Individualized Instruction And Technology

The book "individualized instruction and technology" deals with individualized method of learning. It treats different methods of individualized learning process in terms of the best that is known, both old and new as well as the experimentation and development taking place across the nation in crucial efforts to upgrade the quality and the productivity of individual educational programs at all levels. Individualized instruction is a new way to think about problems of individuals learning to find workable solution at higher levels of education. Instructional technology adds a new applied behavioural science approach to the problems of individual learning in that it makes use of pertinent technological methods developed in individual manner. It also incorporates the management principles of cost effectiveness and efficient use of available learning resources and instructional personnel. Individualized instruction typically employs a variety of print, audiotape, slides, filmstrips, motion picture materials use by students independently, thus freeing teachers to generate materials and to work with individual student as needed.

Dr. Ann Umeh is a lecturer in the department of Science Education, Federal University of Technology, Minna. Her wealth of experience in the field of Educational Technology has helped her to author several articles published in reputable jouranls, which include this book. She is also a member of different local and international working groups.

978-3-639-76543-4

47

Scholars' Press

Ann Umeh

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Individualized Instruction and Technology in Higher Institution of Learning

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Impressum / Imprint
Bibliografische Information der Deutschen Nationalbibliothek: Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über http://dnb.d-nb.de abrufbar.

Bibliographic information published by the Deutsche Nationalbibliothek: The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at http://dnb.d-nb.de.

Coverbild / Cover image: www.ingimage.com

Verlag / Publisher:
Scholar's Press
ist ein Imprint der / is a trademark of
OmniScriptum GmbH & Co. KG
Heinrich-Böcking-Str. 6-8, 66121 Saarbrücken, Deutschland / Germany
Email: info@scholars-press.com

Herstellung: siehe letzte Seite /
Printed at: see last page
ISBN: 978-3-639-76543-4

Dedication

This book is dedicated to Almighty God, the beginning and end.

Acknowledgements

Am most grateful to God Almighty for the grace, knowledge, wisdom, understanding and strength to carry out this work. I say thank you Lord.

My appreciation goes to my children and husband for giving me the conducive environment in the family to work on this book.

Am also highly grateful to Andrei Gisca Acquisition Editor for accepting to publish this book. I appreciate your efforts and say thanks to you all. God bless you.

Preface

The book "individualized instruction and technology in the institution of higher learning" deals with individualized method of learning. It treats different methods of individualized learning process in terms of the best that is known, both old and new as well as the experimentation and development taking place across the nation in crucial efforts to upgrade the quality and the productivity of individual educational programs at all levels.

Individualized instruction is a new way to think about problems of individuals learning to find workable solution at higher levels of education. Instructional technology adds a new, applied behavioural science approach to the problems of individual learning in that it makes use of pertinent technological methods developed in individual manner. It also incorporates the management principles of cost effectiveness and efficient use of available learning resources and instructional personnel.

Individualized instruction typically employs a variety of print, audiotape, slides, filmstrips, motion picture materials use by students independently, thus freeing teachers to generate materials and to work with individual student as needed.

The topics treated by the author in this book are mere issues, but they are issues that are contemporary in nature. The book is divided into four chapters.

Chapter one is the general introduction and pays more attention to what individualized instruction is all about. Chapter two looks at pattern of individualized instruction. Chapter three takes up the role of instruction. Chapter four takes up individualized instructional development. It is hoped that the topics treated in this book will be helpful to the students and lecturers of educational technology and those in relevant field.

Table of Contents

Chapter One

1.1. Introduction

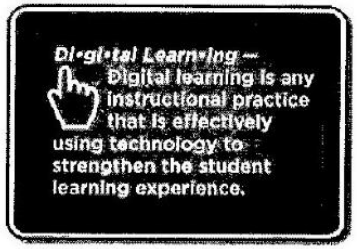
Individualized instruction is one of those elusive goals that educators have talked about for years, but with a few notable expectations that until recently they have done relatively little about. Individualized instruction is about individuals learning and is almost as old as education itself (Umeh, 2013). During the period of the Roman Empire and the middle ages, Individualized instruction instructions was carried on by tutors for sons of the well to do, individually or in small groups. It was not until after the development of universities in the Middle Ages and the advent of printing in the western world in the mid-fifteenth century that lecturing to a large group came into prominence (Wonders, 2012).

As efforts increased during and after the colonial period in this century to make education available to more and more young people, it was inevitable that group or class techniques would predominate and that the teacher would control the learning experience. In essence, this system has remained as an almost universal pattern for education across the world today. Much of the present widespread criticism on education appears to be based on a combination of factors such as rapidly increasing costs, on one hand, and inadequate or questionable results of the whole education enterprise, on the other hand. We often hear much of accountability as a requirement for continued public support of school and college programs. For the good of education, this pressure is probably long overdue, since it is forcing on the need to look with new intensity at processes in education, including the conduct of instructional programmes. Though the problem may be broader than instruction alone, there is no doubt that much of it is centered there. Reliance on instruction in class-size groups as the primary model for education has long been a target of criticism both within and outside the educational profession. A leading clinical psychologist decries the manner in which youthful enthusiasm and curiosity tend to become lost in our schools.

Numerous efforts are being made as to correct some of the deficiencies present in schools and colleges by individualizing instruction in various ways. Those efforts are

characterized by rather complete changes in perspective among curriculum planners, teachers and administrators in relation to both what is important for students to learn and how it can be organized and taught. Most of such efforts are heavily dependent also on instructional technology in variety of forms, including instructional development procedures that involve careful diagnosis of the problem and needs of individuals and groups as a basis for designing viable solutions.

1.2. What is Individualized Instruction Technology?



Basically, individualized instructional materials and techniques to the individual differences found among learners. In order to develop effective programme of individualized instruction, first of all there is need to be aware of the various kinds of individuals' differences that exist, so that they may then be dealt with in some kind of orderly fashion (Ronard, 2012).

Ideally, however a different set of learning materials and experiences should be designed for each and every student, the impracticability of such solution is fairly obvious. In any case, students clearly have many common characteristics and needs, as well as individual differences that must be accommodated. The task therefore is the accommodation of both the common and the individual needs and achieving the proper balance between these viable and manageable possibility.

