psychology of Childhood	Psychology of Adulthood	Statistical methods in psychology 1	Research methods in Psychology	
learning activities	Use of instructional strategies (mean score	3	2	3	3	3	2.8
	Providing feedback	1	1	2	1	1	1.2
	Providing references	2	3	3	3	2	2.6
	Providing follow-up activities	1	1	2	1	1	1.2
	Providing sufficient exercises and tests	2	2	1	2	1	1.6

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1.Summary

In this study a mixed type of research was carried out to investigate modularization and the practices of module development in selected Ethiopian Universities. By exploring the experience of modular instruction that took place in College of Education within the selected three Universities, the current investigation has tried to examine the practice of module development with the help of ADDIE instructional model.

The relevant literature materials on the problem were reviewed under the second chapter of this research. In the literature different theoretical assumptions on modularization and practice of module development including quality education were reviewed. Moreover, relevant model of curriculum development and training modules were examined and described with the help of conceptual frame work. This was followed by the discussion on the history of the practice of modularization from Ethiopian HEIs perspective.

The literature review focused on the benefit modular instruction in HEIs due to the suggestion that modular instruction meets the needs of today's students more adequately than traditional instruction both with respect to the quality of learning and the content. However, various factors could contribute for its ineffective implementation. Among these, we can mention failure to assess gaps both within the instructions and implementers, failure in designing and developing the appropriate modules and use of poor delivery and assessment mechanisms.

By focusing on the examination of the practice of module development and causes of the implementation problems of modularization within the program in HEIs, data were collected to answer the research questions set in chapter one. Accordingly, questionnaires, unstructured and structured interviews, focus group discussions and

document analysis tools were employed to collect data. A pilot study was conducted to test the reliability and validity of the questionnaire for students and teachers in one university**.**

Data were collected from key informants (college teachers and trainees) and documents like modules and course outline were critically examined. Using both purposive and random sampling techniques, Colleges and respondents within the HEIs were chosen on the basis of the experience they acquired during the implementation of modular instruction in the previous years.

For capturing information about the practice of module development, focus group discussions were conducted with teachers who have more experience within the Colleges. Using purposive sampling techniques, a sample of six teachers assigned for this discussion.

Analysis was made based on the nature of the tools employed to collect the data. For the data collected by the use of questionnaire, information has been grouped in to different categories.

Interpretation of the data was made based on the research questions set. To assess the relationship between the respondent opinions on modularization and the practice of module development, chi-square test was employed. Furthermore t-test and F-test have been employed to examine the mean difference among the respondents.

In analyzing qualitative data, the interpretational and reflective analysis were selected as the most important approach in order to create the necessary categories and to reflect my personal views on the bases of the information I collected.

As to the ethical issues in this research, participants were given their informed consent prior to seeking their responses. For the sake of anonymity and confidentiality I have

tried to use pseudonyms of the participants in the research. After making a thorough analysis, the following major findings of the study were discovered:

- During the practice of module development critical gaps were not clearly identified and seen critically.
- Training needs for teachers on modularization were not made to fill their knowledge and skills gaps.
- Link between graduate profiles and learning outcomes was not adequately assessed.
- Integrated competencies which are useful for occupational tasks were not ahead satisfactorily formulated in terms of development stages with their indicators.
- Modules have not been designed in such a way that students have different options for taking various modules in the program so that they can complete the program on their own pace.
- Names that have been given to modules were not matched with the identified competencies.
- Module rationales and analysis of objectives in terms of learning domains with its hierarchy were not taken into consideration as needed.
- The realignments of courses in to one module with the required learning activities were found noticeably weak.
- Authentic activities and use of varied teaching learning strategies were not clearly shown at the time of module development.
- Teaching methods that were employed were highly dominated by the traditional lecture method.
- Method of teaching that are used for developing the student's ability to generate ideas and evidence like brain storming and problem solving were found at elementary stage.
- Trends in using technologies like internet and web based learning and use of lesson plans for the purpose of disseminating knowledge and facilitating learning were not detached from the traditional way of classroom teaching. .
- Assessments were not made on time in accordance to the learner’s pace.

- Assessment technique that was employed were not as such measure what intended to measure.
- The assessment techniques were fully attached with theories which did not go beyond the lower level of cognitive domain.
- Students are expected to take all types of exam without being aware of the assessment criteria that are needed for modification.
- Trends in giving immediate feedback is found weak or too low either in the form of written or verbal dialogues.
- Within the institutional factors, teaching approaches and lack of resources were the two major constraints of module development practice.
- In the educational system, overcrowded curriculum, unsupportive examination system and financial difficulties were having equal contribution in affecting the practice of module development.
- Finally, supports from the community side either in form of finance or ideas was found very weak.

6.2. Conclusions

In Ethiopia higher education institutes, curriculum is considering a change from traditional lecture and demonstration to self-paced modular instruction. As a result numerous public institutes have made this change in the past few years. Similarly, the three selected higher education institutes in Amhara region were contemplating this transition as well. Therefore, research was conducted to determine whether the change to modular instruction specifically the practice of module development could be qualitatively and quantitatively proven superior to traditional instruction. Historically, research on this topic has been inconclusive.

Since available research could not substantiate the practice of module development in higher education institutes, a mixed type of research was conducted on three colleges of education from the selected Ethiopian HEIs. Data were gathered by the use of

questionnaire, interview, focused group discussion and written document both from the teachers and students to reach on the following conclusion.

As has been indicated in the analysis and interpretation section, during the practice of module development critical gaps were not clearly identified and seen thoroughly both on the teachers and learners characteristics. Any training needs for teachers on modularization were not made to fill their knowledge and skills gaps either in the form of awareness or short term training.

The link between graduate profiles and learning out comes was not adequately assessed before the practice of modular instruction so as to address the core competences. Moreover, integrated competencies which are useful for occupational tasks were not ahead satisfactorily formulated in terms of developmental stages with their indicators.

Generally deficits in knowledge, attitude, or skills that currently exist in practitioners and the ideal approach to teaching and learning with the existing graduate profiles were not properly revisited and articulated in accordance to the prospected transformational changes.

As to the practice of designing, modules have not been designed in such a way that students have different options for taking various modules in the program so that they can complete the program on their own pace. Even most of the names that have been given to each module were not in apposition of accessing the identified competencies to be achieved by the learners. Moreover, module rationales like why and how learners should use the modules and analysis of objectives in terms of learning domains with its hierarchy were not taken into consideration as needed. Similarly, mechanisms of checkups weather learners' are ready or not for the existing modular instruction were also overlooked.

