PROCEDURES AND METHODS OF CURRICULUM DESIGN, DEVELOPMENT AND IMPLEMENTATION IN INSTITUTIONS OF HIGHER LEARNING

EDITED BY

ZAKARI MOHAMMED
AND
UMAR IBRAHIM

PUBLISHED BY RESEARCH AND CURRICULUM DEVELOPMENT UNIT,
CARNEGIE COOPERATION PROJECT, AHMADU BELLO UNIVERSITY, ZARIA

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FORWARD

The goals of Research and Curriculum Development Unit (RCDU) of the Carnegie Corporations Projects in Ahmadu Bello University (ABU), Zaria include among others the need to:

I. strengthen postgraduate teaching and research for the enhancement of the University's capacity for postgraduate programme design, delivery and management;

II. enhance the University's capacity for creativity in responding to global and national changes in knowledge acquisition and utilization as well as the needs of the Nigerian labour force; and

III. prepare the University academic staff and postgraduate students for life-long intellectual pursuits and professionalism

In its efforts to achieve these goals, the RCDU organized workshops on procedures and methods of curriculum design, development, implementation and evaluation. It is the outcome of these workshops that culminated into the publication of this book by the Carnegie Corporations Project, Ahmadu Bello University to serve as reference material on curriculum for the use of the Nigerian university community and the general public.

Considering the rich content of the book vis-à-vis the caliber of the contributors, I am confident that this book will be of great assistance to the academic staff and students for shaping and re-shaping the curriculum of our educational institutions to respond positively to the changing needs of our society. I strongly recommend the use of this book in our educational institutions.

Professor S. U. Abdullahi, OFR,mni
Vice-Chancellor, Ahmadu Bello University, Zaria
2006

PREFACE

The basic mission of the postgraduate programme in Ahmadu Bello University I believe is to prepare students for life-long intellectual pursuits and professionalism especially through advanced and specialized programmes of study. In order to meet the needs of 21st century Nigeria and indeed the world, the University has planned to strengthen its academic programmes particularly at the postgraduate level through quality teaching and research as well as capacity building. This informed the University's request for financial assistance from the Carnegie Corporation of New York in 2004 which was gladly provided.

The Research and Curriculum Development Unit (RCDU) was therefore established under the Carnegie Corporation Project in the University to actualize its strategic plans and goals for the strengthening of postgraduate teaching and research as well as for capacity building.

The strategic objectives of the RCDU are to ensure the:

i. Availability of postgraduate structures and pro0cedures capable of greater efficiency and with capacity for creative and responsive postgraduate programme design, implementation and delivery.

ii. Review of existing postgraduate programmes and expansion of types of programmes and the creation of capacity in the postgraduate school as well as within the academic departments for teaching, research, curriculum development and effective planning and monitoring.

iii. Enhancement and upgrading of teaching and research facilities in academic departments, institutes and centres especially in selected areas of proven institutional strength and public needs.

iv. Research results and postgraduate academic endeavours within and outside the university.

v. Preparation of periodic reports and studies on the issues relating to postgraduate activities in the University for the Consideration of the relevant Ahmadu Bello University officers and authorities.

In order to facilitate the achievement of these objectives, the RCDU is divided into 3 sub-units:

1. Curriculum Design and Development sub-Unit
2. Capacity Building, linkages and Exchange sub-Unit
3. Publication and Information Management sub-Unit

This publication is indeed the result of one of the numerous activities organized to facilitate the achievement of the Research and Curriculum Development Unit (RCDU) objectives and the Carnegie Corporation at large. It is my hope that you will use this opportunity to develop yourselves for your own good and for the good of the University and mankind.

Professor Zakari Muhammad, FNLA, FNIM
Coordinator, RCDU

ACKNOWLEDGEMENT

We are most sincerely grateful to the Carnegie Corporation of New York for its financial support and keen interest in academic pursuit. Your support has no doubt rekindled the intellectual tradition of which this great University is known for. The publication of this book is evidence.

We are also grateful to the Vice-Chancellor, Professor Shehu U. Abdullahi, mni for his concern and support not only to Research and Curriculum Development Unit (RCDU) but to the overall programmes of donor agencies and the University.

To our resource persons and keen participants at the various workshops held, we most sincerely appreciate your zeal and contributions.

Lastly, we thank all members of the various sub-committees of the Research and Curriculum Development Unit (RCDU) for your untiring commitments to the realization of the Carnegie Corporation Project despite your tight schedule and other engagements.

Dr. Umar Ibrahim

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1.0 INTRODUCTION

One of the major challenges facing postgraduate studies in most academic institutions globally is responding to new needs and new perspectives in the ever-changing society.

Ahmadu Bello University, Zaria like any other university has many postgraduate programmes springing up to reflect global changes, the changing needs of the country as well as meeting the aspirations of graduates in Nigeria who may wish to come for postgraduate studies. This calls for the need for departments to demonstrate commitment to making their programmes more relevant and attractive through improving the design of postgraduate curriculum.

This paper aims at fulfilling one of the objectives of the curriculum design and development unit of the Ahmadu Bello University, Zaria that is to facilitate curriculum design, development and implementation in academic departments.

What is a Curriculum?

The word curriculum has been defined by different people at various times and places in different ways. It is derived from a Latin word meaning, "a runway, a course through which one runs to reach a goal". (Onwuka, 1985) The meaning of curriculum has however changed with time. The various definitions of curriculum span from the primitive definition which views curriculum as a collection of syllabus or the subjects to be taught in schools to more articulated definitions.

Onuoha (1986) defines curriculum as a school's plan for all the learning experiences the learner is expected to engage in under the guidance of the school. Curriculum has come to include the total environment in which education takes place.

As educators broadened their view they progressively review the concept of curriculum whereby the concept is no longer limited to the subjects studied in school. It has come to embrace all the activities that were referred to as extra curricula.

The term curriculum however as preferred by other authors, such as Onwuka 1988, can be replaced with the term educational programme which consists of three basic elements:

1) Programme of studies
2) Programme of activities
3) Programme of guidance

Thus, curriculum is the sum total of experiences offered by the school.

Types of Curriculum

There are various forms of curricula in schools. These include:

1. **The explicit or formal curriculum** - which includes syllabi describing courses, test, curricular materials and subject area standards and objectives

The explicit curriculum has two functions:

- to preserve and transmit to students the culture and tradition of the pas
- to anticipate the knowledge, skill and abilities that today's students w need in order to function effectively in tomorrow's society.

It should be noted that today most educators regard the formal curriculum as t organization of intended outcomes for which the school takes responsibility.

2) **The extra curriculum or co-curriculum.** This includes students' activit such as sport, club student's government and school newspap computers, debate etc enhance not only academic skills but social skills well. These activities are regarded so important that they are not c referred to as extra curriculum but as co-curriculum.

3) **The implicit or hidden curriculum** – emerges incidentally from interaction between the students and the physical, social and interperso environments of the school. The Hidden curriculum may be desirable undesirable. It could be a vehicle for moral growth. The hidden curriculum emanate from teacher to students or student to student. It is useful to asse this point that making the distinction between the formal curriculum and the hidden curriculum is a major criterion for a formal educational process. This is because studies have revealed that hidden curriculum in higher education if not taken seriously can affect the curriculum of higher education. For example, Cleck (1960) in Andres (2004) describes the hidden curriculum in its most pernicious form. According to Andre an open door policy of community colleges, which overtly promise the ultimate attainment of university degrees to its client, has its hidden purpose of encouraging students to abandon their plans of transferring to university and instead accept a terminal curriculum.

Similarly, Daugherty (1989) in Andres (2004) explains how community college entrance hinders the educational attainment of baccceloure (last Secondary Examinations for France) aspirants. He describes as three key processes, which created a funnel-like structure to militate against transfer to degree granting institution and subsequent degree completion. This process created problems that affected transfer and thus affect the institution in several ways such as low academic selectivity and prestige, lower expectations of instructors and credit loss suffered in the transfer process. These factors prevent large numbers of students who begin in community colleges from the successful attainment of their goals.

Academic staff should find a way of exposing these hidden curricula and replace them with transformation and transgressive curricula, teaching and policies that will ensure a good postgraduate curriculum design that would be successful and lead to the attainment of goals.

New Directions for the Curriculum

Technological developments have shifted the focus of most advances and developing countries' economy from the production of goods (industrial) to information processing (post industrial) as new careers in technology, computer and communication emerge. This accelerated rate of change has great impact on the school curriculum. In addition, the tremendous knowledge explosion has produced more information than schools can teach. This may in term lead to the belief that schools need to turn away from the traditional curriculum and emphasize on the thinking skills needed in the new information society.

What are these more relevant thinking skills? Sadker (2003) identifies "thinking operation" as that which lays emphasis on developing critical thinking skills; things should be taught directly by comparing, interpreting, observing, classifying, decision making, creating and criticizing.

However, most academics would argue that the ideal purpose of their teaching is to foster a critical appreciation of ideas, creativity and independence of thought. It is not the lecturer that will encourage such higher disposition rather it is the design and conduct of assessment of our postgraduate programme.

Designing a Post Graduate Curriculum

Curriculum design involves thinking about what it is the teacher wants students to learn, how the teacher can make these goals clear to the students, and how the students' own experiences might be an advantage or disadvantage to their capacity to learn.

Designing a curriculum according to Hilda (1967) involves the following:

1) **Diagnosis of Need**

Every human society is dynamic rather than static. A society constantly changes in terms of needs, value and goals of its members. The fact that every society is constantly changing means that if education is to serve its cause in a society, the school curriculum has to be in line with the societal need and of course the individual needs.

The needs and experiences of the students are sometimes under-presented in the design and delivery of postgraduate programmes. The experience and expertise of tutors are often more critical to the development of postgraduate curricula than the experiences of students. However, identifying the characteristic of prospective learners is a fundamental first stage in programme design. Most of the postgraduate students apply for postgraduate studies so as to enhance

their knowledge and skills and in addition enhance their career potentials. Thus we need to be aware of our likely students and consider how the curriculum is going to attract such students.

A good starting point is to check the background of our students in terms of:

- Entry qualification e.g. their 1st degree
- Previous education –e g state university, overseas
- Their work experience
- Their familiarity with IT
- Do they have reasonable study skill
- Know what career they are aiming for.

It is only by so doing that we can make our post graduate studies relevant to the need of the learner. Those designing a postgraduate curriculum need to be aware of the career destination of its student. Note that, graduate destinations are a key programme indicator used by the government and by potential applicants.

If your programme is not related to a specific professional area then those designing the curriculum should be able to demonstrate that the curriculum develops generic skills that will enhance employability. We should ask ourselves if employability and career work are integrated into the curriculum. Timely and effective careers management skills integrated into the postgraduate curriculum of post graduate studies can raise aspirations and increase motivation as students can see clearly the relevance of the activity to the world of work. By so doing, it would help in reducing graduate under-employment as commonly observed in Nigeria today.

2. **Formation of Objectives**

In every post graduate programme of study there must be intentions, which are normally described as goals, purpose, objectives and aims. Aims are broad; they are general expression of intension of purpose. They provide guidance on the overall direction or thrust of the programme. They contribute logical starting points for topic design. Objectives are of **two** different categories: general objectives and specific objective. The **general** objectives are the school-wide outcomes, e.g development of critical thinking skills. While specific objectives answer the question what will the pupils **be doing** at the end of a course of instruction?

Once we are clear about what we want **to** achieve we can then make decisions about how we will achieve it. **Importantly**, when selecting objectives we must consider the following factors:

- Analysis of culture
- *The present status of the students*
- The relevance of the objectives to the school philosophy of education
- The consistency of these objectives **with** the theory of learning.
- What we know enough about to teach.

3) Selection of Content

This involves the selection of subject matter **if** *we like the selection of subject units and* topics *e.g course* outline in a **subject.**

If the curriculum is to be a plan for learning, its content needs to be carefully selected so that they serve the educational objectives. Selection of content for postgraduate studies should satisfy the following criteria-**validity, significant, utility, interest** and **learn ability.**

4) Organization of Content

After the contents to be included in the curricula have been selected they need to be organized in such a way as to produce major changes in the learner in the direction of stated educational outcome. Organization is a crucial task in designing a curriculum because it greatly influences the efficiency of instruction and the achievement of learning that takes place. The criteria for effective organisation are:

- There should be continuity
- Establish a sequence
- Integration

5) Selection of Learning Experiences, methods techniques for achieving *identified* objectives

Learning experience refers to the interaction between the learner and the external condition in the environment to which he can react. These learning experiences can be categorized into three: mental, physical and emotional experiences.

The selection of learning experience takes place after the content of postgraduate programme has been carefully selected ie after the syllabus has been drawn up. The following criteria would help in the selection of learning experiences.