In view of a long tradition of group instruction, successful efforts are being made to introduce individualized instructional technology programmes into schools and move toward a better balance between group and individual's needs. Actually, group work is a normal and essential part of many individualized instruction technology programmes (Rossan, 2013). Some programmes start as a unit with a general presentation and students than select individual's topic or contracts to pursue. In most case, students are entirely on individual's tasks but meet together to use the equipment.

One important thrust toward providing for individual differences is programmed instruction. In most cases, extensive work in programmed instruction is provided. Failure to provide for individual differences among students is perhaps the greatest single source of inefficiency in education. There much evidence that Skinnerian self-teaching programme actually leaves the teacher in complete control and the only variable in such programmed instruction that truly individualizes it is self-pacing. Programmed instruction technology has shown little improvement over other methods in adapting learning experiences to the aptitudes, interest, learning styles or other intrinsic characteristics of individuals' learners (Jossy, 2011).

Potentially, through technology and different means of organizing learning experiences, it is possible to provide for many more individuals' differences among learners than the pace at which they can learn.

1.3. Nature and Characteristics of Individualized Instruction Technology

It is clear that educational system has been dominated for several generations by group or class techniques and that it has been assumed that individual student will somehow learn from those techniques, or may not, particularly those with learning deficiencies. This group of students must learn to survive in the system and in the society. At best, group instruction is less effective as it does not provide optimum development for individual learners, whether they are good, average or poor learners. Much of the argument for improvement back on the traditional belief that lower pupil-teacher ratios would somehow solve the problem (Roggers, 2011).

This position is based on the theoretical assumption that with fewer pupils the teacher could give sufficient individual attention to each of them to correct whatever deficiencies may exist by reason of inadequate prior learning, inadequate economic and cultural backgrounds, or curriculums' inadequacy to meet the needs of today's students. The assumption according Roggers (2011) is based on two counts, first, the problem is not all that simplified, second no teacher can deal adequately with the myriad individual, personal, social and academic needs even more than 10 up to 25 pupils.

Furthermore, the unfortunate experience about small-class proponents is that there is little evidence that the pupils of 20 or 25 years ago were limited to 25 to 30 pupils and they learn more or even better than those pupils today in crowded classrooms of 35 to 45 pupils. As a matter of fact, with the exception of spelling, the students of today with all their problems appear to be averaging more than a grade level ahead of where their parents were at the same age, according to comparable achievement test records.

The source of the problem, actually is that the need to know has advanced considerably more than one grade level in the past generations as at least by the complexities and demands of our radically changing in the society and troubled educators that the educational system as it has been is inadequate to meet this challenge. More and more schools systems therefore are turning to individualized instruction technology programs as one part of the solution. But in the "real world" of tight dollars and demands for increasing accountability, there is no way for individual instruction.

programmes to be adequately financed without counter balancing applications of large-group and small-group instruction, self-instruction, and other cost-effective techniques including the use of mass media, where these are adequate for other parts of the solution.

Educational system itself must change, in regard, there will be more accompanying organization, curriculum and staffing changes during the years ahead. Teachers aids, differentiated staffing, flexible scheduling, community schools that are really involve the community and competency-based certification are come. In curriculum and instruction, we may expect instructional development procedures to come into wide use as more systematic means of identifying and solving complex educational problems in the most cost-effective manner. We many as well expect educational technology to become an essential component in the educational technology system of the future, with machines taking over those parts of the instructional management process which they can handle effectively, thereby freeing the talents and energies of teachers for the more creative and vital aspects of teaching

students development and design and preparation of all important software to be used in the machine.

Individualized instruction can perhaps be viewed in a new light as part of a new educational system which already in the making.

1.4. Types of Individual Differences on Instruction

The magnitude and complexity of the task of adapting instructional programme to individual differences became evident when we look at the various types of differences which have been and studied by psychologists in relation learning.

There are four basic and distinct types of individual differences. They are: personality, cognitive, inquiry and sequencing variables. These four variables and a few of the findings relating to planning instruction to accommodate individual differences merit further discussion.

1. Personality individualized variables

Common sense tells us that personality traits have a marked influence on how students react to various kinds of instruction. Many studies also support this conclusion. Students who are flexible in their thinking and who are able to cope with ambiguity and inconsistency seem best able to profit from the give-and-take of class discussion and problem-solving situations. On the other hand, students who seek definite, concrete, and who see themselves in more or less stereotyped ways tend to be more comfortable and content in more highly teacher-centered and specifically directed kinds of activities.

Numerous studies bear out the fact that there are distinctive learning styles which seem to correlate rather closely with personality characteristics. For example, students having a strong interest in social acceptance and corresponding need for it have been found to perform poorly with programmed instruction, while learners who appear to be more test-anxious perform successfully with it.

Another study shows that students tend to react quite differently to; on the other hand, content that is governed by logical and inherently "meaningful" rules and on the other, content that is governed by "arbitrary" rules. The difference in reactions correlates highly with whether the students are extrovert or introvert types, high or

low on test anxiety and high or low on technological and social esthetic interests. A study of a group of 16years old confirms the fact that extroverts seem to learn best with unstructured material and situations such as the discovery method, whereas introvert-type students seem to learn best with structured and prompted learning situations.

2. Cognitive individualized variables

Individual differences dealing with knowledge, perception, and understanding of material at various levels of sophistication have probably been studied more extensively than any other, since they relate most directly to the traditional objectives of education. The result of this studies show contradictory results. For instance, the correlation between the results of general ability tests such as the IQ test and individual learning performance has generally been negligible. On the other hand, when specific relevant abilities such as adding, subtracting or following directions are studied the correlation between these abilities and performance is clearly positive (Williams, 2008). These findings revealed strongly the importance of careful and relevant diagnostic procedures as a preliminary to designing individualized instruction. The research of Rogers (2009) and Davis (2008) investigated the interaction between individual differences and several methods of presenting programmed instruction, they made a significant discovery. This was that of two specific sources of individual differences, prior learning and general abilities, the former appears far more useful in determining the best instructional method to employ with a given students.