To develop a module that provides the required competences, it commands an institution or competent authority to pass through a series of stages. Modules can be developed at

either National or Institutional level. In either case the procedure is the same. The module should be a well planned and structured document showing what a learner (student) is expected to learn and achieve in terms of skills, knowledge and attitude and describes all aspects of teaching and learning such as learning strategies, assessment methods and course sequence with the appropriate references. However, in this study in all studied colleges, the realignments of courses in to one module with the required learning activities were found noticeably weak. Authentic activities and use of varied teaching learning strategies like student centered approach and problem based learning that were aligned with the characteristics of the learner were not clearly shown at the time of module development.

Teaching methods that were employed were highly dominated by the traditional lecture method. The rest of mode of deliveries like self study techniques, use of project work, discussion with debate, use of seminars and tutorials were not given emphasis in all courses.

Method of teaching that are used for developing the student's ability to generate ideas and evidence like brain storming and problem solving were found in rudimentary stage. Techniques like role play and self assessment that facilitate the personal development of students and use of reflective diary and work based learning that develop the capacity of students to plan and manage their own learning were not significantly practiced for modular mode of deliveries.

Trends in using technologies like internet and web based learning and use of lesson plans for the purpose of disseminating knowledge and facilitating learning were found too weak and not detached from the traditional way of classroom teaching.

In the area of assessment section the practice of continuous assessment seems to be weak in supporting the teaching learning process. Similarly, assessments were not made on time in according to the learner pace. In most cases teachers preferred to assess their students at the end of each module which is summative type of assessment. The use of

formative assessment is found less. Moreover, in all studied universities, assessment is highly relied on cognitive domains. The rest psychomotor and affective domains were either ignored or overlooked.

More recently, the shift towards competency based education has reframed the design, implementation, assessment and evaluation of education. Within this context assessment should be focused either on the achievement of individual competences or conceptualized around the established milestones. From this perspective assessment that has been made in all sampled Universities seems to be weak. Great effort was not exerted to check students' improvement in the world of work. The assessment techniques were fully attached with theories which do not go beyond the lower level of cognitive domain. Likewise, criteria that were used at the time of assessments were not shared for the owner of the subject (the learner). Students are expected to take all types of exam without being aware of the assessment criteria that are needed for modification. The need of clarification of performance assessment criteria for learners was totally ignored.

One of the main features of quality teaching is giving effective comments on students' work. From this perspective as many scholars have agreed with, timely feedback is central to student learning. Timely feedback plays a decisive role in learning and development within and beyond the formal educational settings. Written annotations and comments on drafts or on finalized assignments in addition to verbal dialogues prior to or after submission are basic. However, in this research, results have shown us trends in giving immediate feedback is found weak or too low either in the form of written or verbal dialogues.

In the practice of module development three possible factors were considered namely institutional factors**,** education system, and community involvement. All of them were having their own role in affecting the practice of modular instruction.

In this study as results have indicated, within the institutional factors, conflict with traditional teaching approaches and lack of resources were the two major constraints of

module development practice. In the case of educational system, all factors that have been examined (overcrowded curriculum, unsupportive examination system and financial difficulties) were having equal contribution in affecting the practice of module development. Similarly, in all Universities, supports from the community side either in form of finance or ideas was found very weak.

Generally, in the study, it was assured that practice of module development in all sampled Universities specifically in Colleges of education were not kept the assumption of the ADDIE model.

6.3. Recommendations

Overall, this study has tried to examine both internal and external enabling conditions for the practice of module development in HEIs within the selected samples. From the result it was clearly seen that significant limitation were found in all phases of module development practice. This calls for a closer attention of the practice of modularization across all HEIs. Therefore, in accordance with the finding, the following suggestions were forwarded for the purpose of improvement.

1. **On Needs Assessment**

- Prior to the practice of modularization both the government and institutions have to go through the three basic levels of needs assessment:

    - The external or Mega level—the needs of society and the larger environment. The expected out comes within the society in which we all live and in which we make our contributions should be thoroughly assessed.

    - Micro level needs- those needs related to the nature of outputs generated by Universities that is how well Universities are delivering results of benefit to itself and to its partners has to be seen critically.

- Macro level -Results that have been accomplished by the existing individual performers and teams that Universities use like learner characteristics and entry behavior, the nature of administration and teachers readiness, learning outcome and, competences with graduate profiles should be examined before the beginning of modular instruction. In general, the two main questions “what is” and “what should be” has to be clearly examined.

- Competency which is useful for occupational task should be identified and checked at the time of need assessment.

2. On Design

- In designing a module, the need of systematic approach is basic. Therefore, among the different systematic approach, recommend Dick and Carey’s (1990) approach which gives an emphasis on products. This approach has to be familiar for both teachers and module developers.

- The practice of module development in modular instruction invites students to take their own decision in selecting the appropriate module for their course of action. Therefore, students should be allowed to have different options for taking various modules.

- Care should be taken in naming the module so as to relate with the competencies within the learning materials.

3. On Module Development

- Pre-requisites in training package units of competency should be used where it is critical to achieving the subsequent competency. As a result in module development, issue of pre-requisites in training Package units of competencies should get emphasis. Here, vertical and horizontal integrity should be kept.

Similarly, a co-requisite course that must be taken at the same time has to get more emphasis in module development practice.

- In order to integrate theory with practice or to make learning practice based, credits has to be proportionally allotted and being exercised accordingly. In our case students should be involved in practice up to 30% either in the form of classroom demonstration or apprenticeship. Moreover, modules has to reflect authentic learning activities like role-playing, use of exercises, problem based activities, case studies, and participation in virtual communities of practice.
- The use of references is highly beneficial or even indispensable for students for the achievements of the expected learning outcomes. It should not be overemphasized in any academic environment. Therefore, libraries should intensify its information literacy skills program in order to help students maximize the use of online reference resources. On the other hand, the acquisition unit in the library should purchase good online reference sources that are not available for open access. Moreover, librarians should go an extra mile to encourage students to consult the available hard copies due to the fact that the information they need may not be available online.