- Validity
- Relevance to life
- Variety
- Suitability

6) Organization of Learning Experiences

After the learning experiences to be included in the programme have been selected, *they need to be organized in such a way that they would produce* major changes in the learner in the direction of stated education outcomes. It is important to note that the achievement of educational objectives usually takes a long time. A single learning experience, which a student undergoes, will not have much effect on him/her, he/she has to go through a number of experiences to buttress and reinforce learning.

Criteria for effective organization of learning experience include continuity, establishing a sequence and integration. Integration in this case refers to the utilization of curriculum element from one subject area to another subject area of the curriculum, so as to buttress learning.

7) **Determining procedure for Evaluation**

This is the final stage of curriculum design. It is the process of determining the nature and extent of changes in the behaviour of students after a course of study. It answers the question - is it worthwhile to devote time to learning the materials included in the programme.

- Do the educational materials reflect recent developments and contemporary ideas in a given field of intellectual or scientific behaviour?
- Are the study materials free from obsolete concepts and ideas?
- Has the student actually acquired the facts, knowledge, skills, attitudes, beliefs and values intended?
- Did the selected content contribute effectively or would other contents have been more suitable?
- What sort of concomitant learning resulted from the organization used?
- Under the prevailing system of teaching and learning conditions can the new programme be successfully implemented?
- Will the students master certain skills as a result of the programme etc?
- Measures of how far the student has come and how he/she still has to go are fundamental to curricula decisions.

However, Taba's curriculum design (figure 1) is represented as a cycle

Figure 1

Basic Requirements in Designing Postgraduate Curriculum

In designing postgraduate curriculum we need to consider the following requirements:

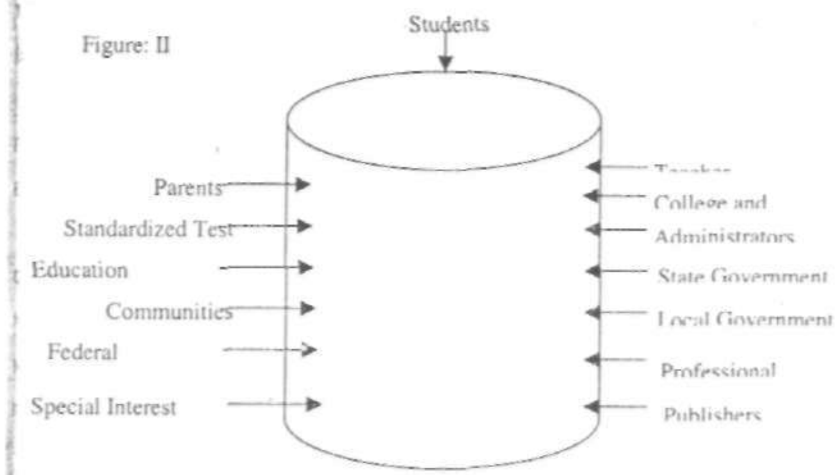
- Course requirement – what to teach and the content
- Costs – knowing the cost implication helps us to map out strategies for sourcing for funds to make the postgraduate programme viable
- Staff requirements - Do you have qualified staff that can properly handle the course content? Note that teachers work collaboratively rather than in isolation. When lecturers work together as professional team they ensure that all the standards are met. What are the staff needs etc?

- Learning environment — like classroom, labs, etc affect the design and delivery of the programme
- Material requirement- Are there opportunities for students to mix, to work together on problems/tasks, to network electronically, to use wide range of researches? Do we use ICT which can help students learn at their own pace and can provide opportunities to interact with curriculum materials and with each other?
- Stakeholder demands - the stakeholders of postgraduate programmes are now assuming a stronger role in determining curriculum needs and development, thus, we need to modify and implement new approaches and ideas to make our programme acceptable and relevant to our local needs.
- Government Directives – the federal government influences the curriculum through school related legislation and national educational goal. In designing postgraduate curriculum therefore, we need to consider government directives.

Who and What Shape the Curriculum

Different group can influence the curriculum. Below is a pressure cooker of different interest groups that shape the curriculum:

Figure: II



Source: Sadker and Sadker (2003)

Reflection: What groups exert the most influence? Do you see all these groups as a mere of democratic participation, or an inappropriate intrusion in curricular decision-making?

Gender and Curriculum

Those engaged in designing curriculum for postgraduate programmes should develop relevant curriculum that females will be attracted to and benefit from the curriculum. This curriculum should be relevant to their lives; it should seek out their potential in the given settings and at the same time eliminate gender stereotyping. In designing postgraduate curriculum the unit, lesson and even the entire programme should focus around the needs and contribution of women because this aspect has been omitted in the past.

Recommendation

In a time of continuous economic, social and technological change, skills and knowledge become out of date. The curriculum for any post graduate studies should first and foremost be seen responding to new needs and new perspectives. Thus, we should think globally and act locally.

Secondly, academic staff involved in designing curriculum for postgraduate programme should be seen to be exploring the future, setting the context for what to teach and how to teach, while we bring our curriculum to international level.

Thirdly, in designing a curriculum, we must establish and maintain enhanced quality and standards through relevant competency-based curricula and effective quality control at the post graduate level.

Fourthly, as more postgraduate programs spring up in Ahmadu Bello University, Zaria there is need for departments to demonstrate their commitment to make their programme more attractive and relevant to the needs of our graduates. This calls for a review of existing postgraduate programmes in almost all the departments.

Conclusion

Education is like fashion and design" a mirror of changing styles, taste and public opinion. It is high time the curriculum emerges from research and reasoning not from popular opinion. Let us be seen researching on contemporary issues while we redesign our post graduate programmes to meet the demands identified within the society. This will make our programmes relevant to the needs of the individuals and society.

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2. PRINCIPLE AND METHODS OF CURRICULUM IMPLEMENTATION

2.0 INTRODUCTION

According to Marsh (2004), curriculum starts as a plan. It only becomes a reality when teachers implement it with real students in a real classroom. Careful planning and development are obviously important, but they count for nothing unless teachers are aware of the product and have the skills to implement the curriculum in their classrooms.

And as further noted by Fullan (1999) and Scott (1999), a curriculum, however well designed, must be implemented if it is to have any impact on students. Although this is obvious, there are thousands of curriculum documents now gathering dust on storeroom shelves because they were never implemented or because they were implemented unintelligently. The obvious importance of curriculum implementation has not necessarily led to widespread understanding of what it entails or of what is problematic about it.

The term 'implementation' refers to the 'actual use' of a curriculum/syllabus or what it 'consists of in practice' (Fullan and Pomfret, 1977). It is a critical phase in the cycle of planning and teaching a curriculum. Adoption of a curriculum refers to somebody's intentions to use it, be it a teacher or a head office official, but it does not indicate whether the curriculum is implemented or not.

Implementation refers to actual use, as outlined above, but there is also an important 'attitudinal' element. In education systems where teachers and principals have the opportunity to choose among competing curriculum packages (i.e. acting as 'selectors') then attitudinal dispositions are clearly important. For example, if a teacher perceives that the current curriculum he or she is using is deficient in certain areas, and then an alternative will be sought which overcomes these problems. Leithwood (1981) maintains that teachers will only become involved in implementing new curricula if they perceive a dysfunction-they have a

desire to reduce the gap between current and preferred practices, with reference to their teaching in a particular subject.

But for many subjects, a revised or new curriculum is produced to be used by teachers in all schools in a school district and no choice is available. There is no opportunity for teachers to consider alternatives. Their task is to find out how to use the new curriculum as effectively as possible. In these circumstances, the dominant implementation questions for the teacher might be:

- How do I do it?
- Will I ever get it to work smoothly?
- To whom can I turn to get assistance?
- Am I doing what the practice requires?
- What is the effect on the learner?

This emphasis on how to use a new curriculum is a major concern for teachers because as 'craft specialists' they gain most of their intrinsic satisfaction from being successful in using a particular approach and material with their students. However, the implementation of any new curriculum will take a teacher a considerable period of time as he or she needs to become competent and confident in its use. It is only when a new curriculum is completely accepted by teachers in a school and the activities associated with it are a matter of routine, that the 'institutionalization' phase is said to have been reached.

Nonetheless, some writers (for example, Snyder et al., 1992) argue that the idea of institutionalization unduly implies that the curriculum is something concrete and static. These writers suggest that 'curriculum enactment' is a more useful way of describing the ongoing process of implementation because it emphasizes the educational experiences that students and teachers jointly undergo as they determine what the curriculum will be like in each classroom.

There is also the matter of commitment to change (Cuban, 1992). Not all teachers will automatically accept the notion that a newly proposed curriculum is not what they should use, nor will all want to use it with their students (Fullan and

Hargreaves, 1991). Most would no doubt welcome the opportunity to choose among several alternatives. In fact, some teachers might be perfectly satisfied with their existing curriculum. In situations where teachers have no choice about whether or not to use a new curriculum, they may embrace the new curriculum with enthusiasm, becoming what is known as 'consonant' users (willing to conform to the new curriculum), or they may be reluctant, making considerable alterations in the curriculum, thus becoming what is known as 'dissonant' users (unwilling to conform). In extreme cases, a dissonant user may erect a façade of compliance while adopting Machiavellian tactics to resist or even to undermine the new curriculum. Again, the attitudes of individual teachers are extremely important in implementation.

Some subjects in schools are considered to be important core areas and are given detailed treatment in syllabus documents. For these subjects, teachers may be expected to cover particular content and to follow a certain instructional sequence. The term used for this adherence to prescribed details is 'fidelity of use'. Alternatively, there may be other subjects where teachers can exercise their creative flair and implement very special, individual versions of a curriculum. This is then termed 'adaptation' or 'process orientation'.

When implementing the curriculum, the teacher needs to consider:

- How to teach students to develop, refine and adapt skills so that they can be applied in different contexts and activities
- How to enable students to develop aspects of their fitness, health and well-being, as well as their knowledge and understanding of why it is important to be active and safe
- How to enable students to decide which skills, tactics, and compositional ideas and devices they can select from and apply to make their performance effective
- How to help students see the relationship between skills, tactics, and compositional ideas and devices

- How to help students evaluate the quality and impact of their work in each aspect so that they can decide how to improve.

Factors Affecting Implementation

Several education experts have produced very useful insights about implementation and the relative success of it in schools. In the early 1980s Fullan (1982) produced a list of factors affecting implementation, which is frequently quoted in the literature. These factors refer to the attributes of the innovation or change, characteristics of the school district, characteristics of the school as a unit, and factors external to the local school system. A wideranging list of factors is provided in Table 7.2 based on the experiences of a project developer (Parsons, 1987).

House (1979) uses three perspectives (technical, political and cultural) to explain how and why certain implementation practices have occurred over the decades. The 'technical' perspective assumes that systematic planning and a rational approach can overcome typical teacher problems of lack of time and expertise. The 'political' perspective recognizes that rational behaviour is limited in practice and that it is the balance of power among parties that determines whether curriculum implementation efforts will be successful or not. The 'cultural' perspective emphasizes cultural transformation as a major factor in determining the success or otherwise of implementation endeavors. It is the deeply ingrained beliefs and values of stakeholders, which are socially shared and shaped, which ultimately affect what happens in classrooms. The specific factors affecting implementation are outlined in Table 1 (from Fullan (1982, p. 56).

Table 1: Factors affecting implementation

A	***Characteristics of the change***
1.	Need for and relevance of the change
2.	Clarity
3.	Complexity
4.	Quality and practicality of programme (materials, etc.)
B	***Characteristics at the school environment level***
5.	The history of innovative attempts
6.	The adoption process
7.	Central administrative support and involvement
8.	Staff development (in-service) and participation
9.	Time-line and information system (evaluation)
10.	Board and community characteristics
C	***Characteristics at the school level***
11.	The principal
12.	Teacher-teacher relations
13.	Teacher characteristics and orientations
D.	***Characteristics external to the local system***
14.	Role of government
15.	External assistance

While these factors affect implementation at a broad level, other series of factors affect successful implementation at an individual level. These are identified in Table 2 (Marsh 2004 p. 68).

Table 2: Some important factors for the promotion of successful implementation practices

1.	Time to experiment; for attitudes to change
2.	A technology for change: a phased plan of action is needed
3.	Recognizing school culture: awareness of situational conditions
4.	Provision of incentives and rewards: time, resources, materials
5.	Sharing of the burden in the workplace: to collaborate and to share
6.	Releasing energy for innovation: creating the right conditions
7.	A collaborative framework: the value of local collaborative groups
8.	Leadership: persons to coordinate and to lead
9.	Recognizing system-level culture: awareness of overall policies
10.	A political perspective: keeping visible with stakeholders
11.	Winning allies: gaining legitimacy and support in a region and within schools
12.	Recognizing the role of individuals: commitment and charisma are essential qualities

Marsh (2004) further contends that in a study of implementation practices in seventeen US schools, Corbett and Rossman (1989) noted that there were segments of technical, political and cultural at all sites and that where change strategies addressed all three there was increased implementation success.