3. Inquiry individualized variables

Differences among individuals in attention in recent years as educator have undertaken to open up the lock-step, teacher-dominated patterns of classroom instruction by means of flexible scheduling, team teaching, the discovery method and differentiated staffing. According to Demark (2010), the inquiry process among teachers in training in a situation which through simulated, was sufficiently realistic to achieve a fairly high degree of emotional involvement. They discovered significant and important differences between effective and ineffective "inquiries".

4. Local Sequencing Individualized Variables

A considerable number of studies have been done on programmed instruction materials to assess the relative effect on achievement of random versus logical sequences (Piper, 2000; Leith, 2000; Fry, 2001). Though it might seem obvious that logical steps or sequences would be essential to effective learning with programmed instruction. This actually appears not to be the case with most of those materials that have been employed. On the other hand, amore recent study showed no differences between random and logical sequences and between high and lower ability students on the low-order tasks but did find that logical sequence students on high-order complex, problem-solving programmed instruction sequence (Davis, 2010). In consequence, a randomly arranged learning experience of other types may also be more beneficial than systematically arranged instruction. Therefore, the hypothesis that inquisitive individuals can control their own learning or instructional strategies and thereby learn more and be more satisfied than by conventional means.

Individual differences do appear to exist among students within this specific dimension of students' control of instructional functions. The highly inquisitive students who are also high in aptitudes can function to advantage in controlling their own learning. However, students with less aptitude, even though highly inquisitive, appear to do better when the sequencing and controlling of the learning experience are performed by the instructor. There are several important types of individual differences that affect learning. The first and most obvious of these is the different paces or speeds at which different individuals learn. The fact is that any two individual students are likely to differ significantly from one another in several or more of these variables suggest how very complex the task of truly individualizing instruction can be. It also explains why most individual instruction programmes developed have been able to deal most effectively with only the first kind of differences the different speed or paces of learning among individuals. Notwithstanding, many school systems are making determined efforts in their individual instruction. Programmes to accommodate some of the other types of

variables as well, and how educational technology contributes to these individual instruction programmes.

1.5. Types of Individualized Instruction Technology

Individualized instruction technology programmes are oriented toward individual rather than toward groups or class techniques. Theoretically, all kind of individual differences are taken into account in designing individualized instruction programmes, but in actual practices the only common characteristics found is self-pacing (Edward, 2007). In other words, the student can take as much time as he needs to complete an assignment or a unit of work, although depending on how a specific programme is designed and administered. However, variables other than speed of learning alone may in some cases be accommodated. Under many other programmes, it would appear possible to accommodate individual instruction. In addition to pacing, individual curiosity or inquiry levels, and perhaps in ordering and sequencing of learning experiences.

There are four major types of individualized instruction technology, based primarily on who determines the methods, materials and media to be used in achieving them.

1. Individually prescribed instruction:-Individualized instruction technology (I.I.T) programmes establish common learning objectives. In such schools all students may be required to achieve a certain proficiency in reading, spelling, mathematics and so on, and to go through a specified series of materials and exercises to attain the desired levels of performance. The principal individualization in this instance is that the student does the work at his own pace. In schools, behavioral objectives are clearly specified and well-defined systems of materials and methods of instruction have been developed based on careful diagnosis of individual students and their learning needs. This is known as individually prescribed instruction technology programme (I.P.I.T). This implies placing students at the proper level in each subject area and prescribing individual learning sequence for each student.

2. Self-directed individual instruction in self-directed individual instruction programmes:-The school still sets the objectives but give s the learner degrees of

latitude in determining how he will achieve them. In that situation, such schools have learning laboratories or resource centers with wide varieties of pertinent learning materials available. These schools provide varying degrees of guidance, but the individual student is left largely to his own resources in selecting the materials he will use and in seeking assistance when he desires it. The school faculty place high value on individual learning styles and on individual differences in approaching solutions to learning problems. They feel that prescribed sequences or systems preclude the individual's development of his own unique interests and talents and deny him the freedom to find his own best methods of learning. Such individualized instruction programmes are characterized by well-developed testing programmes, clearly stated objectives, and well-equipped as well as well-developed learning resource centers.

3. Personalized individual instruction technology (P.I.I.T):- The prescribe and self-directed types of individualized instruction already discussed were typically found in required subject areas such as language arts and mathematics. The third type, "personalized" is most often found in some of the sciences, the social studies, and in elective courses. In this case, the student chooses his own objectives from a sizable list of possible objectives. In other words, he selects the objectives that appeal to his interests. Once these are selected, he then follows a prescribed programme with specified materials. According to Rosaq (2010), this type of individualization in a number of secondary and university schools offers a choice of more options in social studies subject. This means that a student may enter into the classroom with his teacher specifying what he will undertake and what he will achieve in furthering some specific aspect of his own learning at his own pace.

4. Independent study instruction technology:- This type individualized instruction provides the most complete degree of freedom in that students pick both their objectives and their methods of study. It is not surprising that this type of programme is typically reserved for the above-average students. Interestingly enough, this freedom is also extended to some students with creative imaginations who may not have a particularly strong academic background. In the situation, the means and materials of learning are prescribed once the options have been chosen. School

systems placing high value on self-direction and individual learning styles range from those that require students to select from a predetermined set of behavioral objectives and curriculum goals but hen permit the student to select his own means of attaining them to those in which some students are left quit free to establish both their goals and the means of achieving them.

Chapter Two

2.1. Pattern of Individualized Instruction

The pattern of individualized instruction is purely programmed to aid the individual student to learn, and learn effectively. This pattern is therefore, a programmed instruction in which the learning instructions are presented in carefully structured steps and the steps depends on the individual student and the nature and pattern of materials to be learned (Oboh, 2012).

The method engenders student's greater participation in what is being taught; it allows the student to go on his pace; and allows the teacher to assess the performance and the skills of the student. However, the pattern may not produce the desired outcome as the students, are not given the opportunity to interact with other students, and compete favorable with them.

Reflecting on this pattern of individualized instruction, it reveals a high degree of consideration on the potentials of the individual to effectively influence learning. Virtually all the patterns, aside from the pedagogical pattern, are deeply anchored on self-learning. No doubt, a process of social transformation is taking place as more individuals are striving to become part of an emerging learning society. Clearly, the pattern has helped students to acquire basic knowledge and skills on their respective disciplines or subjects (Oseta, 2012). Although, despite an underlying commitment of teachers, shortcomings remained in the application of the methods. Therefore, teachers' individual initiatives are required to bring about the desirable strategic results.