4. On Mode of Delivery

- Effective teaching is best estimated in relation to the teachers' goal of teaching. What one counts as effective in one context may not be so in other. However, one should be aware of the use of various methods of teaching like, use of projects, debate, seminars, role play, brain storming, reflective diaries, self study and work placement more than the traditional lecture method and group work.
- Teachers and students should be encouraged to use web based learning including internet. Web-based learning allows colleges to increase their enrolment by attracting students from outside their local geographic area, reduces the demand on facilities such as classrooms and computer labs, and allows colleges to stay competitive in the changing educational marketplace.

- Administrators should also focus on understanding and accounting for faculty concerns related to financial resources and technological infrastructure and issues related to support and training in order to facilitate the implementation of web-based learning.

5. On assessment

- In the practice of modular instruction the use of continuous assessment and timely feedback are fundamentals. Therefore, teachers who are involved in such type of mode of delivery should be more familiar with the different techniques of assessment like self assessment, peer assessment, formative and summative assessment. These all techniques of assessment should be in place at the time of modular instruction.
- Higher institutions of learning should train teachers on how to use continuous assessment strategies for their implementation. The training should focus on how teachers can carry out continuous assessment in the different teaching and learning stations with ease.
- Regular training and seminars/workshops should be constantly organized for teachers to update their knowledge of the process involved in the implementation of continuous assessment to further boost the realization of learning objectives as room still exists for improvement.
- Competency-based assessment has to be done using the following assessment strategies:

    - Direct observation

    - Multiple source feedback: which is a questionnaire based assessment strategy that includes self-evaluation and feedback on observable behaviors from colleagues and co-workers.

    - Audit and feed back: which is an assessment strategy that provides performance data (typically from records) with feedback

- Portfolios and Reflective Learning Tools: Portfolios are technological tools that span the educational continuum and provide formative assessment of the proficiency of individual learning and improvement where scores and judgments are based on the individual data elements.
- Finally a practicum guide with a Performance assessment form (which is attached in appendix) should be developed and distributed to all stake holders.

- Assessment criteria should be clear so as to understand what students are trying to achieve in a given task and why they are doing it. Moreover, in order to know more about the overall change of the learner, the higher order of learning out comes like psychomotor and affective domain should be checked with the help of the above stated strategies. This can be done through the use of table of specification

6. On Factors Related With Institution, Education System and Community Involvement

- Because success in modular courses relies more heavily on study skills than in conventional courses, the provision of an organized module booklet is a necessary adjunct to a modular course.
- Teaching assistants have been found to need competence in lecture, discussion, and questioning skills, in evaluation and feedback methods, in the course content, and in the administrative policies of the course and the university, and should therefore be selected and trained with great care.
- Reference books for assigned or supplementary reading, as well as audio-visual aids should be readily accessible to the students. Similarly, copies of the reading materials should be made available under the supervision of a teaching assistant.
- In a large course, care must be taken to ensure that sufficient human resources are supplied and that the course is organized in such a way as to encourage student involvement and optimize available resources.
- The assembly of learning materials into modules should be done in line with the set of modular principles so as to avoid an overcrowded curriculum.

- Colleges have to come with an authentic proposal to seek fund from the community, government and institutions so as to run the practice of module development at ease.
- Both government and the institute have to look their source of budget in supporting the practice of module development.
- Finally, awareness has to be created for all stakes at regular bases on competencies and on the practice of module development in HEIs.

Although significant results were obtained with the current sample size, the sample size might be expanded in a follow-up study. One might ask, if the practice of module development is effective in other field of studies in the other HEIs.

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APPENDICES

Appendix A: **Questionnaire to be filled by College Trainees**

This questionnaire is developed for the purpose of examining the Practice of module development. Please feel free in giving your genuine answer based on the reality on the ground.

1. **Back ground information**

Name of College---------- Sex---------- Year of study ----------

2. Question on Module Development Practice

Please read and consider each category carefully. Rate the degree to which you think your college has practiced each indicator using the following scale in the columns

Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD) and Not Sure (NS)

2.1. Module Development

S. N	Items		categories			
		SA	A	D	SD	NS
1.	Module is characterized by authentic activities that encourage students to achieve module objective					
2.	Student workload in ECTS consists of the time required to complete all planned learning activities					
3.	Any unnecessary redundancies in the courses have been eliminated					
4.	Attempt has been made to make sure that content, if it is very important, is treated well					
5.	Consider realigning together requisite and prerequisite courses into one module					
6.	Important references were identified					
7.	In the module theory and practice have been well integrated					

S. N	Items		Categories			
		SA	A	D	AD	NS
1.	Teaching methods used were varied in nature so as to address the individual differences					
2.	The method of teaching and learning that was employed has taken into account the characteristics of the learners					
3.	students have been encouraged to take responsibility for their own learning as it supports the shift of focus from the traditional teachers centered teaching to student centered learning					
4.	lessons have been carefully planned					

2.2. Mode of Delivery

On Knowledge Dissemination and Capability Development

	Mode of delivery	Status					Mode of delivery	Status			
		H	M	L	P			H	M	L	P
Disseminate knowledge	Lectures					**Develop capability to use ideas and information**	Group working				
	Use of exercises that require students to find up-to-date knowledge										
	Directed private study						Discussion and debate				
	Use of the Internet										
Develop the student's ability to test ideas and evidence	Seminars and tutorials					**Develop the student's ability to generate ideas and evidence**	Brainstorming				
	Peer assessment						Problem solving				
Facilitate the personal development of students	Role play					**Develop the capacity of students to plan and manage their .**	Reflective diaries				
	Self-assessment						Work placement				

H=high, M=medium , L=low and P=poor

2.3. Monitoring and Evaluation Practice

S.N	Items	Categories				
		SA	A	D	SD	NS
1.	Student learning have been continuously assessed					
2.	Continuous feedback is given timely to a learner on assessment results					
3.	Assessments were appropriate in terms of measuring students' skill					
4.	Teachers have employed progressive assessment					
5.	Teachers regularly monitor the whole provision of the module					
6.	Assessment is timed according to the pace of learning.					
7.	The learner is assessed immediately on completion of each module.					
8.	Assessment is based primarily on the practical demonstration of competence					
9.	Performance criteria are clear to learners					
10.	In assessing student's performance all domains (cognitive, affective and psychomotor domains) were stressed					

Please rate the following factors of mode of deliveries while you are exercising modularization by putting "X" mark under the given categories

S.N	Area	**factors**	**Status**			
			High	Medium	low	poor
1.	within the institution	Time table difficulties				
		conflict with traditional teaching approaches				
		lack of resources				
2.	within the education system	overcrowded curriculum				
		unsupportive examination system				
		financial difficulties				
3.	within the community	getting support from parents				
		other community members				
		lack of outside resources				

Appendix B: Questionnaire to be filled by College Teachers

This questionnaire is developed for the purpose of examining the Practice of module development in higher education. Please feel free in giving your genuine answer based on the reality on the ground.