McLaughlin (1987) found that the efforts by federal or state officials to promote successful curriculum implementation in local schools depended on what she describes as 'local capacity', 'motivation and commitment', 'internal institutional conditions' and 'balance between pressure and support'. The local capacity to implement an innovation can be improved by increasing financial support and the training of teachers, as long as these increases are significant and continue over a period of years. The motivation and commitment of teachers and administrators is more difficult to improve. Doing so depends on the values of local leaders and their assessment of the relative worth of a particular innovation. However, on some occasions the involvement of local leaders in a project leads directly to greater commitment (Fullan, 1986). McLaughlin (1987) also reported that the structures and policies within schools and the relative stability and support for teachers could have a major effect upon their willingness to implement new curricula. That is, the internal institutional conditions have to be conducive to change. Furthermore, some balance between pressure and support is essential. Pressure is required to focus attention on a specific innovation, and it provides the necessary legitimacy to embark on a new project. But support, whether financial or in the form of expert assistance, is also required to get the project started.

McLaughlin (1987) further argues that implementation is not about transmitting what has previously been agreed, but about bargaining and transformation. Implementation must be framed in terms of individual actors' incentives, beliefs and capacities-a point also confirmed by Werner (1987), Crandall (1988) and Lewis (1988).

Nonetheless, there appears to be a return to a more rigid view of curriculum implementation. The increasing interest in the United States in educational standards and school indicators has seen more explicit listings of requirements for teachers in implementing their respective curricula. Examples are Porter (1993), who argues for school standards for the delivery of the enacted curriculum and cites the professional standards for teaching mathematics developed by the National Council for Teachers of Mathematics:

Blank (1993), who describes indicators based on student outcomes, instructional time, curriculum content, teacher quality, and school conditions and resources; and Schmidt et al. (1996), who urge for the adoption of a multicategory curriculum framework for measuring the alignment of various elements of implementation.

Problems of Describing/Measuring Implementation

Attempts to describe the implementation of new curricula are fraught with all kinds of difficulties. For example, do you focus upon the curriculum materials, or what the teacher is doing, or what the students are doing? If the intention is to try to do all three things, what criteria do you use to select instances of each, since they are all occurring simultaneously in the classroom? Are there optimal times to examine how a curriculum is being implemented, such as after 6 months of operation, or a year, or even longer?

Trying to measure degrees of implementation is even more difficult than trying to describe it. Decisions have to be made about what kinds of data should be collected, such as observational data; document analysis or self-report data. Measurement data also tend to have a punitive air about them and so this can lead to concerns about who is doing the measuring and who is to receive the results.

Measuring Student Activities and Achievements

A major reason for producing a new curriculum is to provide better learning opportunities for students, such as higher achievement levels in terms of particular understandings, skills and values. Rarely is it possible, however, for measurements to be obtained on student achievements so that it can be stated unequivocally that a new curriculum is superior to the previous one, in terms of particular dimensions. There are so many confounding variables, which affect student scores. A single test is unlikely to be suitable for use and to be able to provide valid and reliable comparable data between a new curriculum and the previous one.

Despite the lack of empirical evidence linking testing with student achievement, high stakes testing of students became a political priority in the USA during the 1990s (Nave et al., 2000), and there is pressure from some quarters for a single national test for all students (Porter, 1993). A differing point of view holds that a more promising development is authentic assessment of student learning, such as through the use of portfolios of student work or through increasingly sophisticated ways of measuring problem-solving, reasoning and critical thinking (Resnick and Tucker, 1992).

Measuring Use of Curriculum Materials

In most teaching programs, curriculum materials figure prominently in the day-to-day activities undertaken by the teacher and students. In fact, surveys have revealed that school students can spend up to 80 per cent of their time engaged with particular curriculum materials (Cornbleth, 1990).

It is clearly important in any study of implementation to gather information about how curriculum materials are used. Some of the curriculum materials analysis schemes developed in the 1970s provide convenient criteria for evaluating curriculum materials (for example, Piper, 1976; Eraut et al., 1975). However, these schemes are often very time-consuming to complete and tend to emphasize the characteristics of the curriculum materials in isolation.

During the 1980s more attention was paid to developing checklists, which provide ratings of curriculum materials 'in use' (for example, the Innovations Configuration developed by Hall and Loucks, 1978; and the Practice Profile developed by Loucks and Crandall, 1982).

The Innovations Configuration (IC) describes the different operational forms of an innovation that result as teachers implement it in their classrooms. The checklist can be structured to indicate the variations that are considered to be ideal, acceptable and unacceptable uses of an innovation (Hord and HulingAustin, 1987).

The rapid growth in the use of the Internet by teachers and students has also spread numerous new ideas about what can be included in checklists of curriculum materials and how they can be used (Means 2001). In particular, the Internet has become a huge new resource for teachers and students (Molnar, 2000; Schofield and Davidson, 2000).

Measuring Teacher Activities

Various methods have been used over the decades to measure teachers' implementation activities, ranging from formal visitations to observation checklists, questionnaires, interviews and self-report techniques. In the USA, where implementation studies have been very extensively undertaken since the 1970s, observation checklists and rating scales are commonly used. In these studies, particular categories of behavior are determined in advance and used as the basis for the checklist items and rating scales. For example, self-report techniques are incorporated into the Stages of Concern (SoC), an instrument developed by Hall et al. (1977) and subsequently used widely in many countries, e.g. Hong Kong (Cheung 2002). The SoC model itself is outlined in Table 3 (from Cheung 2002).

Table 3: SoC Model of Teacher Curriculum Implementation

Stage	Label	Characteristics
1	Awareness	Little concern about or involvement with the innovation is indicated.
2	Informational	A general awareness of the innovation and interest in learning more detail about it are indicated. The person seems to be unworried about her/him in relation to the innovation. She/he is interested in substantive aspects of the innovation in a selfless manner such as general characteristics, effects, and requirements for use.
3	Personal	Individual is uncertain about tha demands of the innovation, her/his inadequacy to meet those demands; and her/his role

		with the innovation. This includes analysis of her/his role in relation to the reward structure of the organization, decision-making, and consideration of potential conflicts with existing structures or personal commitment. Financial or status implications of the program for self and colleagues may also be reflected.
4	Management	Attention is focused on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organizing, managing, scheduling, and time demands are utmost.
5	Consequence	Attention focuses on impact of the innovation on students in her/his immediate sphere of influence. The focus is on relevance of the innovation for students, evaluation of student outcomes, including performance and competencies, and changes needed to increase student outcomes.
6	Collaboration	The focus is on coordination and cooperation with others regarding use of the innovation.
7	Refocusing	The focus is on exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative. Individual has definite ideas about alternatives to the proposed or existing form of the innovation.

The SoC focuses upon teachers' feelings as they become involved in implementing an innovation. These will vary in both type and intensity. Hall et al. (1977) argue that there are definable sets of major stages of concern and that as teachers become involved in implementing an innovation they will move developmentally through these stages.

Implementation of Change in Higher Education

So far our discussions have looked at generalized patterns of curriculum implementation – or more precisely implementation of curriculum change. Most of the focus of the studies cited tended to basically apply to pre-tertiary

environments. The situation at higher education environments is somewhat different, although sharing the same fundamental principles. Baldridge (1972) contrasts two broad approaches to organizational change; the human relations approach and the political systems approach. Curriculum change at a higher institution faculty level demands some form of human relations perspective to effect change.

The three best known strategies for effecting change in human systems are those described by Chin and Benne (1961); the rational-empirical, normative reeducative and power-coercive. The rational-empirical approach assumes that intelligent people are rational and reasonable, and that once sound arguments for organizational change are presented to them they will adopt the change proposal. In contrast, the normative re-educative set of strategies assumes that the average person is driven by impulse and need satisfaction. Those committed to this strategy see the person as the basic unit of social organization and change. Such people want to know 'what's in it for me?' Unless they detect opportunities for personal gain they are unlikely to support change. Power-coercive strategies, however, emphasize political and economic power as the means by which to achieve change. Such power may come in the form of sanctions on those who flout the rules and moral power that plays on the sentiments of guilt and shame. Typical of a more autocratic and dictatorial leadership style, the power-coercive approach attempts to legitimize certain courses of action. Those responsible for effecting curriculum change in a university faculty need to be well aware of the three strategies and to determine the right 'strategy-mix' for their context. Many curriculum innovations have fallen by the wayside for lack of attention to the process of change itself (for example see Cochran, 1971; Wideen and Holborn, 1984; Kelly, 1966 and Boser and Hill, 1990).

Wideen and Holborn (1984) conducted an interesting analysis of the process of curriculum change at Ten Canadian University faculties. They conclude that changes emanating from within the faculty are "rarely paradigmatic but rather incremental and all too frequently inconsequential". They identify five factors which must all be operative if change of any magnitude is to occur within a faculty:

- *The presence of external influences.* External pressures for change may come from government legislation, commissioned reports, professional groups or linkage groups (linkage groups are indirect influences that come from conferences, journals, the media and other contacts). Hopkins (1980) argues that faculties exhibit an enormous ability to resist external influences, in part, because of academic freedom.
- *The exercising of power.* It is highly unlikely that faculty change can occur unless someone or some group is in a position to exercise power in support of the change.
- *Shelter conditions.* University academics are trained to question and criticize; such criticism can effectively destroy any emerging ideas that are seen to threaten the status quo. 'Shelter' conditions are necessary to blunt such criticisms.
- *Role of key players.* Wideen and Holborn's research showed the importance of key individuals to champion faculty change. Often this involved different key players, those who initiated the change and those that actually implemented the innovation.
- *Receptive faculty and students.* Not only must faculty staff be well disposed towards change but students will also exert a powerful influence in determining the success of an innovation.

Boser and Hill (1990) argue that three further factors are critical to the success of curriculum change. The first of these is that the various stakeholders recognize the benefits. For faculties this involves the university as an institution, academic and general staff, the students, professional organizations, employees and even parents of the students. Secondly, faculty structure needs to change to

accommodate the new curriculum and perhaps individual work roles accordingly. Thirdly, the relationship of the faculty with the community environment in which it operates needs to be a positive one.

More recently some research into changes in higher education has focused on ethnographic studies of cultures within universities. Trowler (1998) identifies four ideological positions: traditionalism, progressivism, enterprise and social constructivism. Traditionalists view universities as elitist in nature with academics as the custodians of the cultural, research and disciplinary heritage of society. Progressivists reject elitism and advocate universities being open to all comers in order to overcome inequalities imposed by an unjust social system. Enterprisers are career oriented; the university exists to develop human capital and must equip students with skills. Teaching is more important than research. Finally, social reconstructivists claim universities are about encouraging social change and are, therefore, change agents. One outcome of such studies is to highlight the difficulties that faculties and universities have when their staff hold diametrically opposed ideological perspectives about what universities are about. Understandably, innovation and major change may not be achievable if there is no shared 'culture' amongst academic staff.

Concluding Comments

Guskin (1996) believes academics can be their own worst enemies. Academic freedom is so entrenched and academics have been rewarded and supported for so long in their present behaviors that for many it is extremely difficult, if not impossible, now to change. As Guskin says, "The longer we analyse the current ways of operating, the further we fend off that awesome day when we will have to change something. Analysis thus becomes a defensive maneuver to avoid making fundamental change." Yet, says Guskin, universities are in the midst of unprecedented change and survival is the name of the game. Universities, and each of their faculties, must adopt internal change (or have it imposed) if they are to maintain a sense of integrity, autonomy and dignity.

Strong academic leadership is important but substantial curriculum and structural change must in the end be based upon cooperation between all the members of the faculty.

How a planned curriculum is implemented as the enacted curriculum in any school is a complex process that can vary enormously from school to school. The only certainty about curriculum implementation is that there is no one right way of going about it for all teachers in all schools. The ongoing issues concerning curriculum implementation are not likely to be resolved, but in recent years there has been growing awareness of the complexity of the process, and hence more reason for both caution and guarded optimism.