According to Roue (2011), teaching pattern that does not focus sharply on the intended learning outcomes for students, and rarely reflect on the school's practice and aim, would remain defective not only in application but in its substance. There has always been port measurement of impact of the methods on improving teaching and learning especially in the higher institution of learning which makes it difficult to assess the potency of the methods. Still learning is usually enhanced further by informative and helpful feedback from the teacher. They ought to record their progress and indicate the steps they have taken to improve on students' performance.

Although other factors such as teacher's inadequate detailed subject knowledge to help students, superficial questioning with limited challenges, and inadequate clearly stated objectives, often constrain effective realization of teaching achievements, the application of technology in instructional system delivery has provided greater hope for success of the teaching pattern. Any teaching and learning pattern that does not reflect the innovation systems approach to learning will not achieve the desired goals (Umeh, 2012).

2.2. Procedures and Facilities for Individualized Instruction

The objectives of individualized instruction programmes vary considerably. The instructional procedures and facilities used to put these into practices vary even more from highly prescribed activities, irregular classroom settings on a fixed class period schedule to situations in which some students have complete freedom of choice as to the topics they will study, the materials and methods they will use to study them, and when, where and how long they will study them (Demond, 2011). In between, are 911 possible combinations of the element of how the work is laid out, the settings in the student does his work, and the kind of time blocks and time allowances made. A considerable variety of configurations could obviously be expected, such variety does, in fact, exist in schools around country that have individual instruction programmes. Utah (2012), stated that the uses of the continuous progress plan and an ungraded system in which emphasis is placed on providing appropriate learning experience for each individual student, these experiences are designed by the teacher, who encourages the students to participate and then works with him, guiding him to achieve maximum growth through the experience.

2.3. Inherent Constraints on Individualized Instruction Technology (ICIIT)

It is important to note that in any give school, individualized instruction is seldom provided for all students in all the programmes set up in all subjects. This situation is a natural product of these primary constraints.

1. Size of the Task: The first constraint on individualized instruction arises from the obvious fact that starting an individualized instruction programme in a traditional

school is a sizeable task. Though some materials for individualized instruction are available commercially in a few subjects. Most materials must be generated from scratch within the school system. As might be expected, a school starting an individualized instruction (I.I) programme usually beings with an area of critical need, such as reading or mathematics, and expands gradually from there. For instance, elementary school, contracts are used in Mathematics, Social science, and English. Each of the three teachers developed contracts, spanning several grades, for her subject matter area. The teacher remains in a self-contained classroom while the students rotate class. However, within any class students are working together on various levels or grades of contracts.

2. Adaptability of Teachers: The second constraint on individualized instruction arises from the fact that some teachers are better suited to working in individualized instruction programmes than others. In actual sense, some schools system has individualized instruction sections along with traditional section in the same subject. If the system is to function effectively, teachers frequently need to coordinate their efforts as members of team and to change their familiar role controlling instruction to an unfamiliar role-facilitating individual learning. Some teachers and learners may find these transitions uncomfortable and difficult. Recognizing such difficulties, many administrators deliberately avoid forcing the issues, knowing that teacher cooperation is essential to successful innovation. On the other hand, their doubtless are many administrators who, for one reason or the other, fail to take the initiative in moving toward individualized instruction, tough many of their teachers would appreciate it.

3. Suitability of subject content: The third constraint on individualized instruction arises from the fact that there are subject which by nature require group activities, as in some aspect of physical education, dramatics, group singing, band, and orchestra. Also to a substantial degree, small or large group activities are important in many subjects where the give and take of discussion, the socialization influence of cooperative project, and consensus of group discussions provide important lesson to be learned. Consequently, many schools system with

individualized instruction programmes arrange for some group activities along with individualized learning. This method normally requires flexible time scheduling plus individual constraint involving several or more levels of difficult, so that most students can profit from both individualized and group work on the same topic.

2.4. Elements Accommodated in Individualized Instruction Programme

Elements of individualized instruction cannot be overemphasized; therefore, it is pertinent to consider these basic elements which must be accommodated in any individualized instruction programme.

I. How learning activities are directed or prescribed: Learning activities may be prescribed in considerable detail by the teacher or by the materials themselves. The learner may have considerable latitude in selecting his objectives as well as the methods and materials he will use to attain them effectively.

II. Instructional setting: The instructional setting may range from an individual classroom containing materials for a single discipline, staffed by a single teacher, to multiple learning areas with wide ranges of equipment and materials staffed by team of teacher's aides and other assistants.

III. Time scheduling: A time schedule may be set up for an individual student or for the subject he is studying, or he may have a large block of time, schedule several activities within this time block, and use it without reference to a detailed schedule to study or work on whatever he wishes. Flexible schedule or continuous progress plans are characteristic of most individualized programmed.

2.5. Representatives Examples of Individualized Instruction

In the developed world, higher institutions have a continuous progress plan for skill subject and prescribed learning activities which are sequence. Though each student's time is scheduled, the procedure is not lock-step and children are free to alter the sequence, particularly in science and social studies subjects. Their interests are a dominant factor in choosing activities. Teachers and support staff prepare a folder of materials for each student for each day's work and needs, based on a diagnosis of his previous work and needs. Multiple-learning areas are used, and teams of teachers are assigned to work with individual students as needed. Group

activities are also employed from time to time, though on a very flexible basis. This plan leads to a highly effective use of staff and as well as students time.

In countries like New York, USA, the use of individualized instruction is selected in some part of the country. There are centralized learning that employ considerable amounts of technological materials. In that regard, teams of two teachers and then students are assigned to a group of about 75 learners. In the elementary grades, the learning is directed by an instructional team, while in the higher school, the students are directed their own instruction, they have more freedom to select the units on which they will work, although, all objectives are prescribed and the activity guides spell out procedures and materials to be used. At higher level of education, students assume increasing responsibility for achieving prescribed objectives. Although, in lower levels of education, schools tend to use learning resources centers as the core or hub of individualized instruction learning programmes. In fact, such resource centers are located centrally, with classrooms and other activities spaces extending outward around them.