1. **Back ground information**

Name of faculty/institute---------- Department ---------- --------Sex--------
qualification ---------- Subjects you teach ----------year of service ----------

2. **Question on Module Development Practice**
   Please read and consider each category carefully. Rate the degree to which you think your faculty/institute has practiced each indicator using the following scale in the columns.

Strongly Agree (SA) , Agree (A), Disagree (D), Strongly Disagree (SD), Not Sure (NS)

2.1. Question on Need Assessment

Have you ever participated in Module Development? If your answer is "Yes", please indicate your degree of agreement for all questions. If you did not participate, go to question 2.3 -2.5 that are focused on module development, delivery and evaluation practice.

S.N	**Items**		**Status**			
		SA	A	D	SD	NS
1.	Before the development of modules critical gaps were identified					
2.	Pre-test have been provided to students in identifying students entry behavior appropriate for the module					
3.	Any training needs for teachers have been identified and addressed with regard to the required competencies of teachers to implement modular approach					
4.	Teachers' knowledge and skills required to deliver the module have been assessed					
5.	Competencies were formulated in terms of development stages with their indicators					
6.	Awareness was created on modularization to different stakeholders					
7.	Learning outcome were formulated as core (key) competencies (graduate profiles) in their context					
8.	Major problems of the existing curriculum were brainstormed					
9.	Professional profile of the existing programs was revisited					

2.2.Module design

S.N	Items		categories			
		SA	A	D	SD	NS
1.	Modular curricula have been designed in such a way that students have different options for taking various modules in the program so that they can complete the program on their own pace.					
2.	Module names have been related to the identified competencies to be achieved					

2.4.Module Development

S.N	Items		categories			
		SA	A	D	SD	NS
1.	Module is characterized by authentic activities that encourage students to achieve module objective					
2.	Student workload in ECTS consists of the time required to complete all planned learning activities					
3.	Any unnecessary redundancies in the courses have been eliminated					
4.	Attempt has been made to make sure that content, if it is very important, is treated well					
5.	Consider realigning together requisite and prerequisite courses into one module					
6.	Important references were identified					
7.	In the module theory and practice have been well integrated					

2.5.Mode of Delivery

S.N	Items		Categories			
		SA	A	D	AD	NS
1.	Teaching methods used were varied in nature so as to address the individual differences					
2.	The method of teaching and learning that was employed has taken into account the characteristics of the learners					
3.	students have been encouraged to take responsibility for their own learning as it supports the shift of focus from the traditional teachers centered teaching to student centered learning					
4.	lessons have been carefully planned					

On Knowledge Dissemination and Capability Development

	Mode of delivery	Status					Mode of delivery	Status			
		H	M	L	P			H	M	L	P
Disseminate knowledge	Lectures					**Develop capability to use ideas and information**	Group working				
	Use of exercises that require students to find up-to-date knowledge										
	Directed private study						Discussion and debate				
	Use of the Internet										
Develop the student's ability to test ideas and evidence	Seminars and tutorials					**Develop the student's ability to generate ideas and evidence**	Brainstorming				
	Peer assessment						Problem solving				
Facilitate the personal development of students	Role play					**Develop the capacity of students to plan and manage their own learning**	Reflective diaries				
	Self-assessment						Work placement				

H=high, M=medium , L=low and P=poor

2.6. Monitoring and Evaluation Practice

S.N	Items	Categories				
		SA	A	D	SD	NS
1.	Student learning have been continuously assessed					
2.	Continuous feedback is given timely to a learner on assessment results					
3.	Assessments were appropriate in terms of measuring students' skill					
4.	Teachers have employed progressive assessment					
5.	Teachers regularly monitor the whole provision of the module					
6.	Assessment is timed according to the pace of learning.					
7.	The learner is assessed immediately on completion of each module.					
8.	Assessment is based primarily on the practical demonstration of competence					
9.	Performance criteria are clear to learners					
10.	In assessing student's performance all domains (cognitive, affective and psychomotor domains) were stressed					

Please rate the following factors of mode of deliveries while you are exercising modularization by putting "X" mark under the given categories

S.N	Area	**factors**	**Status**			
			High	Medium	low	poor
4.	within the institute	Time table difficulties				
		conflict with traditional teaching approaches				
		lack of resources				
5.	within the education system	overcrowded curriculum				
		unsupportive examination system				
		financial difficulties				
6.	within the community	getting support from parents				
		other community members				
		lack of outside resources				

Appendix C: Interview Guide for Trainees

This guide is developed for the purpose of examining the Practice of module development in higher education. Please feel free in giving your genuine opinion based on the reality on the ground

I. On Module Development

1. Do you think that modules were characterized by authentic activities that encourage students to achieve module objective?
2. Do you think that workloads in ECTS have consisted the time required to complete all planned learning activities?
3. Do you know something about how unnecessary redundancies within the courses are eliminated and substitutes by important contents? If not, what do you think about the reason?
4. How realignment is done in terms of requisite and prerequisite courses? If not, what do you think about the reason?
5. Do you think that important references were identified?
6. How theory and practice have been integrated within the module? If not, what do you think about the reason?
7. Do have something that you add on module development practice?

II. On Mode of Delivery

1. Do you think that teaching methods used were varied in nature so as to address the individual differences? If not, what do you think about the reason?
2. To what extent student centered approach is exercised so as to substitute teacher centered? If not, what do you think about the reason?
3. Do teachers prepare their lesson in an organized way? If not, what are the possible reasons for these issues?
4. Which methods of teaching are usually exercised in modular instruction? Why?
5. Do you have other things that you want to add on module delivery system?

III. On Monitoring and Evaluation Practice

1. Do you think that students learning have been continuously assessed? If so what are the mechanisms? If not, what are the reasons?
2. Do teachers give continuous feedback on time? If so in what way? If not, what are the reasons?
3. Do you think that assessments that have been made were appropriate in terms of measuring students' skill? If not, why?
4. Do teachers evaluate the module regularly? If yes, how? If not, why?
5. Do you think that assessment is based primarily on the practical demonstration of competence?
6. Do students clear on performance criteria? If yes, how? If not, why?