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3. DEVELOPING RESOURCES MATERIALS FOR EFFECTIVE CURRICULUM IMPLEMENTATION

3.0 INTRODUCTION

The ability of any postgraduate curriculum to successfully achieve the set goals of the programme and transfer learning to the students depends to a large extent on its implementation capacity. The skills, resources and technical know how of its workforce are critical components for the attainment of these goals. The quality of a postgraduate curriculum depends upon how well the individual components are constructed and how well they blend into a coordinated well designed comprehensive programme. This implies that in developing a postgraduate curriculum it should be seen as an ongoing and cyclical process. That is those developing a curriculum need to progress from evaluating the existing programme, to designing an improved programme, to implementing a new program, back to evaluating the revised program. (http://wwwte-mat)

The purpose of this paper is to provide some general instruction to academic staff on the resources and material components needed in the implementation of a postgraduate curriculum. However, attempt has been made to define curriculum implementation and elaborate on points to note to ensure effective implementation of the postgraduate programme of the Ahmadu Bello University.

Curriculum Implementation

Implementation according to Pinchas Tamir (2004) is the process of putting ideas and materials into practice. It involves the entire process, beginning with dissemination and ending with utilization and evaluation. Implementation in its general sense involves two additional processes, namely, adoption and adaptation. Adaptation refers to the decision to use a particular innovation. This decision is followed by actual utilization of the materials in the classroom while

adaptation is the process of modifying and further developing a programme by those adopting it.

Curriculum implementation can be defined as putting the new programme into practice. Ensuring that we perfect on how to keep the programme running smoothly and effectively by timely oiling and greasing it should do this. The curriculum developers have to consider the following in terms of implementation:

1. Use shared practice to support university wide goals for students. This entails:
    - Using university wide approach to implement curriculum, which encourages the development of a professional learning community that will in turn, foster commitment to a curriculum focused on shared goals for students. By so doing the university increases the coherence of its instructional programme.
    - Communicating the curriculum to students, teachers and parents. This is necessary in order to help teachers develop understanding through discussion on material lessons assessment and student works. Parents and students on the other hand learn about the curriculum through course outlines, letters from teachers and assessments.
    - Creating a supportive environment for curriculum implementation.

    The Vice Chancellor and other school leaders can help support curriculum implementation by serving as cheer leaders and empowering lecturers to make decisions. Lecturers implementing a new curriculum should be recognised for taking risk as well as for outstanding performances.
2. There is need to monitor curriculum and provide feedback to the stakeholders such as teachers, students and parents. This is necessary because stakeholders would need to know about new knowledge and skills that are offered in the university. School leaders using informed could do

g of implementation (e.g. conversation and formal processes ation, checklist, looking at student's work or tools etc). It ted that monitoring is a professional mechanism for ensuring *for curriculum implementation.*

o the need to *provide resources and other supports for* plementation. A successful implementation will not only help ch challenging goals, it will require the school to use resources pports well in order to reach ultimate goal which is to improve ns in the classroom (http:/wwwmcrd) In implementing here is need for partnership with consultants, and especially m Advisory Committee. The roles of these bodies are:

nts – Their roles include

velopment of institution guides and materials for units and urses

ovide professional development related to curriculum and struction through training programmes

nduct research on curricular issues and reflect research dings

lum Advisory Committee – (parents, teachers, business) Their roles include:

input and advice the department on curricular issues vis-à-vis ry demand of the labour market (Sadker, 2003).

venues to solicit for fund to acquire curriculum resource

alues of Curriculum Resource Materials

curriculum materials results in more effective learning of factual d skills in less time than mere verbalisation. For example M.D r series of investigation as to the value of still non-projected

pictures found that when graphic materials relate directly to the facts described in the text, these facts were more clearly remembered.

Similarly, when resource materials and devices are properly used, the following are accomplished:

1. *they make learning more permanent*
2. they generate students' interest
3. they stimulate self activity on the part of student
4. they develop a continuity of thought, this is especially true of motion pictures
5. they contribute to growth of learning and hence to vocabulary development
6. they supply a concrete basis for conceptual thinking and reduce meaningless word responses of pupils
7. they provide experience not easily obtained though other materials and contribute to the efficiency, depth and variety of learning Tyler (1971).

This implies that curriculum resources materials enhance learning. *Besides, teachers need to know that there is so much to learn in so little time that the utmost economy should be practiced in effecting resources. Materials provide the answer, because they are effective means of learning to understand in less time.* They also serve as a means of effective communication.

Importantly, the resources cannot achieve any of the attributed values on their own. Their usefulness depends on what the teacher makes out of them. Thus intelligent handling of these materials in the classroom is necessary (Onuka, 1985).

IDENTIFYING RESOURCE MATERIAL TO ASSIST POSTGRADUATE PROGRAMME IMPLEMENTATION

The resources material in any effective postgraduate curriculum implementation can be categorized into:

a) Human resources
b) Physical/material resources
c) Time and
d) Fund

The Human Resources

For effective curriculum implementation the quality of staff that would man the programme is very important. The role of the teacher in implementing the curriculum cannot be over-emphasised. As the implementer of the curriculum content, he/she is an authority in terms of inculcating the right type of knowledge, attitude and skills necessary for students to survive and develop in the environment. Teachers' expertise must be seen as a priority when implementing postgraduate programme. What do we mean by a qualified and skilful teacher? The most effective teachers not only demonstrate mastery of the subjects they teach but are adept in the methods of teaching and understand student's development. Unfortunately, many teachers receive little support, make little progress in their subject area or their teaching skill and never grow to the more sophisticated levels of teaching (Sadker, 2003). On going support in the form of professional development should be provided not just to new teachers but for all teachers. This is necessary because without the teacher the content of the curriculum would not be delivered to the students.

Teachers need the knowledge and skill necessary to make the fullest use of resource materials. This call for a functional resource material centre attached to some selected schools to provide the knowledge and skill. In addition teachers must understand how to use and control resource materials though many teachers fear that instructional devices like textbooks, computers etc could replace the teacher of the time of operation but such a fear is baseless because these teaching devices can no way disperse the teacher it can only help clarify facts. For any effective implementation of postgraduate curriculum, staff

development is very necessary. Mentors are therefore required to guide and offer information about curricular materials as well as observe a class taught by junior academics to offer insight into teaching skill. Note that mentors provide more than friendly support; they have an official responsibility to assess new teachers and to file report to the head of department so as to improve the teachers' instructions.

Physical/Material Resources

The essence of any postgraduate programme is to have effective curriculum implementation that will help students reach challenging goals. Successful implementation of postgraduate programme however requires that the university use resources and other support materials well in order to achieve the goal set by the department. Perhaps the greatest constraints against the successful implementation of most postgraduate curricula in most universities particularly in developing countries are inadequate supply of equipment and materials to academic programmes. Some of these helpful materials are: buildings, Internet, computers, radio, video, projectors, equipment, recorder, and visual materials.

Such equipment should meet the standards in the labour market. In fact the training environment is a replica of the environment in which the learner must subsequently work. The dearth of appropriate equipment in our postgraduate programmes should be a concern to our educational administrators.

Without equipment/material we would be faced with a situation where we produce students who have never operated or seen in operation any machine they are likely to meet upon graduation. However, material resources must be utilized optimally to meet the objectives of the curriculum.

These material resources ranging from classroom equipment, textbooks, computers tools and teaching/learning facilities vary from department to department. The list of curriculum materials is in exhaustive. Some are available in Nigeria while some are not. But teachers can always improvise some resource materials using locally available materials. They are even free to invent their own materials as long as they are safe to use and serves the purpose of enhancing learning. Importantly, the availability of these curriculum materials should align with the university instructional goals and visions as developed by teachers and stakeholders. Although there are limitations on such materials, the university should ensure that each department is allocated fund in the budget of the university while the department on the other hand should solicit for fund through their resource mobilisation committee so as to improve programme implementation.

It is also necessary that departments provide high quality curriculum materials. This is because they are more durable and effective. In order to serve as a guard against spoilage of curriculum materials it is necessary to develop a maintenance culture.

Time

Time is a resource that no one can extend, thus a successful curriculum implementation should be seen as one being achieved in good time. When a curriculum is planned for 3 years, all curriculums content must be achieved within the stipulated time. This implies that curriculum materials/resources should be ready and be procured in good time so that teachers can utilize them to achieve the objectives as at when due.

Fund

Fund is a vital resource without which curriculum resource materials cannot be obtained. However, if obtained the university and departments need to budget on how such funds would be utilized to meet the goals and objectives of the postgraduate programmes.

The budget expresses in words and numbers all programme resources needed for successful curriculum implementation. The programme resources are simply pictured along 3 elements – money, materials and manpower.

In curriculum implementation the Head of Department of postgraduate programmes has to budget for how much money would be spent on curriculum resource materials that are needed for the delivery of the content of the curriculum. A priority list is necessary to guide the spending of money on teaching/learning of curriculum content. When money is not properly budgeted for curriculum materials and resources, the objectives of the curriculum would not be achieved.

A curriculum budget is required to cater for:

- Materials – long life consumables like books, software etc
- Equipments – durable goods like computers, desk, working tools etc.
- Supplies – short life consumables like pens, letter headed papers, chalks etc.

Effective utilization of resources i.e. teachers, physical/materials, time and fund can make learning more concrete, real and permanent which will in turn bring success in achieving the goals and objectives of postgraduate programmes.

Basic Requirements in Production and Procurement of Resources for Curriculum Implementation

Over the years many postgraduate programmes do not have essential resources such as textbooks, computers equipment and other necessary materials for the teaching of postgraduate studies. Since learning is an on going exercise, dynamic and evolving academic staff must be made to identify those indicators within and outside the school environment that would promote the achievement of the goals of postgraduate programme. This is necessary because the ultimate success of any enterprise depends on the individual efforts of those who are the productive elements of the enterprise.

The following basic requirements would be useful in procuring and producing resources for an effective curriculum implementation:

- Identification of need
- Collection of relevant and appropriate material
- Step by step process or procedure of producing the desired material by applying the necessary skills
- Post-production testing of materials to ensure conformity to standard
- Proper maintenance of materials.

A good teacher should employ every effort to acquire relevant teaching materials; however the teacher should be resourceful and innovative through improvisation. The use of abundant raw materials from the immediate environment could go a long way in helping the generation of instructional materials. However, there should be adequate provision for the storage of such materials for further use.

In a situation where the materials cannot be developed but need to be purchased (e.g. computers etc), the department would have to mobilise the government, industries, donor agencies, professional organization, philanthropists, parents and stakeholders to provide fund for building classroom and buying sophisticated equipment, computers, textbooks etc. Success in this direction depends substantially on the initiative and drive of the officers concerned. Importantly, curriculum materials for effective teaching must be durable, attractive easily available and should be able to aid the students to understand the content of the curriculum.

Recommendations

1 First and foremost there must be a clear expression of readiness, determination and total commitment by the government, NUC and university management to procure good quality curriculum materials and resources for our postgraduate programmes for the achievement of the goals of the university.

2 The curriculum of all postgraduate programmes must be continuously revised, expanded and modernised with qualitative curriculum resources and materials necessary for the delivery of curriculum content.

3 Researches should be conducted on postgraduate curriculum implementation and the adaptation of materials from locally available resources in the community.

4 The postgraduate school should design teachers' guides, which will direct teachers to obtain available high quality resources, which may be used for designing local programmes. Special attention should be paid to the use of computers in teaching/learning.

5 The heads of departments should ensure that instructional materials are kept or stored in instructional kits (boxes) for future use.

6 The head of departments should ensure that recruitment of qualitative academic staff is based on those who are knowledgeable in the subject area and can adapt to the methods/material of teaching.

7 The Federal Government and NUC should establish a functional resource /materials centre attached to university training institutions where teachers can easily be taught the skill and knowledge necessary for the utilization of curriculum materials.

Conclusion

Curriculum development and implementation should not be viewed as two separate processes but rather as one interactive process. The postgraduate curriculum developers should realise that teachers are the key to successful curriculum implementation. There is therefore the need for the design and implementation of adequate materials and strategies that will promote learning, which will eventually lead to the attainment of the goals and objectives of the programme.

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4. THE PROCEDURES AND METHODS OF CURRICULUM EVALUATION IN HIGHER EDUCATION

4.0 INTRODUCTION

Evaluation is intrinsic to *all* human endeavour for it provides a framework around which future decisions can be taken. Evaluation enables judgments to be made about the current state of affairs of certain activities, particularly in relation to the objectives of the activity in question. Through evaluation it is possible to determine if the objectives are being met, when adjustments are needed to be made, the level and intensity of the adjustment and decisions about its future sustainability.

In curriculum studies, evaluation provides a toolkit around which a whole range of educational activities can be judged. These range from individual curriculum, teaching style of individual or group of teachers, the context of education itself where policies are being evaluated and whole school reform. Thus evaluation is "the process of delineating, obtaining, and providing useful information for judging decision alternatives" (Oliva 1988 p. 476). The primary decision alternatives to consider based upon the evaluation results are: 1) to maintain the curriculum as it is; 2) to modify the curriculum; or 3) to eliminate the curriculum. *Of the many categorizations of evaluations available, two broad classes have been identified: formative and summative evaluation (Scriven,* 1967).