On the other hand, junior and senior schools tend to continue to use traditional classrooms in this regard; rooms are assigned for each for specific class periods in the usual manner. Each student in the classroom, however, works on an individual activity and at his own pace. He uses materials for the most part designed and prepared by the teachers. Behavioral objectives have been carefully spelled out and special materials prepared at various levels in mathematics, language art, social sciences and science. The student is placed at the level of deemed best by the teacher in charge but may transfer to any other level at any time, depending on his performance. He must complete a unit satisfactorily, however, before moving to a more advanced objectives or unit.

2.6. Individualized Self-instruction

When students are allowed to select them own instructional activities as in schools which stress that student learn how to learn and plan their own learning instructional procedures, of course, are modified from the prescribed situations. Yet there are some schools that operate independently, learning plans on a time scheduled basis in this

situation, each student at the beginning of each day maps out how he plans to spend his day, and his plan is checked and his progress monitored by a teacher. Though the student decides what happen to be unavailable, an alternative is worked out with him by the teacher. The student is required to stay with the time scheduled worked out at the beginning of the day. This arrangement has the advantage of optimum use of resources, which are extensive. Many different learning materials are available in the large learning schools.

According to Denson (2011), elementary schools start out the day with group activities, but as soon as the initial objectives for the day have been attained, students move into small group where they work on projects or topic of their own media and other learning materials. He maintained that each of these is organized by a teacher who is a member of team and a specialist in one of the subjects – such as social studies, mathematics, science or language arts. Learning centers contain all basic subjects, and within each students. Students have complete freedom of choice I selecting their own learning activities. There is also a team of teacher specialists in music, dramatics, and physical education who organized group work.

This various pattern and self-instruction plans are found in higher schools that have moved into individualized instruction programmes. The nature of the approach used in each case is influence primarily by the philosophy of the school. Most programmes have continued to emphasize content objectives and carefully try to design programmes which provide assurance that these objectives will be met by each individual self-student. In the process, the extent that they are successful, such content focused programmes doubtless contribute to more positive attitudes of students toward learning and toward school and toward their individual self-images.

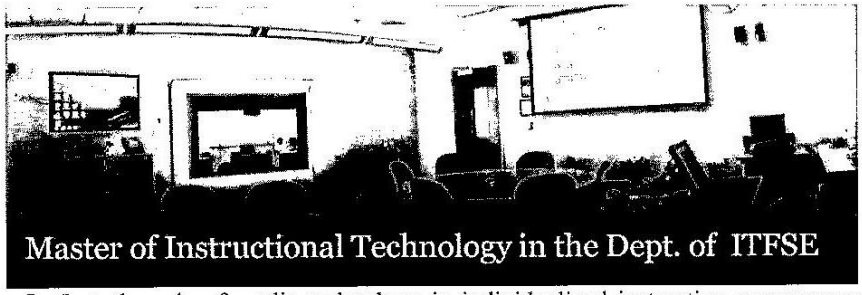
Other schools, however, make the latter type of more intangible but vitally important objectives a primary focus of their programmes and design learning activities to contribute directly to their attainment (Edward, 2010). He observed that, at the elementary school level, the children operate a uniquely and awarded for academic achievement and in turn are used to pay fines or purchase special privileges. Students are also paid in tokens for special academic work. Though

resource restraints are very real, but it is important to note that many schools systems have managed in spite of such limitations to develop effective individualized self-instruction programmes which, through less perfect than they might like. Nonetheless, individualized self-instruction is a step forward from the traditional and group-oriented programmes.

Chapter Three

3.1. Role of Media Technology in Individualized Instruction

The role of media technology in individualized instruction cannot be overemphasized. It has been revealed that media and educational technology in individualized instruction programme are relatively important (Hoppins, 2011). This is intentional until one has carefully diagnosed the individual needs of his students and has clearly specified his objectives. He is in no position to select the alternative materials and methods which are most likely to help students to achieve the objectives successfully.



In fact, the role of media technology in individualized instruction programmes, that is, the need to overcome the problems involved in simply developing or acquiring the large amount of media materials necessary for individualized instruction programmes and planning their uses has tended to over shadow the need to test and validated these materials and methods for specific types and levels of learners (Donald, 2010).

Individualized instruction media in general are an improvement over previous traditional group instruction practices which we also know. But how much better these media materials are and whether there are not still better individualized instruction media programme options available remains to be determined. These materials refer to both materials prepared locally by teachers and materials commercially produced which teachers select and adapt for individualized instruction purposes. Materials specially developed as a part of founded or cooperative individualized project are more likely to have been tested and revised, but such

testing is likely to be limited to content achievement objectives alone and to student populations in a single area. Because of those factors and because of objectives which may be unique to individual schools, there is no real substitute for teaching staff that first identify and specify their own objectives and then identify and test the materials and procedures to be used in attaining those objectives. Such efforts are time consuming and demanding, but they are essential to effective individualized media instruction programmes.

3.2. Nature and Materials Required for Individualized Instruction

Questions of materials and methods are complex enough with well-designed group-oriented instruction, with individualized instruction programmes, the complexity is multiplied. Since individualized instruction programmes require, if nothing else, that the student work at his own pace, each student must have his own set for materials to work with. When individualized instruction programme encompass differences in addition to pacing alone, still greater amounts and varieties of materials are likely to be required. In this regard, if students are to be encouraged to explore and develop their varied interests independently access to a wide range of relevant learning materials is clearly necessary. It is not to be expected, of course, that all possible avenues of independent inquiry can be anticipated and accommodated within a school. Fortunately, the bright, inquisitive youngsters, if given the opportunity variety of materials such as are available in well-stocked learning resource centers, can usually proceed very well on his own and move on to outside sources if necessary. The needs of most students are more likely to be met by carefully designed, sequenced materials, particularly in programs where a substantial portion of the activities is prescribed.

As pointed out earlier, there are some good individualized instructional materials in a number of subject area available form commercial sources. However, individual teacher must generate the bulk of the materials or through selecting and adapting existing materials. In such circumstances, teachers tend normally to employ the medium they know best, that is, the written and spoken word. Many programmes initially consist largely of printed excerpts from texts and workbooks, teacher-

prepared mimeographed materials, and audiotapes. Once a programme is moving alone, however, its designers begin to see how improvements and shortcuts can be made and they being to become more sophisticated in presenting ideas in graphic, pictorial, film, or recorded form.