7. In assessing student's performance, do you think that all domains (cognitive, affective and psychomotor domains) were equally treated? If yes, how? If not, why?
8. Of the following factors which one of them is most determinant in modular instruction? Why?
    a. Institute based factors
    b. Education system based factors
    c. Community based factors

Interview Guide for Training (Amharic Version)

በሰልጣኝ ተማሪወች የሚሞላ መጠይቅ

ይህ መጠይቅ የተዘጋጀው የሞዱውል ዝግትንና አተገባበር በከፍተኛ ትምህርት ምን እንደሚመስል ለማየት ሲሆን መጠይቁን ሲሞሉ ራስዎን ከመንኛውም ተጽኖ ነጻ በማድረግና እውነተኛ መረርጃ በመስጠት ዙሪያ ትብብር እንዲደርጉልን ስንጠይቅ ለሚደረግልን ትብብር ሁሉ ምስጋናችን እጂግ የላቀ ነው፡፤

- **ዕባክዎን አስተያየተወን ከመጠይቁ ጋር በተያያዘው ነጭ ወረቀት ላይ ይሙሉልን**

1. አጠቃላይ መረጃን በተመለከት

የኮለጁ ስም----------ዩታ----------
ዓመት(የኮለጅ ቆይታ)-------

2. በሞዱዩል ዝግጂትና አተገባበር ዙሪያ የቀረቡ መጠይቆች

በሞዱዩል ዝግጅት ዙሪያ (Module Development)

1. የሞዱዩሎች ዝግጅት ተማሪውን በማበረታታት የተፈለገውን ዓላማ ግብ ለማድረስ በሚችሉ ተግባሮች የተደራጀ ነው ብለው ያምናሉ? ከሆነ በምን ብምን ዙሪያ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
2. የተማሪው የትምህርት ጫና ምጣኔ የታቀደውን ትምህርት ለማስፈጸም ብቁ ነው ብለው ያምናሉ? ከሆነ እንዴት? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
3. ሞዱዩል ሲዘጋጅ አላስፈላጊ የሆኑ ድግግሞሽን በተገቢው መልኩ በማሰገድ በምትኩ ጠቀሜታቸው የጎላ ይዘቶች ተካተዋል የሚል እምነት አለወት ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
4. በአንድ ሞዱዩል ውስጥ የተካተቱ ኮርሶች ቅደም ተከተላቸውን በአግባቡ የጠበቁ ናቸው ብለው ያምናሉ? ከሆነ በምን ብምን መልኩ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
5. ጠቀሜታቸው የጎላ ማጣቀሻ መጽሀፍቶች በሚገባ መልኩ ተለይተው በየሞዱዩሉ መጨረሻ እንዲቀመጡ ተደርጓል? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
6. ሞዱዩሎች ሲዘጋጁ ቲወሪን ከተግባር ጋር ያቀናጁ ናቸው ብለው ያምናሉ? ከሆነ በምን ብምን መልኩ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
7. በሞዱዩል ዝግጅት ዙሪያ ተጨማሪ አስተያየቶች አለወት?

የትምህርት አቀራረብን በተመለከተ (Mode of Delivery)

1. የመማር ማስተማር ዘዴው የተማሪወችን ልዩነትና ባህሪ ከግምት ያስገባ ነው ብለው ያምናሉ? ከሆነ በምን ብምን መልኩ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
2. ተማሪወች ከመምህር ተኮር የማስተማር ዘዴ በመላቀቅ ተማሪ ተኮር በሆነው የመማር ማስተማር ዘዴ ተጠቃሚ እንዲሆኑ እየተበረታቱ ይገኛሉ ብለው ያምናሉ? ከሆነ በምን ብምን ዙሪያ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
3. በሞዱዩላር ትምህርት የመምህራን የትምህርት አዘገጃጀት በጥንቃቄ በእቅድ እየተመራ ነው የሚል እምነት አለውት? ከሆነ እንዴት? ካልሆነ ምክንያቱ ምን ይመስለወታለል?

4. መምህራን በሞዱዩላር ትምህርት አሰጣጥ ዙሪያ አዘውትረው የሚጠቀሙበት የመማር ማስተማር ዘዴ የትኛው ነው ?ለምንስ ይመስለወታል?
5. በትምህርት አቀራረብ ዙሪያ ተጨማሪ አስተያየቶች አለወት?

ምዘናና ግምገማ (Monitoring and Evaluation)

1. ተማሪወች በተከታታይ ምዘና አዘውትረው እየተመዘኑ ይገኛሉ ብለው ያምናሉ? ከሆነ በምን ብምን መልኩ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
2. ወቅቱን የጠበቀ ግብረ መልስ በመምህራን በኩል ይሰጣል? ከሆነ በምን ብምን ዙሪያ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
3. የተማሪውን ክህሎት ለመለካት እየተከናወነ ያለው ምዘና በተገቢው ምንገድ እየተፈጸመ ነው የሚል እምነት አለዎ? ከሆነ በምን ብምን ዙሪያ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
4. መምህራን በሞዱዩል ዝግጅት ዙሪያ ተከታታይ ግምገማ ያካሂዳሉ ብለው ያምናሉ? ከሆነ በምን ብምን መልኩ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
5. በተግባር ላይ በመመስረት ምዘና ይካሄዳል የሚል እምነት አለዎት? ከሆነ በምን ብምን ዙሪያ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
6. የግምገማ የአፈጻጸም መስፈርቶች ለተማሪወች ግልጽ ናቸው ብለው ያስባሉ? ከሆነ እንዴት? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
7. የተማሪወች ምዘና ሁሉንም የትምህርት ዓላማወች ታሳቢ ያደረገ ነው ብለው ያስባሉ? ከሆነ እንዴት? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
8. ከሚከተሉት የሞዱላር ትግበራ ችግሮች መንስዔ ውስጥ ከፍተኛውን ድርሻ የሚይዘው የቱ ነው ?ለምን ?
    a. ሀ. በዩንቨርስቲው ውስጥ የሚስተዋሉ ችግሮች
    b. ለ. በትምህርት ስርዓቱ ውስጥ የሚንጸባረቁ ችግሮች
    c. ሐ. በህብረተሰቡ ውስጥ ያሉ ችግሮች

Appendix D: Interview Guide for Trainees

This guide is developed for the purpose of examining the Practice of module development in higher education. Please feel free in giving your genuine opinion based on the reality on the ground.