Formative evaluation (also known as internal) is a method of judging the worth of a program while the program activities are *forming* (in progress). This part of the evaluation focuses on the process. Thus, formative evaluations are basically done on the fly. They permit the learner and the instructor to monitor how well the instructional objectives are being met. Its main purpose is to catch deficiencies so that the proper intervention can take place. This allows the learner to master the required skills and knowledge. Formative evaluation is also useful in analyzing learning materials, student learning and achievements, and teacher effectiveness. Formative evaluation is primarily a building process, which accumulates a series of components of new materials, skills, and problems into an ultimately meaningful whole.

Formative evaluation is designed to enable judgments to be made while a program is still in its initial stages. Summative evaluation is directed towards a more general assessment of the degree to which the larger outcomes have been attained over the entire course, or some substantial part of it. The techniques with which data are collected in both formative and summative evaluations are quite similar and indeed often overlap, especially since the differences between the two evaluative schemes are not too sharp.

What distinguishes them is the way the information collected through each strategy is processed and used. The formative evaluation approach is used to gather information and judge the merit of the focus of enquiry in order to improve its quality. The summative approach enables gathering information to make judgments of the overall merits of the project so that decisions can be made regarding whether to extend or adopt any aspect of it. The audience of the formative evaluator are the designer and developer of a project, while that of the summative evaluator are the consumers, and the policy initiators of the project.

Let us break these clusters into specific dynamics. As lecturers we are more concerned with ***formative*** evaluation. The HOD, the Senate and the Vice-Chancellor would hold us accountable for the day-to-day progress of our students. A large number of students carrying over a course indicate possible problems with the teaching and the learning of the course—and this is the domain of the designer of the program (in effect, NUC's Academic Development department) and the developers (Departmental Academic Development Committee). The focus of summative evaluation, however, is geared towards the political class—satisfying the government that a program, e.g. sociology is

indeed important to the society because it generates greater understanding among all who graduate successfully from the program.

Over the years since about 1949 various strategies for evaluating curriculum have been developed by various researchers, principally in the United States. These strategies eventually became models. And while the various models were initially developed for formal educational systems—specifically education at a level prior to higher institution—eventually they became expanded into dynamic tools for evaluating training effectiveness of not only formal teaching and learning situations but also corporate trainings. I will look at the range of the possible models so that we have an idea of how the evaluation tool has developed over the years.

Models of Curriculum Evaluation

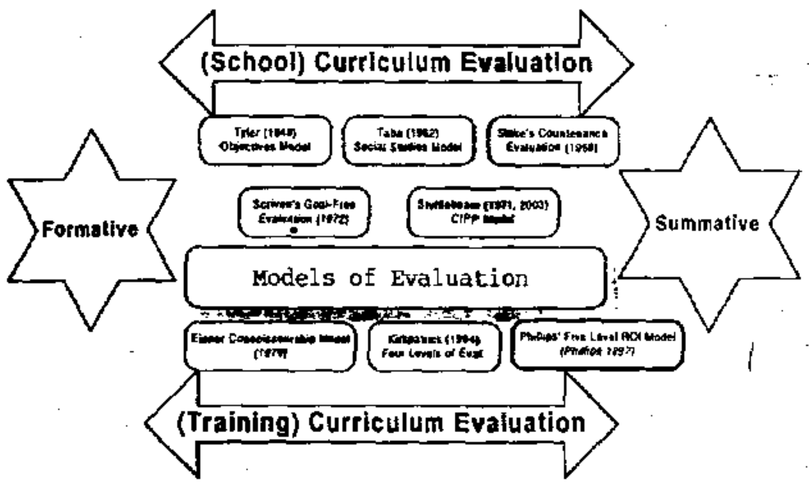
According to Oliva (1988) curriculum is defined as a

> *Plan or program for all of the experiences, which the learner* encounters under the direction of the school (organization or institution). In practice, the curriculum consists of a number of plans, in a written form and of varying scope, which delineate the desired learning experiences. The curriculum, therefore, may be a unit, a course, a sequence of courses, the school's (organization or institution) entire program of studies - and may take place outside of the classroom or school (p. 9 - 10).

Curriculum development process includes design, development, implementation and evaluation phases. Evaluation has to be done at each phase of curriculum development. Thus both formative and summative evaluation would have to be carried out.

It is for this reason that the concept of curriculum evaluation was extended beyond formal school settings to include programs aimed at training people in various capacity-building contexts and situations. Different experts have developed various models of curriculum evaluation. A well-conceived and designed curriculum evaluation model should serve as an excellent model for curriculum development. A model that is useful for making important decisions concerning the value and worth of the curriculum should be equally useful in the development of a curriculum.

There are different approaches to evaluate curriculum. The popular models used for the curriculum evaluation are Tyler's model, Hilda Taba model, Stake's Countenance model, Scriven's Goal-Free model and Stufflebeam's CIPP model. The models used to evaluate training curriculum include Eisner Connoisseurship model, Kirkpatrick's Four Levels of Evaluation Model, and Phillips' Five Level ROI Model. A visual representation of these models is given in the figure below:



Curriculum Evaluation Models

Tyler's Model

Probably the best known model of curriculum evaluation is proposed by Tyler (1949) who describes education as a process in which three different foci should

be distinguished. They are educational ***objectives, learning experiences,*** *and* ***examination of achievements.***

This is the most common model of evaluation. Tyler contends that the curriculum should be organized around objectives and that these objectives should serve as a basis for planning instruction. Objectives would therefore provide the criteria for evaluation. This view of evaluation, as the measurement of predetermined behavior, is systematic, formal, and precise and offers a logical sequence. For this reason, it has proved invaluable to educators and trainers. However, it may have its drawbacks if the potential for these goes unrecognised:

- It is school based.
- It does not allow for unplanned outcomes.
- It could discourage flexibility.
- It might disregard differences in learners' experiences, interests and level of ability.

This model is primarily used to evaluate the achievement level of either individual learners or of a group of learners. The evaluators working with this model are interested in the extent to which learners are developed in the desired way. Both cognitive and affective domains are given importance in this model. In Tyler's model, the relationship between educational objectives and learner achievement constitutes only a portion of the model.

Hilda Taba Model

Hilda Taba's (1962) Social Studies Model emphasizes on the cause and effect relationship in the curriculum process. The evaluation process is based on experimental control over the study materials and its effect on the achievement of the students. The researcher prepares different sets of study materials, each set having certain variations from the other. The materials are exposed to different groups of students. After exposition, the curriculum is evaluated. The outcomes of curriculum evaluation will determine the principles of developing the new programs.

Shake's Countenance Model

Stake (1969) explains curriculum evaluation in terms of ***antecedents, transactions*** and ***outcomes.*** Let us first understand these terms. The term antecedent refers to those aspects in which curriculum are taught, such as: time available and the other sources provided. The term transactions refer to what actually happens in lessons, including what is done by both the teachers and learners. The term outcomes denote learner's achievements, the effects of the curriculum on the attitudes of the students, as well as teacher's feelings about teaching the curriculum. This model is known as countenance model because different people look at the curriculum and appraise it accordingly. The evaluation model is explained as below:

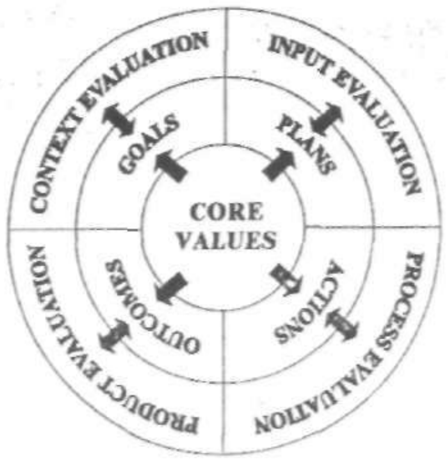
Terms	Kind on Information	Methods
Antecedents	* Organizational background * Resources * Attitudes of administrators and parents * Examinations available * Content in Curriculum * Knowledge and skills of pupils	* Time table * Syllabus and textbooks * Interview
Transactions(in lessons)	***Teachers*** : * Roles adopted * Use of time and resources * Contact with pupils ***Pupils*** : * Cognitive processes * Interest and involvement * Use of Time	* Activity Records * Observations of class * Self-report by teachers * Self-report by pupils
Outcomes	* Pupil s achievements * Pupil s attitudes, interpretations * Teachers attitudes, interpretation * Effects on other parts of institutions	* Test and written work * Questionnaires * Interviews

Scriven' Goal Free Evaluation (1972)

Let us say we are interested in knowing the unintended as well as the intended outcomes of a implementing a particular curriculum, the Goal Free Evaluation Model may be an appropriate way of capturing the results or outcomes. Developed by Michael Scriven in the early seventies, this evaluation model intentionally seeks to be blind to the objectives or goals of project stakeholders. Scriven noticed that the common focus of evaluators on the achievement of results on pre-determined objectives sometimes missed the positive unintended outcomes that resulted. The organizing principle in this type of evaluation is the effects and not the goals. To conduct this type of evaluation two types of information are necessary. First, the evaluator needs to identify all the effects or outcomes that resulted from the project. Next the evaluator must construct a profile of the needs of the target population. If an effect has a positive impact on one or more of those needs, that part of the program that yielded that effect should be positively evaluated.

Stufflebeam's CIPP Model (1971)

The CIPP model proposed by Stufflebeam (1971, 2003) was also a reaction to Tyler's approach, which concentrated on the final outcomes of a learning program. This model requires evaluators to study the effectiveness and feasibility of the initial policy decisions that gave rise to the program as well as the program's operation. In any evaluation according to this model the influence of institutional priorities, the impact of individual personalities and the importance of the prevailing political climate would be considered. The model is visually represented below:



Stufflebeam's proposed CIPP model stresses the need for attention to context (c), Input (i), Process (p), and Product (pr). The first three terms refer to formative evaluation, while the product refers to summative evaluation. Let us discuss each of the terms, used by Stufflebeam, below.

- ***Context evaluation***: Here the curriculum evaluator is engaged in studying the environment (context) in which the curriculum is transacted. It provides the rationale for selection of objectives. Content evaluation is not a one-time activity. It is a continuous process for furnishing baseline information for the operations of the total system.
- ***Input evaluation***: The purpose of input evaluation is to get information for how to utilize resources optimally to meet the objectives of the curriculum. It includes evaluation of some sort of physical and non-physical inputs such as availability of physical and human resources, time and budget. It also includes previous achievement, education and aspirations of pupils.
- ***Process evaluation***: This is the most critical component of the overall model. Quality of the product largely depends on this component. It addresses the curriculum implementation decisions. Stufflebeam presents the following three strategies for process evaluation:

  - To detect or predict defects in the procedural design or its implementation during the diffusion stages: In dealing with plan or curriculum defects, we should identify and monitor continually the potential sources for the failure of the curriculum. The source may be logistical, financial, etc.
  - *To provide information for curriculum decisions: Here, we should* make decisions regarding test development prior to the actual implementation of the curriculum. Some decisions may require that certain in-service activities be planned and carried out before the actual implementation of the curriculum.
  - To maintain a record of procedures as they occur: It addresses the main features of the project design; for example: the particular content selected, the instructional strategies planned, or the time allotted to the planning for such activities.
- ***Product evaluation***: It helps us to determine whether the curriculum objectives have been achieved or not. On the basis of collected data, we can decide whether to continue, modify, change or terminate a curriculum.

The value of the CIPP model is that it takes into consideration the whole context surrounding a program. Its disadvantage may be the time necessary to carry it out.

Program Evaluation Models

Education and training needs are constantly changing with changing technology, educational technology, management processes and modes of delivery. In order to determine the effectiveness of various curricula, it is essential to carry out evaluation of program schedules or as they initially started out, curricula. Therefore, continuous updating and revision of curricula is required. A systematic and comprehensive evaluation of existing curricula can provide information for this further revision of curricula. Evaluation also helps the policy makers, planners, administrators in bringing out required changes in subject contents, policy formulation, planning and implementation of training programs to make these more relevant and effective. As a result, a series of management-oriented evaluation models have been developed over the years. While these can be used at the formal school level, nevertheless their focus and orientation tend to be made at management levels. A few of them include:

Eisner Connoisseurship Model (1979)

The educational connoisseur like the connoisseur of art possesses a critical eye that permits him or her to appreciate the characteristics and qualities of a phenomenon. This evaluation approach utilizes the concept of the connoisseur as an evaluator who enters an organization and serves as a critic of the program under review.