Consequently, many learning centers now have packet of self-instructional materials containing locally produced audiotape which provide directions to the students, along with workbooks, sequences of programmed instruction, and such illustrative materials as slides, films strips and 8mm cassette motion picture film loops. It is also important to keep in mind that individualized instruction programme seldom are completely individualized. There are some small-group and occasionally some large-group activities for which more traditional uses of films and other media are appropriate. But most individualized instructional activities are individual, and it is here that media, used creatively and carefully combined with reading materials and programmed materials, can make their major contributions.

3.3. Emphasis on Individualized Instruction Programmes

Although most higher institution of learning, when starting an individualized instruction programme, tend to interpret their materials needs largely in verbal terms. Students in such higher level schools have already access to media centers where they consult filmstrips, slides, films, and tape-recorder. This emphasis on using technological sources of information such as information processing systems in expected to result in the current book materials as time goes on.

According to Davis (2009) self-instruction and research (SIR) is an example of a system employing both prescribed and self-directed activities. The self-directed is of a prescribed nature, but as the student progresses in his ability to handle resource materials the programme becomes more a self-directed type in which the student follows major guideposts in the curriculum but directs his own learning activities. As student is in the institution of higher learning, if the system works as planned, it should be possible for a teacher to indicate an objective for the student than to pursue independently his own mean of meeting that objectives. In the process, the students

are making considerable use of cameras and media in generating their own report study and developmental materials.

Davis (2009) observed further that the Punahou and Honolulu schools, one of the largest and most distinguished higher institution of learning in the United States, has moved into the use of videotape recorders and other audiovisual materials in its individualized instruction programmes in physics, economic, art, music and languages. They use this equipment for a variety of student purposes, as well as for teacher self-evaluation.

Individualized communication has been able to extend students achievement in mathematics and language arts significantly at both the elementary and higher school levels of education. The Computer Assisted Instruction (CAI) system, which includes both visual and audio components, is located in the instructional media center, where access is provided to films, filmstrips, tapes and other media materials, as well as books and reference material.

3.4. Types of Individualized Instructional Materials

Commercially prepared individualized instructional materials as noted in most schools developing new individualized instruction programmes for students. Most of the instructional materials employed, especially in the beginning are those with which teachers are already familiar with. Commercially produced printed and audiovisual materials of various types and designed. Because many of these materials are designed for traditional class or group use with a teacher present most of the time, rather than for individual self-instruction on more independent basis, much of the material has to be adapted to the new instructional format. This adaptation typically takes two forms:

1. Modifying the physical form and organization of the materials itself, particularly in the case of printed materials.

2. Supplementing the material with written or taped directions, and so on, to make it more suitable for independent use by the student.

As stated earlier, printed and mimeographed materials are the most commonly use type in individualized instruction programmes. Teachers have found ingenious way

to adapt familiar printed materials for individualized instruction when they cannot get copies for all students. In some schools, teachers take two copies of a workbook or text, mount the pages on cardboard and place the mounted pages in a file readily accessible to students. In this way, they are able to make one workbook do for some 20 students. This practices, of course, is not ideal, but it does meet an immediate need for materials in an inexpensive manner, rather an essential under this system, students write their responses on their own paper and then compare then with the answers in the teacher's manual, which is mounted in a similar manner.

Among traditional audiovisual materials, audiotapes are probably used more than any other type, according to Elvis (2011); some of these tapes come in convenient, foolproof cassette form, used with small recorder-playing backs. Various commercial tapes such as poetry recordings and language materials are widely used, often as part of learning contracts. These tapes may either be checked out to the student to be used in his study carrel or, in some schools, provided through a dial-access system. Students go to library, choose what they want to hear from a catalog of recorded materials, and listen immediately in individual carrels by dialing the indicated numbers. Selection of phonograph records is used extensively in many schools, particularly in the institutions of higher learning.

Filmstrips are the next most frequently used audiovisual item found in schools (Marvins, 2010). Marvins observed that audiovisual items are easily handled and used with small rear-view projectors or desktop viewers. They are available in great numbers on many individual topics. In addition, slide sets, maps of various kinds, selected study prints, and other flat pictures are commonly used in individualized instruction. Thus, in printed, tape and filmstrip form large amounts of commercial instructional materials are used in individualized programmes. It should be emphasized, that the commercial materials typically are used in new ways and or somewhat different purposes than those for which they were originally designed. In brief, they are adapted from their original formats and used less independently by individual students in new pattern designed or highly specific objectives. Frequently, a single sequence from a filmstrip or recording is used, rather than the complete form,

and individual slides or pictures are selected from sets to illustrate highly specific points. Although such adaptation is also made in traditional class instruction occasionally, but more characteristic of well-designed individualized instruction units. In adapting commercial materials, teachers also often supplement than with teacher-prepared materials.

3.5. Teacher Prepared Individualized Instructional Materials

The most frequently used materials in individualized instruction programmes are teacher-prepared, rather than commercially produced. The range of materials in this category is almost unlimited. In reading, especially in primary level of education, students frequently tell stories to the teacher, who types them, from dictation on a primary typewriter and blinds them in a folder which is put in the student's library. Since each student is familiar with his own story, this procedure makes for a ready association oral words with written symbols. As they read each other's stories, young students often develop rather large sight reading vocabularies.

Teachers use audiotapes in many ways in preparing materials tailored to their own students. Some of the ways teacher's use audiotapes are:

3. They record directions
4. Explanations of problems
5. Oral test and
6. Practice exercises and other various things that teachers usually talk about.

Many teachers use students or aids or both to record such materials. Although, directions and explanations are often more quickly and effectively conveyed on tape than in printed or mimeographed form, and the familiarity of the teacher's voice may often be an added advantage.