I. On Need Assessment

1. Do you think that critical gaps were fully identified before the development of modules?
2. Is there any pre-test that has been made for the purpose of identifying students' entry behavior appropriate for the module? If yes, How? I f no why?
3. In what way training needs for teachers have been identified and addressed with regard to the required competencies of teachers to implement modular approach? If not why?
4. Do you think that assessment is properly made on teachers' knowledge and skills for the purpose of module instruction? If yes, How? I f no why?
5. Do you think that the necessary competences were formulated in terms of development stages with their indicators? If yes, How? I f no why?
6. How awareness is created on modularization to different stakeholders? If not, why?
7. How learning outcomes were formulated as core (key) competencies (graduate profiles? If not, what do you think about the reason?

8. Do you know something about how revision on major problems within the existing curriculum is made? If yes, How? If not, what do you think about the reason?
9. Do you have other things that you want to add on need assessment?

IV. On Module Design

1. In designing the module what were the necessary option that have been considered for taking various modules in the program so that students can complete the program on their own pace?

2. How do you see the relation between module name and module contents? In terms of identified competencies to be achieved?

3. Do you have other things that you want to add on module design?

V. On Module Development

1. Do you think that modules were characterized by authentic activities that encourage students to achieve module objective?
2. Do you think that workloads in ECTS have consisted the time required to complete all planned learning activities?
3. Do you know something about how unnecessary redundancies within the courses are eliminated and substitutes by important contents? If not, what do you think about the reason?
4. How realignment is done in terms of requisite and prerequisite courses? If not, what do you think about the reason?

5. Do you think that important references were identified?

6. How theory and practice have been integrated within the module? If not, what do you think about the reason?

7. Do have something that you add on module development practice?

VI. On Mode of Delivery

1. Do you think that teaching methods used were varied in nature so as to address the individual differences? If not, what do you think about the reason?
2. To what extent student centered approach is exercised so as to substitute teacher centered? If not, what do you think about the reason?
3. Do teachers prepare their lesson in an organized way? If not, what are the possible reasons for these issues?
4. Which methods of teaching are usually exercised in modular instruction? Why?
5. Do you have other things that you want to add on module delivery system?

VII. On Monitoring and Evaluation Practice

1. Do you think that students learning have been continuously assessed? If so what are the mechanisms? If not, what are the reasons?
2. Do teachers give continuous feedback on time? If so in what way? If not, what are the reasons?

3. Do you think that assessments that have been made were appropriate in terms of measuring students' skill? If not, why?
4. Do teachers evaluate the module regularly? If yes, how? If not, why?
5. Do you think that assessment is based primarily on the practical demonstration of competence?
6. Do students clear on performance criteria? If yes, how? If not, why?
7. In assessing student's performance, do you think that all domains (cognitive, affective and psychomotor domains) were equally treated? If yes, how? If not, why?
8. Of the following factors which one of them is most determinant in modular instruction? Why?
    d. Institute based factors
    e. Education system based factors
    f. Community based factors

Interview Guide for Teachers (Amharic Version)

በአሰልጣኝ መምህራን የሚሞላ መጠይቅ

ይህ መጠይቅ የተዘጋጀው የሞዱውል ዝግትንና አተገባበር በከፍተኛ ትምህርት ምን እንደሚመስል ለማየት ሲሆን መጠይቁን ሲሞሉ ራስዎን ከመንኛውም ተጽኖ ነጻ በማድረግና እውነተኛ መረጃ በመስጠት ዙሪያ ትብብር እንዲደርጉልን ስንጠይቅ ለሚደረግልን ትብብር ሁሉ ምስጋናችን እጂግ የላቀ ነው፡፤

- **ዕባክዎን አስተያየተወን ከመጠይቁ ጋር በተያያዘው ነጭ ወረቀት ላይ ይሙሉልን**

3. አጠቃላይ መረጃን በተመለከት

የኮለጁ ስም----------ት/ክፍል---------- ጾታ ---------የትምህርት ደረጃ ------- የሚያስተምረው ትምህርት---------- የአገልግሎት ዘመን------

4. በሞዱዩል ዝግጂትና አተገባበር ዙሪያ የቀረቡ መጠይቆች

የዳሰሳ ጥናትን በሚመለከት (Need Assessment)

1. ከሞዱዩል ዝግጅት በፊት ዋና ዋና ክፍተቶችን በመለየት ዙሪያ የዳሰሳ ጥናት የተካሄደ ይመስለወታል ? ከሆነ በምን ብምን ዙሪያ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
2. የተማሪውን ዘግጁነት ለማረጋገጥ ከሞዱዩል ዝግጅት በፊት ቅድመ ፈተና ተሰጥቷል ብለው ያምናሉ?ከሆነ በምን ብምን ዙሪያ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
3. በሞዱዩል ዝግጅትና በኮምፒታንሲ ዙሪያ የመምህራንንና የደንበኞችን የስልጠና ፍላጎት በመለየት አስፈላጊ የሆነ የአቅም ግንባታ ስራ ተሰርቷል የሚል እምነት አለወት ? ከሆነ በምን መልኩ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
4. ለሞዱዩል ዝግጅት ሊያበቃ የሚችል የመምህራን እውቀትና ክህሎት በአግባቡ ተዳሷል ብለው ያምናሉ? ከሆነ በምን ብምን ዙሪያ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
5. ተማሪውን ለማብቃት የሚያስችሉ ኮምፒታንሲወች ከነመለያ ባህሪያቸው ተዘጋጅተዋል ብለው ያምናሉ? ከሆነ በምን ብምን ዙሪያ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
6. የመማር ግቦች (learning outcome) ከዋና ዋና ኮምፒታንሲወች አንጻር ተቀምጧል ብለው ያስባሉ? ከሆነ በምን ብምን መልኩ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
7. የነባሩ የስርዓተ ትምህርት ዋና ዋና ችግሮች ተለይተዋል ብለው ያስባሉ? ከሆነ በምን መልኩ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
8. የነባሩ ፕሮግራም የሙያ ገጽታ (professional profile) በአግባቡ ታይቷል ብለው ያምናሉ? ከሆነ በምን ብምን መልኩ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
9. በዳሰሳ ጥናት ዙሪያ ተጨማሪ አስተያየቶች ካለወት ቢጨምሩበት፡፡

በሞዱዩል ቀረጻ ዙሪያ (Module Design)

1. የሞዱዩሎች አቀራረጽ ተማሪወች በሚፈልጉት ምርጫና ፍጥነት ሊስተናገዱበት በሚችል መልኩ ነው በለው ያስባሉ? ከሆነ በምን ብምን መልክ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?