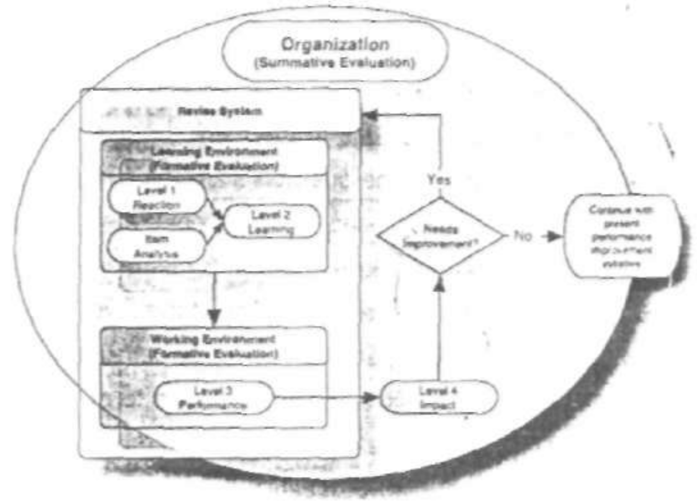
Eisner's model is based upon the two concepts of educational connoisseurship and educational criticism. The first of these involves the researcher observing in the classroom in order to build up an understanding of what is taking place. Connoisseurship is defined as "the act of knowledgeable perception; the ability to see what is subtle, complex and important" (Eisner, 1979, p. 193) and requires the capacity to attend to the happenings of educational life in a focused, sensitive and conscious way.

Once the data have been collected, the emphasis shifts from connoisseurship to criticism. Educational criticism involves the observer in communicating the quality of the events which have been observed to those responsible for their generation. Because discussions surrounding the quality of interactions potentially can be very threatening to those who have been observed, Eisner proposes three stages of disclosure of the information to be shared. These stages move progressively through description to interpretation to appraisal and are explained by Eisner in the following way:

> The descriptive aspect aims at the vivid rendering of the events perceived in the situation. The interpretive attempts to provide an understanding of what has been rendered by using, among other things, theories, research and models. The evaluative aspect of educational criticism attempts to assess the educational import or significance of the objects described and interpreted (1979, p. 211).

Kirkpatrick's Four Levels of Evaluation Model (1994)

Assessing training effectiveness often entails using the four-level model developed by Donald Kirkpatrick (1994). According to this model, evaluation should always begin with level one, and then, as time and budget allows, should move sequentially through levels two, three, and four. Information from each prior level serves as a base for the next level's evaluation. Thus, each successive level represents a more precise measure of the effectiveness of the training program, but at the same time requires a more rigorous and time-consuming analysis.



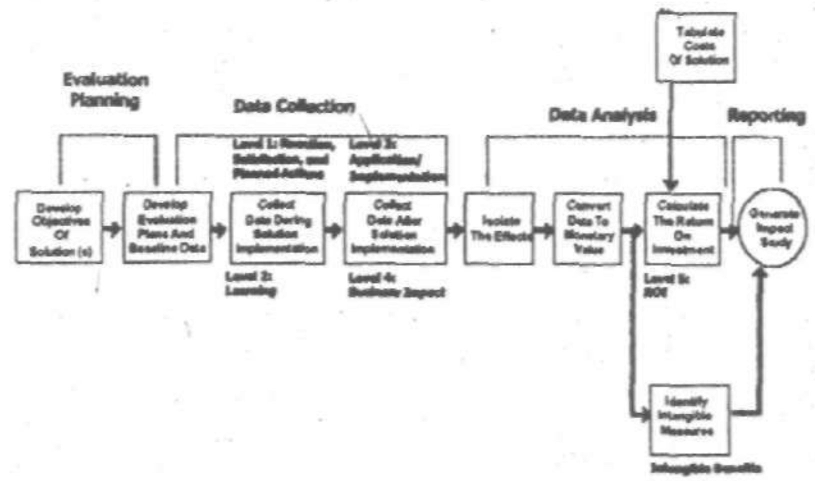
- ***Level 1 Evaluation – Reactions:*** Just as the word implies, evaluation at this level measures how participants in a training program react to it. It attempts to answer questions regarding the participants' perceptions - Did they like it? Was the material relevant to their work? This type of evaluation *is often called a "smilesheet." According to Kirkpatrick, every program* should at least be evaluated at this level to provide for the improvement of *a training program. In addition, the participants' reactions have important* consequences for learning (level two). Although a positive reaction does not guarantee learning, a negative reaction almost certainly reduces its possibility.

- ***Level 2 Evaluation – Learning:*** Assessing at this level moves the evaluation beyond learner satisfaction and attempts to assess the extent students have advanced in skills, knowledge, or attitude. Measurement at this level is more difficult and laborious than level one. Methods range from formal to informal testing to team assessment and self-assessment. If possible, participants take the test or assessment before the training (pretest) and after training (post test) to determine the amount of learning that has occurred.
- ***Level 3 Evaluation – Transfer:*** This level measures the transfer that has occurred in learners' behavior due to the training program. Evaluating at this level attempts to answer the question - Are the newly acquired skills, knowledge, or attitude being used in the everyday environment of the learner? For many trainers this level represents the truest assessment of a program's effectiveness. However, measuring at this level is difficult as it is often impossible to predict when the change in behavior will occur, and thus requires important decisions in terms of when to evaluate, how often to evaluate, and how to evaluate.
- ***Level 4 Evaluation- Results:*** Frequently thought of as the bottom line, this level measures the success of the program in terms that managers and executives can understand -increased production, improved quality, decreased costs, reduced frequency of accidents, increased sales, and even higher profits or return on investment. From a business and

organizational perspective, this is the overall reason for a training program, yet level four results are not typically addressed. Determining results in financial terms is difficult to measure, and is hard to link directly with training.

Phillips' Five Level ROI Model (Phillips 1997)

In the last decade, Jack Phillips has enhanced the venerable Kirkpatrick Model to include financial metrics. Using the Phillips methodology, managers can evaluate a given Human Resource Development (HRD) initiative, training or performance intervention and calculate the return on investment (ROI). ROI is a financial measure that is familiar to managers, who use it to compare the benefits of an investment – the amount saved or gained – with its cost. This measure also allows executives to compare the benefits of a training program with other *investment opportunities within the organization. The model below illustrates the* continuity between Kirkpatrick and Phillips' models in dovetailing to ROI model.



The ROI method involves assessing the project success according to six levels of measures including data from the four Kirkpatrick levels. Phillips's approach involves careful evaluation planning followed by the collection of data on learner reaction, learning, behaviour (application to the job), business results, and return on investment. Some benefits, judged to be difficult to quantify, are reported as intangible benefits. Reaction and learning data are collected during the training while the application and business impact results are measured on a pre-determined schedule sometime after training.

Integrating Teaching, Learning, and Assessment

While the scholarships of "teaching and learning" and "assessment" are often viewed as separate scholarships, they share a singular aim. This aim is to improve student learning. Angelo (2002) discusses the failure of the "assessment movement" to achieve broad gains in student learning. Drawing from organizational change and educational literatures, he concludes that, "...a separate and isolated scholarship of assessment campaign is not likely to succeed" and he proposes that the scholarship of assessment should be integrated into the existing scholarship of teaching and learning (p. 200).

The relationship between teaching and learning strategies and outcomes assessment is changing. Historically, instructional strategies were fairly static and evaluation strategies were variable (Erwin and Wise, 2002). Recently, instructional strategies have become more variable while assessment strategies have become more common (Erwin and Wise, 2002). Increasing attention to variable teaching strategies has implications for assessment of student learning. The guiding question for outcomes assessment has been: How and to what extent are students achieving stated learning outcomes? A second question emerges as teaching and learning strategies expand. This question is: What types of instructional strategies best contribute to what types of learning? A third question to explore is: Do certain groups of students benefit differently from different types of instructional strategies and course taking patterns?

Answering these questions encourages using assessment data to contribute to course and curricular designs and requires a robust assessment plan. This assessment plan needs to examine learning across multiple disciplines, class environments, and instructional strategies. The plan also needs to embed itself in

instructional designs so that differential learning experiences can be evaluated. It needs to examine differences in course taking patterns on different groups of students (Ratcliff, 1995). Finally, it needs to externally examine differences in student learning across broad domains.

Evaluation and Assessment in Higher Education

While our models provide a useful guide into understanding the nature of the curriculum and how it should be delivered, they all fall short of prescribing the actual process of assessment. The curriculum evaluation models are particularly useful in pre-tertiary education systems – from kindergarten to the senior high school – because they are based on structured understanding of how the psychology of pre-adolescent and adolescent children works. Within their learning contexts it becomes imperative to ensure a targeted evaluative activity that falls with the matrix of their understanding of certain concepts and principles.

In higher education, however, the emphasis tended to be different. There are still formalized structures, but not in the same format as pre-tertiary education. In Nigeria, the NUC's ***Minimum Academic Standards*** are the benchmarks around which the quality of instruction – as evidenced by the results of accreditation exercises – is measured. While there are no specific learning objectives, there are learning expectations, even though these are not explicitly stated. At this level of instruction, however, we are more concerned with assessing student learning in terms of the broader goal of the program. Cumulatively therefore assessment at higher institutions is a concatenation of summative evaluations of various individual component programs.

Now let us re-focus our attention to classroom dynamics and see the difference between evaluation and assessment. Evaluation is typically a broader concept than assessment as it focuses on the overall or summative experience. Assessment is typically used to describe processes to examine or measure student learning that results from academic programs. Assessment is an ongoing process aimed at improving student learning, more so than evaluation, which is usually a final (or summative) result. Improving learning from assessment *sometimes occurs immediately in classrooms or later because of changes for* future students. However, these terms are often used interchangeably and so it is important to be aware of the larger context of the discussion at hand (Ewell, 2002).

Thus

- *Formative Assessment*: Assessment that provides feedback to the teacher for the purpose of improving instruction and other aspects of the teaching process (Wakeford, 2003).
- ***Summative Assessment***: A culminating assessment, which provides information about the students' mastery of content, knowledge, or skills (Wakeford, 2003).

Assessment and Evaluation of Learning

Peter Ewell (2002) suggests that the "assessment movement" began in the United States in the fall of 1985. The First National Conference on Assessment in *Higher Education was held in* Columbia, South Carolina that year. The co-sponsors of the event were the National Institute of Education (NIE) and the American Association for Higher Education (AAHE). In 1989, the movement gained momentum as the Fund for the Improvement of Postsecondary Funding (FIPSE) provided financial backing for J. Marchese and Pat Hutchings at AAHE to establish the Assessment Forum and other activities. One of these activities was "...periodic meetings of a dozen 'practitioner-students of assessment' from *across the country". A result of these meetings was the establishment of nine* principles of good practice for assessing student teaching (Astin et al., 2003). These principles are:

1. The assessment of student learning begins with educational values.
2. Assessment is the most effective when it reflects an understanding of learning as multidimensional, integrated, and revealed in performance over time.

3. Assessment works best when the programs it seeks to improve have clear, explicitly stated purposes.
4. Assessment requires attention to outcomes but also and equally to the experiences that lead to those outcomes.
5. Assessment works best when it is ongoing not episodic.
6. Assessment fosters wider improvement when representatives from across the educational community are involved.
7. Assessment makes a difference when it begins with issues of use and illuminates questions that people really care about.
8. Assessment is most likely to lead to improvement when it is part of a larger set of conditions that promote change.
9. Through assessment, educators meet responsibilities to students and to the public

During the first ten to fifteen years of the assessment movement much attention was given to classroom assessment. Tools were developed and deployed in individual classrooms at most universities. Despite the level of assessment activity, it was unclear at the end of the 1990s the extent to which assessment was being used to inform practice at the institutional level. Between 1997 and 1998, researchers at the National Center for Postsecondary Improvement (NCPI) reviewed the assessment literature then conducted a national survey on institutional support for student effort (Peterson et al 1999, p. 1). A primary purpose for their research was to inform research practice at the institutional level.

A challenge for any institution desiring to implement assessment to improve student learning is defining assessment. While debate over the terminology exists, common definitions are emerging. A primary issue in defining assessment is paralleled in social science research. This is the issue of research level. Terenzini (1989) identifies the level of assessment as one of three questions that should guide an institutional definition of assessment. He states:

What is to be the level of assessment?" Who is to be assessed? Will the assessment focus on individual students, where the information gathered on each student is inherently interesting? Or will it focus on groups; where individual information is aggregated to summarize some characteristic of the group (for example average performance on some measure)? In this instance, "group" refers to any of a wide variety of student aggregations, such as at the course, program, department, college/school, campus, or system level; or to students grouped by sex, race/ethnicity, class year, major, place of residence, or whatever" (Terenzini, 1989, p. 647).