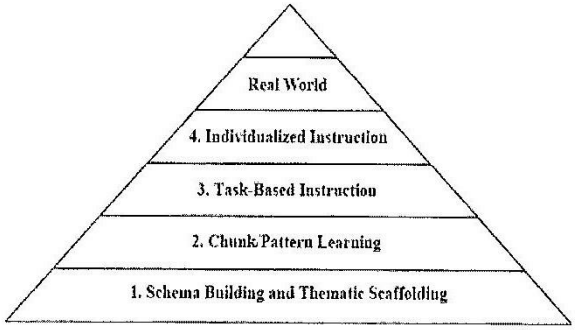
Teachers and librarians normally collect magazine and newspaper articles and illustrations on numerous aspects of science, social studies, and other areas. These single-topic materials are teacher-prepared materials which become valuable reference sources. Teachers also find or generate games and other devices to give students practices in basic skills. Students are then often inspired to bring their own games from home to share with their classmates.

Project-developed materials are yet another teacher's prepared individualized instruction and highly important sources undertaken to develop materials and techniques specifically for individualized instruction programmes. Most of these projects involve carefully coordinated developmental programmes in which a number of school systems are involved. In project developed material, it involves modification and adaptation to accommodate local needs of the students. Project plan for individualized instruction programme should be in accordance with the needs of the learner. Project plan materials are used a guide to conventional materials. The clarified instructional objectives, offer a choice oflearning modes and materials, and provide evaluative procedures.

Chapter Four

4.1. Individualized Instructional Development

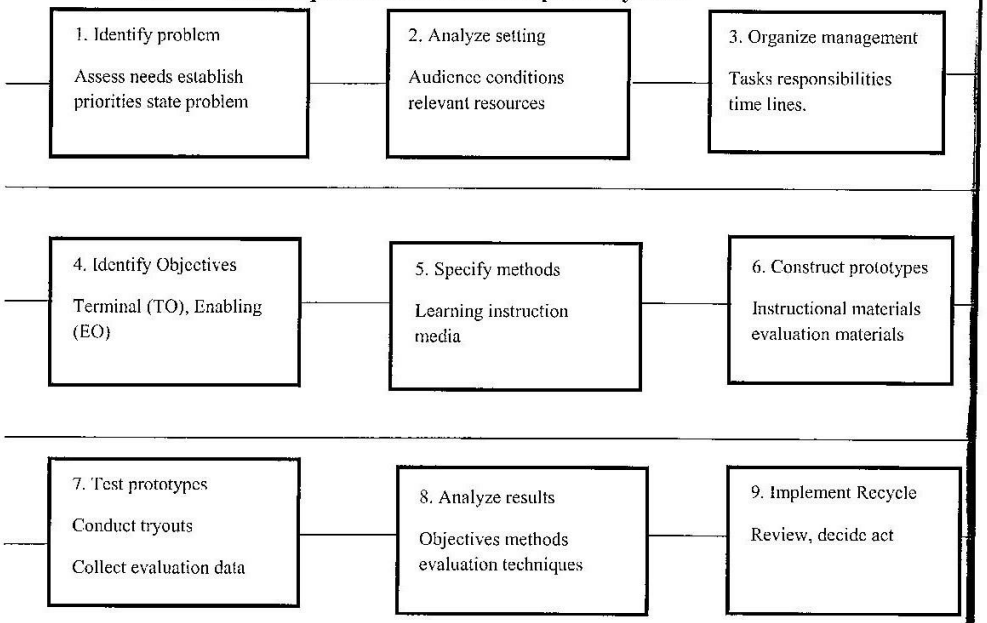
Instructional development means the application of an instruction systems approach to the analysis and development of practical solutions to teaching and learning problems.To conveniently achieve instructional development, there are sub-steps and additional steps to follow. For example, in defining the problem, it is suggested that the science teacher must use considerable care in his analysis of what the problem really is, particularly when working on his own. There is always the temptation to skip this step, under the assumption that we already know what the problem is and to proceed rather directly to the business of finding practical answers. Though such a procedure is undoubtedly necessary at times to meet immediate operational needs. It is quite inadequate for dealing with the fundamental underlying problems of curriculum and instruction. This is so because a brief or cursory analysis of the problem risks committing large amounts of time, energy and resources to treating symptoms, rather than the causes, or to put it in another way, to find answers to the wrong questions.



The problem of definition or identification of step is particularly critical, since everything that follows based on decisions made than the point at which most problem solution attempts in education have gone away. Instructional development is properly a team effort involving teachers, administrators, and specialists in subject, curriculum, technology, and other areas and in some cases members of the board of education. An individual teacher can apply instructional development (ID) in his

daily work and in some instances carry them out on limited topics. In the process, he can gain valuable experience as well as improved learning results.

4.2. Nine steps instructional development system.



1. Identify Problem: - This is the beginning of definition step, as suggested earlier. It is a critical important stage. It involves, the assessment of needs not only n terms of what is perceived to be status quo and what the ideal situation might be, but also in terms of underlying causes of the problem situation. Identification of causes of the problem that can be rectified and determination of their relative importance or priority, than in those terms. If the decision is affirmative and commitment to apply the necessary time, energy, and resources to carry through to an adequate solution. The definition step may require considerable time and study since it almost invariable necessitates the gathering of substantial amounts of relevant information beyond that currently at hand before a valid decision can be reached. It should be noted that in the course of defining the problem, information and factors relating to other phases of the I.D process are also under consideration by the instructional development (I.D) team. Thus the instructional development process is not strictly a linear process, though other stages must be dealt with not only consecutively but also simultaneously during the process.

2. Analyze Setting: - Analysis of the setting deals primarily with the human and functional factors involved in any significant change in the existing system. If a change is to be brought about successfully, we need to be able to recognize and identify the people in the school system for those wishing to pursue the subject further.

3. Organize Management: - As a systematic process, instructional development requires well-defined organization, management, and scheduling. This is particularly true when a group of people are working together on a significant problem or new programme, but the same principles apply if a teacher is working on solving a problem by himself. Controls must be established to assure that tasks assignments are carried out, and that experts assistance is identified and arranged for when needed, also that appropriate communications takes place with others on ideas, problems and other development as they occur. In order to assure task completion by an agreed time, and time lines must be set up to indicate target dates for finishing each of the elements involved in the process. Typically, such target dates are established by using

the Part Programme Evaluation Review Technique (PPERT) method, which starts with the ultimate completion data and works backward to establish the dates when other elements must be ready if the final date is to be met. In fact, when a group or team is working on an instructional development problem, the following management factors are of major importance.

a. Who is given responsibility and the necessary authority to accomplish each specified task?

b. What instructional alternatives to be considered and what personnel material resources are brought to bear?

c. When in sequence can they brought to bear in order to meet the proposed objectives and in order to meet indicated deadlines?

d. How can personnel and material resources be organized and how is the total system to be organized to function in an effective manner as measured by predetermined specified criteria?