2. የሞዱዩሎች የስም ስያሜ ተማሪወችን ብቁ ለማድረግ ከተቀመጠው ይዘት ጋር ይጣጣማል ? ከሆነ እንዴት? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
3. በሞዱዩል ቀረጻ ዙሪያ ተጨማሪ አስተያየቶች ካለወት ቢጨምሩበት::

በሞዱዩል ዝግጅት ዙሪያ (Module Development)

1. የሞዱዩሎች ዝግጅት ተማሪውን በማበረታታት የተፈለገውን ዓላማ ግብ ለማድረስ በሚችሉ ተግባሮች የተደራጀ ነው ብለው ያምናሉ? ከሆነ በምን ብምን ዙሪያ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
2. የተማሪው የትምህርት ጫና ምጣኔ የታቀደውን ትምህርት ለማስፈጸም ብቁ ነው ብለው ያምናሉ? ከሆነ እንዴት? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
3. ሞዱዩል ሲዘጋጅ አላስፈላጊ የሆኑ ድግግሞሽን በተገቢው መልኩ በማሰገድ በምትኩ ጠቀሜታቸው የጎላ ይዘቶች ተካተዋል የሚል እምነት አለወት ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
4. በአንድ ሞዱዩል ውስጥ የተካተቱ ኮርሶች ቅደም ተከተላቸውን በአግባቡ የጠበቁ ናቸው ብለው ያምናሉ? ከሆነ በምን ብምን መልኩ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
5. ጠቀሜታቸው የጎላ ማጣቀሻ መጽሀፍቶች በሚገባ መልኩ ተለይተው በየሞዱዩሉ መጨረሻ እንዲቀመጡ ተደርጓል? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
6. ሞዱዩሎች ሲዘጋጁ ቲወሪን ከተግባር ጋር ያቀናጁ ናቸው ብለው ያምናሉ? ከሆነ በምን ብምን መልኩ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
7. በሞዱዩል ዝግጅት ዙሪያ ተጨማሪ አስተያየቶች አለወት?

የትምህርት አቀራረብን በተመለከተ (Mode of Delivery)

1. የመማር ማስተማር ዘዴው የተማሪወችን ልዩነትና ባህሪ ከግምት ያስገባ ነው ብለው ያምናሉ? ከሆነ በምን ብምን መልኩ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
2. ተማሪወች ከመምህር ተኮር የማስተማር ዘዴ በመላቀቅ ተማሪ ተኮር በሆነው የመማር ማስተማር ዘዴ ተጠቃሚ እንዲሆኑ እየተበረታቱ ይገኛሉ ብለው ያምናሉ? ከሆነ በምን ብምን ዙሪያ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
3. በሞዱዩላር ትምህርት የመምህራን የትምህርት አዘገጃጀት በጥንቃቄ በእቅድ እየተመራ ነው የሚል እምነት አለውት? ከሆነ እንዴት? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
4. መምህራን በሞዱዩላር ትምህርት አሰጣጥ ዙሪያ አዘውትረው የሚጠቀሙበት የመማር ማስተማር ዘዴ የትኛው ነው ?ለምንስ ይመስለወታል?
5. በትምህርት አቀራረብ ዙሪያ ተጨማሪ አስተያየቶች አለወት?

ምዘናና ግምገማ (Monitoring and Evaluation)

1. ተማሪወች በተከታታይ ምዘና አዘውትረው እየተመዘኑ ይገኛሉ ብለው ያምናሉ? ከሆነ በምን ብምን መልኩ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
2. ወቅቱን የጠበቀ ግብረ መልስ በመምህራን በኩል ይሰጣል? ከሆነ በምን ብምን ዙሪያ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
3. የተማሪውን ክህሎት ለመለካት እየተከናወነ ያለው ምዘና በተገቢው ምንገድ እየተፈጸመ ነው የሚል እምነት አለዎ? ከሆነ በምን ብምን ዙሪያ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
4. መምህራን በሞዱዩል ዝግጅት ዙሪያ ተከታታይ ግምገማ ያካሂዳሉ ብለው ያምናሉ? ከሆነ በምን ብምን መልኩ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
5. በተግባር ላይ በመመስረት ምዘና ይካሄዳል የሚል እምነት አለዎት? ከሆነ በምን ብምን ዙሪያ? ካልሆነ ምክንያቱ ምን ይመስለወታለል?

6. የግምገማ የአፈጻጸም መስፈርቶች ለተማሪወች ግልጽ ናቸው ብለው ያስባሉ? ከሆነ እንዴት? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
7. የተማሪወች ምዘና ሁሉንም የትምህርት ዓላማወች ታሳቢ ያደረገ ነው ብለው ያስባሉ? ከሆነ እንዴት? ካልሆነ ምክንያቱ ምን ይመስለወታለል?
8. ከሚከተሉት የሞዱላር ትግበራ ችግሮች መንስዔ ውስጥ ከፍተኛውን ድርሻ የሚይዘው የቱ ነው ?ለምን ?
    a. ሀ. በዩንቨርስቲው ውስጥ የሚስተዋሉ ችግሮች
    b. ለ. በትምህርት ስርዓቱ ውስጥ የሚንጸባረቁ ችግሮች
    c. ሐ. በህብረተሰቡ ውስጥ ያሉ ችግሮች

Appendix E: Focus Group discussion Guide

1. Is there in form of need assessment techniques that has been made before the practice of modular instruction? Please try to describe all situations all what you Know as far as need assessment.
2. To what extent stake holders participated in adapting modular instruction? What were the reflection of teachers, students, parents, government organization and none government organization in the practice of module development?
3. Is there any research made on traditional approach so as to implement the new modular mode of delivery?
4. Do you have some knowledge on the design of modules? Please tell us your experience how you design modules that you are using currently.
5. Do you see integration between theory and practice? If so, please tell us how they integrate. If not, what are the possible reasons?
6. How do you see the use of technology and availability of reference materials in your University?
7. Do teachers use varieties of teaching learning strategies like project work, debate, seminars and others? If not why?
8. To what extent the three domains of Bloom's taxonomy were treated in assessing learners' progress? If not what do you think about the reasons?
9. Do teachers give feedback for students on time? If so, how? If not, why?
10. What are the possible factors that hinder the practice of module development?