Ewell (2002) also notes the challenges in defining assessment. Similar to Terenzini (1989), Ewell found a relationship between definitional issues and level of assessment. He expresses this relationship as three "traditions" of assessment. The *first* tradition is rooted in mastery learning and emphasizes determining "an individual's mastery of complex abilities, generally through observed performance" (Ewell, 2002, p. 9). He concludes that proponents of this tradition "...emphasized development over time and continuous feedback on individual performance..." (p. 9). He found the *second* tradition emerged from secondary school practice. This tradition focuses on accountability at the institutional level and stresses psychometric testing to aggregate data and uses that data to benchmark school performance against some common standard (Ewell, 2002, p. 9). The *third* tradition described by Ewell, "defined assessment as a special kind of program evaluation, whose purpose was to gather evidence to improve curricula and pedagogy" (p. 9). This tradition gathers aggregate data; however, it uses multiple methods, emphasizes improvement, and "was as much about using the resulting information as it was about psychometric standards" (Ewell, 2002, p. 9).

However, while much of the early work in higher education assessment centered on assessing student outcomes and the methodological tools were at

an individual level of analysis, emphasis has shifted to programmatic levels in recent years (Palomba and Banta, 1999; Peterson, et al. 1999). Palomba and Banta (1999) notes this shift in describing the overriding purpose of assessment as understanding "...how educational programs are working..." and determining "...whether they are contributing to student growth and development" (p. 5). They conclude the emphasis of assessment was on programs rather than individual students. This is not to negate the importance of providing feedback to students as part of the instructional process; however, institutions are increasingly called on to demonstrate how and to what extent they impact student learning. The two needs of providing individual student feedback and programmatic or institutional level feedback are not mutually exclusive. Rather, they can be viewed as a similar aim, providing information to measure student learning and subsequently improve institutional impacts on learning requiring similar data while reporting the findings in ways different audiences understand.

Traits of Effective Teachers

Although many people believe that good teaching is impossible to define in any general way, a large body of research suggests that certain characteristics are consistently associated with good college teaching as viewed by students, other teachers, and administrators. In a study of winners of the Alumni Distinguished Teaching Award at Ohio State (Ebro, 1977), observation of classes identified the following characteristics of effective teaching, which strongly parallel those found in other studies:

- The teachers got right down to business. They began class promptly and were well organized.
- They taught at an appropriate fast pace, but stopped regularly to check student comprehension and engagement.
- They used a variety of instructional strategies rather than lecture alone.
- They focused on the topic and their instructional objectives and did not get sidetracked. Their explanations were clear.

- They used humor that was in keeping with their individual styles.
- They practiced good classroom management techniques, holding the attention and respect of the group.
- They interacted with students by providing immediate answers to questions or comments and corrective feedback when needed. They praised student answers and used probing questions to extend the answers.
- They provided a warm classroom climate by allowing students to speak freely and by including personal humor or other attempts to relate to students as people.
- They used nonverbal behavior, such as gestures, walking around, and eye contact, to reinforce their comments.

Joseph Lowman (1996) describes two main dimensions of effective college teaching that emerge in his studies: intellectual excitement (enthusiasm, knowledge, inspiration, humor, interesting viewpoint, clarity, and organization) and interpersonal concern/effective motivation (concern, caring, availability, friendliness, accessibility, helpfulness, encouragement, challenge). Other studies (see, for example, Chickering and Gamson, 1991) consistently identify knowledge of subject matter, organizational skills, enthusiasm, clarity, and interpersonal skills as marks of the effective teacher. The amount of agreement across studies suggests that the characteristics of good teaching are not mysterious or extremely discipline-specific. They can, and have been, identified by researchers, students, and professionals alike.

Inspection of these characteristics fails to support another commonly held belief about teaching: "Good teachers are born, not made." While certain characteristics, such as humor and interpersonal skills, seem to come easily to some people and not others, people are not born with knowledge of a given discipline or competency in the use of instructional strategies. Furthermore, those who exhibit these qualities most consistently state that they work hard at attaining them and are very conscious of their actions and their effects.

These highly conscious teachers are examples of what Donald Schön (1983) has termed the "reflective practitioner," the professional who acquires expertise by learning in the action environment. In a study of Ohio State faculty (Chism, 1988), a model of faculty growth in teaching emerged that suggested that effective teachers develop by maximizing what they learn through experience. They engage in cycles of learning during which they try a practice, observe its effects, and decide how and when they will use a similar practice. Most teachers often carry on the process without a great deal of conscious attention and rather unsystematically. What distinguishes those who learn best, however, is the very level of conscious reflection and the quality of information they bring to bear in determining the effects of a practice in a particular context. The best teachers know not only what they are doing, but why it is working and why it is likely to work in one kind of environment and not in another. Although they may have some natural personality characteristics that support their success, they also work very hard at their teaching and continually try to improve.

Teaching Styles

A number of writers have observed differences in style among college teachers. They classify them according to a number of dimensions that represent how the teachers approach their students, the ways in which they think learning takes place, and personal strengths and preferences. Lowman (1996), for example, observes that exemplary college teachers "appear to be those who are highly proficient in either one of two fundamental sets of skills: the ability to offer presentations in clearly organized and interesting ways (intellectual excitement) or to relate to students in ways that communicate positive regard and motivate them to work hard to meet academic challenges [interpersonal rapport]. All are probably at least completely competent in both sets of skills but outstanding in one or, occasionally, even both of them" (p. 38).

Grasha (1996) delineates five teaching styles:

- *Expert*—is concerned with transmitting information from an expert status; challenges students to enhance their competence
- *Formal Authority*—is concerned with the acceptable ways to do things and providing students with the structure they need to learn
- *Personal Model*—believes in teaching by personal example; oversees and guides students to emulate
- *Facilitator*—emphasizes the personal nature of teacher-student interactions; guides students toward developing their capacity for independent action
- *Delegator*—is concerned with developing students' capacity to function autonomously; encourages independent projects

Grasha advocates an "integrated model" of teaching and learning styles, recognizing that individual teachers will naturally exhibit different styles, but stressing that teachers must cultivate certain styles so that they can use approaches that are appropriate to the instructional situations and kind of learners they encounter. For example, he observes that a blend of the Expert-Formal Authority styles works best with learners who are dependent and less capable with the content. Grasha advocates that teachers reflect on their stylistic approaches and make conscious decisions about these.

The Definition of Performance Assessment

Performance assessment is a measure of assessment based on authentic tasks such as activities, exercises, or problems that require students to show what they can do. Some performance tasks are designed to have students demonstrate their understanding by applying their knowledge to a particular situation. For example, students might be given a current political map of Africa showing the names and locations of countries and a similar map from 1945 and

be asked to identify and explain differences and similarities. To be more authentic (more like what someone might be expected to do in the adult world), the task might be to prepare a newspaper article explaining the changes.

Performance tasks often have more than one acceptable solution; they may call for a student to create a response to a problem and then explain or defend it. The process involves the use of higher-order thinking skills (e.g., cause and effect analysis, deductive or inductive reasoning, experimentation, and problem solving). Performance tasks may be used primarily for assessment at the end of a period of instruction, but are frequently used for learning as well as assessment (McBrien and Brandt, 1997).

Performance- based assessment

Standardized tests, the cornerstone of public school assessment, while inexpensive, efficient to administer, and easy to report; nonetheless give an incomplete picture of student achievement. While effective at measuring content knowledge, standardized tests do not measure students' skills or ability to perform higher-level thinking. Performance -based assessment, on the other hand, can give us a more complete picture of student achievement.

What is performance-based assessment?

Performance-based assessments ask students to show what they can do given an authentic ***task***, which is then judged using a specific set of ***criteria***. Performance-based assessment provides teachers with information about how a student understands and applies knowledge. They can be used to evaluate reasoning, products, and skills that can be observed and judged using specific criteria. Tasks that have more than one acceptable solution often lend themselves well to a performance-based assessment, since they may call for the student to use higher-order thinking skills such as experimenting, analyzing or reasoning. Examples of learning that can be measured well using a performance-based assessment include: giving an oral presentation; writing a research paper;

operating a piece of equipment; and creating and conducting a science experiment.

How do you measure student performance?

Student performance tasks are measured using performance criteria. Creating performance criteria serves two purposes. First, it defines for the student and the teacher what the expectations of the task are. Second, well-defined criteria allow the teacher and student to evaluate the task as objectively as possible.

If performance criteria were well defined, another person acting alone would be able to evaluate the student accurately and easily. In addition, well-written performance criteria allow the teacher to be consistent in scoring over time, which is especially good when evaluating skills (Stiggins, 1997).

How can you document student performance?

Student performance can be documented in four ways:

- ***Rubric*** – A rubric is a rating scale that shows to what degree a criterion is met. Most rubrics use a four or five degree scale that would allow the teacher to evaluate performance criteria from "not present" to "exemplary"
- ***Checklist*** - A checklist is a simpler version of a rubric and usually documents only whether or not certain criteria were met during the task.
- ***Narrative*** - A narrative is a written record that explains exactly how well a student has met the performance criteria.
- ***Memory*** - Using no mechanical means the teacher observes the student performing the task. This mental information is then used to determine whether or not the student was successful at meeting the performance criteria.

What are the strengths and weaknesses of each reporting method?

	Strength	Weakness
Rubric	Records assessment and rationale with one rating.	Can be difficult to create.
Checklist	Fast and efficient. Useful for large numbers of criteria.	Results can lack depth.
Narrative	Provides the most complete picture of achievement.	Time consuming to write.
Memory	Quick and easy.	Difficult to remember accurately especially over time.

Issues to consider when developing assessments:

- Is the assessment for formative or summative purposes?
- Do you want to emphasize students' ability to write and read?
- Do you want to emphasize students' ability to think creatively and critically?
- How large is the class and what will class size mean for creating and grading the assessment?
- Is the assessment reusable?
- Have you considered ways to prevent cheating?

Conclusion

Teaching is, as the report of the United States Higher Education Research Program, (1989) terms it, "the business of the business," the main purpose for institutions of higher education. Instructors who take this responsibility seriously strive continually to be more reflective about their practice and to improve as their careers progress. Good teaching involves more than the simple transmission of information and includes motivating students and creating a positive classroom environment as well. When coupled with the many other responsibilities a university instructor has, however, efforts to teach well can lead to stress and burnout. Maintaining realistic expectations and exercising time management are ways in which instructors can help avoid unproductive stress.

The greatest challenge of all is to our courage in the face of a needed paradigm shift. Higher education and policymaker's alike need to entertain a new notion of accountability, one able to capture complexity and ambiguity instead of dealing in 2-digit data points and deceptive clarity. We need a new notion of accountability, one that does not rely exclusively on quantitative data or comparisons among institutions but rather is *also* qualitative, descriptive, seeks understanding of the issues and improvement respects institutional differences and acknowledges, as Albert Einstein phrased it, that not everything that can be counted counts, and not everything that counts can be counted.

Within the assessment community and especially beyond it, we need a notion of accountability that *serves* improvement instead of undermining it. The contemporary notion of accountability relies heavily on the positivistic assumptions of quantitative research, with its reliance on a natural science worldview, its biases in favor of "objective," "outsider" measurements, its attempts to control variables and capture "the truth," its ambition to achieve generalizability. A qualitative approach to accountability will be more phenomenological and descriptive, it will value the "insider" perspective, and it will be as interested in process, discovery, and explanation as it is in outcomes or confirmation of predictions. It will have a place for what is unique or of limited generalizability, and seek "truthfulness" in a given context rather than "the truth." We need a kind of accountability that includes measurement, but also makes use of demonstrations, documentation, evidence of *all* kinds, and relies in the end on human judgment to make meaning.

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Appendix 1

CURRICULUM EVALUATION TOOL

Name of Curriculum (Course)

CATEGORY/QUESTION	EVIDENCE
CONTENT	
1. How appropriate is the content for the designated age level? Provide evidence.	
2. How significant and relevant to students' daily lives is the content? Provide evidence.	
3. Other	
INSTRUCTIONAL DESIGN	
4. Is scientific investigation taught, modeled, and practiced where appropriate? Provide evidence.	
5. Do the materials actively engage the students to promote their understanding of the content? Provide evidence.	
6. Are there sufficient experiences and opportunities for discussion for students to develop deep understanding of content? Provide evidence.	

7. Other	
ORGANIZATION OF TEACHER'S MATERIALS	
8. Do the teacher materials include clear and adequate background information? Provide evidence.	
9. Are there clear and adequate guidelines to support teaching all aspects of the lessons? Provide evidence.	
10. Are the format and structure of the teacher materials easy for a teacher to follow?	
11. What special facilities and equipment are needed to implement the program?	
12. Other	
ASSESSMENT	
13. Are assessments for both students and teachers included in the materials? Provide evidence.	
14. Is there a variety of formal and informal assessments? Provide evidence.	
15. Other	
EQUITY	

16. Is the material free of racial, ethnic, gender, and age bias?	
17. Are appropriate strategies included to meet the needs of special/diverse populations? Provide evidence.	
18. Other	
ALIGNMENT WITH STANDARDS	
19. How does the content align with district and state standards and frameworks for scientific knowledge? Provide evidence.	
20. How does the content align with district and state standards and frameworks for science thinking skills? Provide evidence.	
21. Other?	

Appendix 2

Indicators of Effective Assessment in Higher Education

1. Staff and students treat assessment as an integral component of the entire teaching and learning process.
2. The multiple roles of assessment are recognised. The powerful motivating effect of assessment requirements on students is understood and assessment tasks are designed to foster valued study habits.
3. There is a faculty/departmental policy that guide assessment practices. Subject assessment is integrated into an overall plan for course assessment.
4. There is a clear alignment between expected learning outcomes, what is taught and learnt, and the knowledge and skills assessed.
5. Assessment tasks assess the capacity to analyse and synthesise new information and concepts rather than simply recall information, which has been presented.
6. A variety of assessment methods is employed so that the limitations of particular methods are minimised.
7. Assessment tasks are designed to assess relevant generic skills as well as subject-specific knowledge and skills.
8. There is a steady progression in the complexity and demands of assessment requirements in the later years of courses.
9. There is provision for student choice in assessment tasks and weighting at certain times.
10. Student and staff workloads are considered in the scheduling and design of assessment tasks.
11. Excessive assessment is avoided. Assessment tasks are designed to sample student learning.

12. Assessment tasks are weighted to balance the developmental ('formative') and judgemental ('summative') roles of assessment. Early low-stakes, low-weight assessment is used to provide students with feedback.
13. Grades are calculated and reported on the basis of clearly articulated learning outcomes and criteria for levels of achievement.
14. Students receive explanatory and diagnostic feedback as well as grades.
15. Assessment tasks are checked to ensure there are no inherent biases that may disadvantage particular student groups.
16. Plagiarism is minimised through careful task design, explicit education and appropriate monitoring of academic honesty.

5. CURRICULUM EXPERIENCES, CONTENT AND ORGAN

5.0 INTRODUCTION

Curriculum design must be holistic and multidisciplinary; with the general view of exposing learners to a broad view of knowledge. Hunkins and Hammil, 1994, Relan and Kingston, 1992, believe that the curricula should not only be holistic, it should also be "unfretted by pre-established rules" and, in conditions of constant change and unpredictability be responsive. In addition, the curricula should be emergent instead of being fixed, invite synthesis rather than fragmentation of thinking. The focus on the 21st Century is that curricula should be integrative instead of subject-focused, which often fails to provide learners with the intellectual skills needed in a competitive society. An example of this is the mechanical engineering curricula in Ahmadu Bello University, Zaria that focuses only on engineering, without consideration of the impact of engineering in society.

A curriculum design that adopts an integrated approach usually intermingles disciplines such as thinking, reasoning, and problem solving capabilities (Relan, and Kimpston; 1991 and Komski, 1990). From their experience, Martinello and Cook, 1994, observed that interdisciplinary curricula offers strong advantages and is best prepared and delivered by designers that work as a team. Curriculum design takes into account intentions, outcomes, cultural diversity, developing goals and objectives, learning needs and experience and equal opportunities issues, such as gender or race. Using a systematic process (a model) for designing, and delivering the curricula increases the effectiveness of training and educational experience. The process includes the assessment of learning needs, designing, developing, delivering and evaluating the learning experience. From their study of student experience, Oxford Brookes University in England discovered that students rated teaching and learning, Library resources, and sports and leisure facilities as their most important experiences.

(Http://www.hlst.ltsn.ac./johlste/vol2no1/academic/0022.html. Therefore the Curriculum design, content and organization can be more effective if perceived quality of students experience is taken into consideration.

Learning Experiences

Tyler defines this as the "interaction between the learner and the externa conditions in the environment to which he can react" (Tayler, 1950). The interaction can be mental, like contemplating, questioning, thinking, judging discussing and so on. It should be such that it progressively develops the learner's abilities to critically analyze and creatively solve professional problems He is introduced to the idea that questions may and should be asked, thereby stimulating the awareness of issues within the confines of the subject. The process of problem identification (defining the questions) and resolution (developing potential answers to the questions) lead to the interactive dynamism in which solutions are tested and adopted, altered, or abandoned to give unique learning experience. To select appropriate learning experience, curriculum design must take into account modern principles of learning which include the following (Onwuka, U., 1985):

(a) Learning comes from active involvement of the learner, which include the learner's understanding and acceptance of the purposes to b fulfilled.

(b) The individual goals, values and motives affect learning.

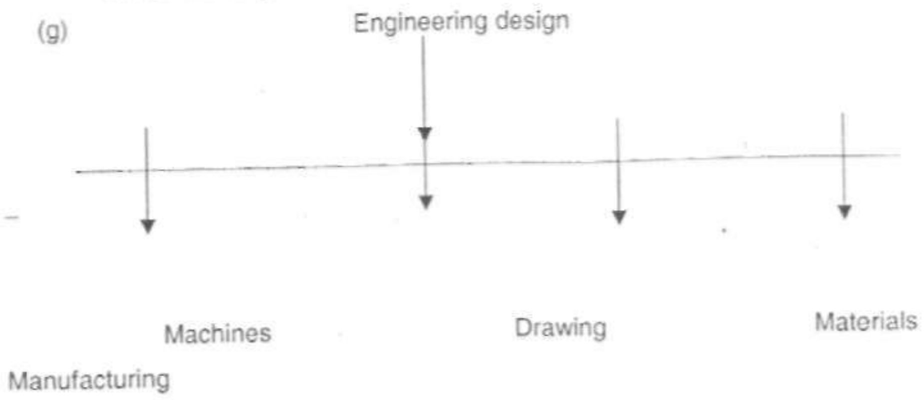
(c) Learning begins from the learner's present achievement. It is his/h drive for further achievement that results in the satisfaction obtaine from past achievement.

(d) Learning takes place through various channels. The wider range experiences presented to the learner lead to more generalization a discrimination.

(e) The relationship between new ideas and those already gained essentially a bridge in the process of learning.

(f) All learning are multiples of each other. The focus on learning may be on one particularly designed outcome, but other learning take place simultaneously.

(g)



Criteria for selecting content (Onwuka, U. 1985, http://webinstuteforteachers.org/2000/curriculum/)

(i) **Validity** – Are the learning experiences valid in light of the ways in which knowledge and skills will be applied in experiences outside the learning environment?

(ii) **Feasibility** – In terms of time, staff experience, facilities available in and outside the Institution and community expectations.

(iii) Are the learning experiences:

(a) Capable of allowing students to **develop their thinking** skills and rational powers?

(b) Capable of **stimulating** in students greater understanding of their own existence as individuals and as members of groups?

(c) Such that students' **interests** are broadened?

(d) Capable of developing the students in **cognitive, social, psychomotor and spiritual domains**?

(e) Facilitate learning and **motivate** students to continue learning?

(iv) **Variety** – Students learn in different ways and rates. The learning experiences should be selected for their influence on the learner's total development and growth.

(v) Learning experience must be **Optimal** in terms of learners learning the content.

Learning Environment

When the learning environment is suitable, the student feels stimulated to think and learn more about the subject (Trigoni, N. 2005). The physical location of the course should be carefully chosen, because of the need for "the alternate application of lecture-style and laboratory-style teaching" in areas such as science and engineering. It is very important to pay attention to the light and temperature conditions in laboratories equipped with sensitive equipment, such as computers and analytical systems.

3.0 Curriculum Content

In developing a programme in Occupational Therapy, the University of Minnesota observed that the order or content in the curriculum is governed by four criteria **(http://www.ot.umn.edu/students/prespective_students/Curriculum/design_statement.htm)**:

(i) Content should progress according to the ease with which ideas and skills can be acquired and integrated. It should be simple, straightforward, easily learned and be closely allied to previous learning presented before difficulty, more complex, more-distantly-related information or skills.

(ii) Content that focuses on (1) a single isolated system, diagnosis, performance area; (2) performance, component; or (3) performance context, should precede content that combines several systems, diagnoses, performances areas. Components or contexts that are concrete, objective and highly structured should be addressed before content that is more abstract, subjective, less structured, or more individually interpreted.

(ii) Content progresses from people with stable conditions/problems to those with changeable status. Example: Deferment for students whose sponsors are dead etc.

Criteria for selecting content

In designing the conte4nt of curriculum,, we must provide answers to these questions (Hutchinson, K., 1997) (http://www./flinders.edu.au/tech/inclusive/checklist.hit):

(a) Does the content acknowledge diverse cultural values?

(b) Does the content value and build on diverse prior learning, experiences and goals?

(c) Does the content contest a uniform view of knowledge

(d) Are opportunities provided for students to access knowledge and skills that are contained in the course?

(e) Is the "assumed knowledge" made clear in the stated prerequisites of the course?

(f) Does the content acknowledge the rapid changes in information and communication technology?

(g) Does the content acknowledge gender issues?

(h) Is the content valid? It must agree with the goals that it intends to serve.

(i) Is the content significant? Does it convey or have a meaning: expressive, suggestive or implying deeper or unstated meaning? Is it notable or consequential?

(j) Is the content interesting to the learner? We should note that the student might not ever know his own interests!

(k) Is the content (i) useful, (ii) learnable (iii) feasible?

Useful: in language activities
in health activities

in citizenship activities
in social activities
in religious activities

Learnable – to the abilities of the learner

Organization of Learning Experiences

The question now is how educational experiences can be organized to reinforce each other in such a way as to produce changes in the learners in the direction of the stated education outcomes.

Organization is a crucial task in curriculum development since it greatly influences the efficiency of instruction and the degree of learning in any educational setting (Nwuka, 1985). The experiences obtained must be arranged in such a way that they support and reinforce each other.

The relationship between the experiences provided in first-year Engineering Drawing I and second-year Drawing II are considered a vertical relationship. When what is learned in first-year Engineering Drawing I is related to what is taught in first-year Machine Design I it is referred to as a horizontal relationship. If the first-year and the second-year Engineering Drawing experiences are related in a vertical way they reinforce each other and increase the chances of building on what is learned. This leads to better achievement of desired objectives. If the experiences in the first year Engineering Drawing I are suitably related to the experiences in first-year Machine Design I, they may reinforce each other and result in a more meaningful learning experience. The two kinds of relationship are shown in Figure I.

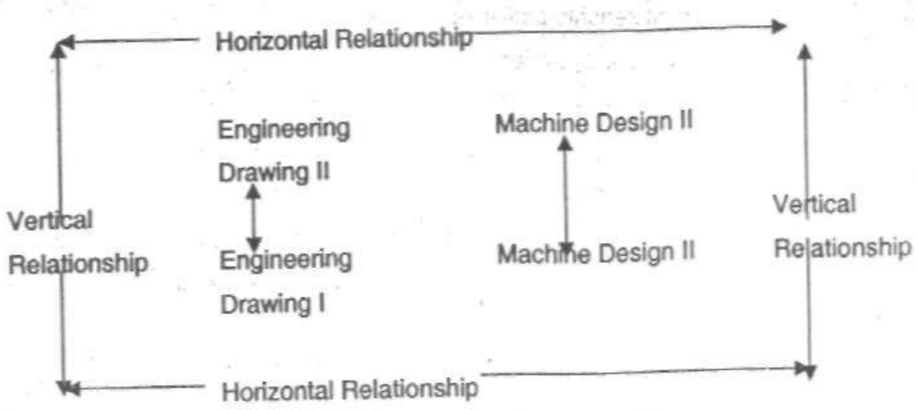


FIG. I Vertical and Horizontal Relationship in Learning

The major criteria to be satisfied by an effectively organized group of curriculum experiences are (http//webinstitnteforteachersOrg/200/curriculum/homeroommodulkes/curriculummTerms/ext.):

1. **Continuity**: - This refers to the vertical reiteration of major curricular elements within any field of study. If some kinds of experiences are brought into continuing operation, over time, they produce a cumulative effect that brings profound changes in the learner.
2. **Sequence**: - This refers to experiences built upon preceding curricular elements in more breadth and detail. Sequence therefore emphasizes higher levels of treatment. It is another aspect of vertical relationship in curriculum organization. It requires that content and the materials be put into a kind of order of succession.
3. **Integration**: -- This gives the student a unified view of all the elements dealt with in the various areas of the curriculum. It is concerned with the utilization of curriculum elements from one

subject area to the other subject areas in the curriculum. It is very much like solving problems in Arithmetic as well as in other disciplines. This is therefore associated more with the horizontal relationship in the curriculum organization.

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