Appendix F: **Sample Chi Square, t-test and F-test Results**

Sample results: for Question 1 on need assessment, Q2 on design, Q4 on module development, Use of the Internet from mode of delivery, Q8 on assessment practice and overcrowded curriculum from hindering factors

Question 1 on need assessment

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
QN1 * University	18	23.7%	no	0%	18	100.0%

QN1 * University Cross tabulation

% within University

		University			Total
		WOLLO	WOLDIA	BAHIRDAR	
QN1	STRONGLY AGREE	16.7%			5.6%
	AGREE		16.7%		5.6%
	DISAGREE	50.0%	50.0%	16.7%	38.9%
	STRONGLY DISAGREE	33.3%	33.3%	50.0%	38.9%
	NOT SURE			33.3%	11.1%
Total		100.0%	100.0%	100.0%	100.0%

One way ANOVA

Descriptive

QN1

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
WOLLO	6	3.00	1.095	.447	1.85	4.15	1	4
WOLDIA	6	3.17	.753	.307	2.38	3.96	2	4
BAHIRDAR	6	4.17	.753	.307	3.38	4.96	3	5
Total	18	3.44	.984	.232	2.96	3.93	1	5

ANOVA

QN1

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.778	2	2.389	3.071	.076
Within Groups	11.667	15	.778		
Total	16.444	17			

Question 2 on design

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
QDS2 * University	18	23.7%	58	76.3%	76	100.0%

QDS2 * University Cross tabulation

% within University

		University			Total
		WOLLO	WOLDIA	BAHIRDAR	
QDS2	STRONGLY AGREE			16.7%	5.6%
	AGREE	33.3%	50.0%	16.7%	33.3%
	DISAGREE	50.0%	16.7%	50.0%	38.9%
	STRONGLY DISAGREE	16.7%	33.3%	16.7%	22.2%
Total		100.0%	100.0%	100.0%	100.0%

One way ANOVA

Descriptive

QDS2

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
WOLLO	6	2.83	.753	.307	2.04	3.62	2	4
WOLDIA	6	2.83	.983	.401	1.80	3.87	2	4
BAHIRDAR	6	2.67	1.033	.422	1.58	3.75	1	4
Total	18	2.78	.878	.207	2.34	3.21	1	4

ANOVA

QDS2

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.111	2	.056	.064	.938
Within Groups	13.000	15	.867		
Total	13.111	17			

Question 4 on module development

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
QMD4 * respondent	75	98.7%	1	1.3%	76	100.0%

QMD4 * respondent Cross tabulation

% within respondent

		respondent		Total
		TECHER	STUDENT	
QMD4	AGREE	5.6%	3.5%	4.0%
	DISAGREE	50.0%	50.9%	50.7%
	STRONGLY DISAGREE	44.4%	45.6%	45.3%
Total		100.0%	100.0%	100.0%

T-Test

Group Statistics

	respondent	N	Mean	Std. Deviation	Std. Error Mean
QMD4	TECHER	18	3.39	.608	.143
	STUDENT	57	3.42	.565	.075

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
QMD4	Equal variances assumed	.076	.783	-.207	73	.837	-.032	.156	-.342	.278
	Equal variances not assumed			-.199	26.949	.844	-.032	.162	-.364	.299

Use of the Internet from mode of delivery

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
INTERNET * respondent	75	98.7%	1	1.3%	76	100.0%

INTERNET * respondent Cross tabulation

% within respondent

		respondent		Total
		TECHER	STUDENT	
INTERNET	MEDIUM	11.1%	5.3%	6.7%
	LOW	50.0%	56.1%	54.7%
	POOR	38.9%	38.6%	38.7%
Total		100.0%	100.0%	100.0%

T-Test

Group Statistics

	respondent	N	Mean	Std. Deviation	Std. Error Mean
INTERNET	TECHER	18	3.28	.669	.158
	STUDENT	57	3.33	.577	.076

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
INTERNET	Equal variances assumed	.403	.528	-.342	73	.733	-.056	.162	-.379	.268
	Equal variances not assumed			-.317	25.506	.754	-.056	.175	-.416	.305

Question 8 on assessment practice

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
EV8 * respondent	75	98.7%	1	1.3%	76	100.0%

EV8 * respondent Crosstabulation

% within respondent

		respondent		Total
		TECHER	STUDENT	
EV8	STRONGLY AGREE	11.1%	1.8%	4.0%
	AGREE	50.0%	5.3%	16.0%
	DISAGREE	38.9%	59.6%	54.7%
	STRONGLY DISAGREE		33.3%	25.3%
Total		100.0%	100.0%	100.0%

T-Test

Group Statistics

	respondent	N	Mean	Std. Deviation	Std. Error Mean
EV8	TECHER	18	2.28	.669	.158
	STUDENT	57	3.25	.635	.084

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
EV8	Equal variances assumed	.343	.560	-5.568	73	.000	-.968	.174	-1.314	-.621
	Equal variances not assumed			-5.415	27.364	.000	-.968	.179	-1.334	-.601

Overcrowded curriculum from hindering factors

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
CURRICULUM * respondent	75	98.7%	1	1.3%	76	100.0%

CURRICULUM * respondent Crosstabulation

% within respondent

		respondent		Total
		TECHER	STUDENT	
CURRICULUM	HIGH	50.0%	45.6%	46.7%
	MEDIUM	44.4%	40.4%	41.3%
	LOW	5.6%	14.0%	12.0%
Total		100.0%	100.0%	100.0%

T-Test

Group Statistics

	respondent	N	Mean	Std. Deviation	Std. Error Mean
CURRICULUM	TECHER	18	1.56	.616	.145
	STUDENT	57	1.68	.711	.094

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
CURRICULUM	Equal variances assumed	.672	.415	-.690	73	.493	-.129	.187	-.500	.243
	Equal variances not assumed			-.744	32.583	.462	-.129	.173	-.481	.224

Declaration

I, the undersigned, Moges Logaw, declare that **'Modularization and the Practices of Module Development in Selected Ethiopian Universities'** is my own work and that all the sources that I have for this dissertation have been duly acknowledge.

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Moges Logaw Date