4. Identity Objectives – As earlier indicated, if objectives are to be useful, they must be spelled out in terms which will permit determination of whether or not they have been met. There are several kinds of objectives, but there are two in particular which are important in the instructional development process.These are terminal performance objectives (TPOs) and enabling objectives (EOs). The terminal performance objectives (TPOs) are the necessary intermediate step to attainment of the terminal or ultimate objectives. The terminal performance objectives must be spelled out first and then the enabling objectives. Finally, performance measures must be constructed for each objectives of each type so that we can know definitely whether or not it has been achieved.

5. Specify Methods – Once objectives have been established, we reach the point of decision, the point to determine what are likely to be the best methods and materials to employ under the circumstances in order to attain those objectives with our students. The range of possible methods and materials is extensive, but not unlimited. In order words, this occurs when we have to face up to what is practicable in terms of available resources, personnel, equipment, and facilities. Frequently,

trade-offs must be made to reach a workable decision. For instance, it might be desirable to introduce computers for individualized instruction at this stage, but if a computer system is not available, or is not within the reach financially, we have to find the best practical alternative. This is the stage at which we first become concerned with media, along with other materials, and decisions are made in terms both the specific needs of the learning situation and the particular advantages of the various media in satisfying those need.

6. Construct Prototypes – This is the design, procurement, and production phase. Having decided on the kinds of learning experiences and materials most likely to be effective for our purposes, we proceed to spell them out in detail, specifying the readings, tapes films, exercises, and other activities to be tried. This may involve considerable review and examination of available materials as well as consideration of a variety of instructional approaches. In some cases where no suitable materials exist, it may be necessary to produce them. While this process is going on, a part of the instructional development (I.D.) team should be designing the evaluation to be applied.

7. Test Prototypes – Assuming that the preceding steps reasonably complete, we are now ready to try out the package which we have created, this may be alone with a representative group of our own students or with a comparable group from another school. It is important that we collect evaluation data on what works, what doesn't, and why. Ti is also profitable that certain revision will be needed before we try the new system in a regular class in the next step in the process.

8. Analyze Results – Once a full scale tryout is under way, we need to observe all aspects closely and note further adjustments that may be needed either in the instructional design or in the material used. It is important to test along the way to ascertain how well our enabling objectives are being met, and at the conclusion of the unit, how adequately the terminal objectives have been achieved. These several kinds of data provide information for an overall assessment and evaluation by the instructional development (I.D) team.

9. Implement Recycle – On the basis of the results of the full-scale tryout we are in a position to decide whether the new system is ready to be put into regular use in our schools. It may be ready, more than likely, however, it will require certain revisions and retesting before our instructional development (I.D) team is satisfied. In any case, provisions should be made for continued evaluation and modification even after it does go into regular use.

These nine steps instructional development provides many techniques teachers have actually used in carrying out the interrelated use of media, materials and various teaching and learning experiences for their students.

4.3. Individual Instructional Method

Individual instructional method is purely programmed to aid the individual student to learn, and learn adequately. It is therefore, a programmed instruction in which the learning programmes are presented in carefully structured steps, and the steps depend on the individual student and the nature of materials to be learned (Ojo, 2010).

Individual instructional method engenders students greater participation in what is being taught, it allows the student to go on his own pace, and allows the teacher to assess the performance and the skill of the students. The method may not produce the desired out come as the students are not given the opportunity to interact with other students, and compete favorable with them.

This individual instructional method reveals a high degree of consideration on the potentials of the individual to effectively influence learning virtually all the methods, apart from the pedagogical method, are deeply anchored on self-learning. No doubts, a process of social transformation is taking place as more individuals are striving to become part of an emerging learning society. Consequently, the methods have helped students to acquire knowledge on their respective discipline or subject. But sometimes, despite an underlying commitment of teachers, shortcomings remained in

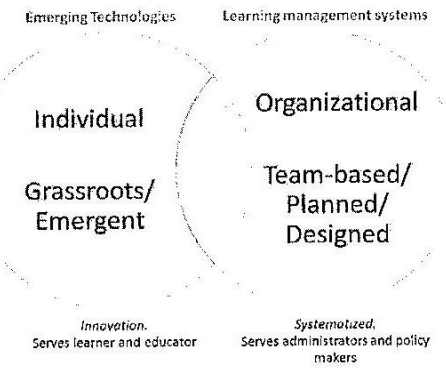
the applications of the methods. Individual initiatives are required to bring about the desired strategy results.

According to Wittich (2011), any teaching method that does not focus and recognize sharply on the intended learning results for students, and rarely reflect on the schools practice and aim would remain defective not on application but in its substance. He went further to say that there have always been poor measurements of impact of the methods on improving teaching and learning, which makes it difficult to assess the potency of the methods.

Learning is usually enhanced further by informative and helpful feedback from the teacher. They ought to record their progress and increase the steps they have taken to improve on students' performance. Although other factors such as teachers inadequate detailed subject knowledge to assist students, superficial questioning with limited challenges and inadequate clearly spelt out objectives, often constrain effective realization of the teaching outcomes. The application of technology in instructional system delivery has provided greater hope for success of the teaching methods. The adoption of Information Communication Technologies (ICT) in teaching and learning methods has significantly improved learning, and stimulated greater commitment by students to learn. Any teaching method that does not involve the components of ICT facilities and does not reflect the innovative systems approach to learning will not achieve the desired goal and promotion of individual instructional method (Akaeze, 2011).

4.4. System Approach to Individual Instruction

The system approach to individual instruction is conceptualized as another form of innovation in the teaching and learning process. It is simply a wholistic way of examining the teaching learning process. It is aimed at bringing about effective teaching and learning through proper consideration and integration of most of the factors or elements in an instructional situation. Basically, it is aimed at correcting the deficiencies of the traditional teaching methods or lesson plans that only emphasize on presentation or procedures through which the teacher will guide the students in the process of content acquisition. The traditional lesson plans or teaching methods are in dissonance with the demand for proper planning of instruction in schools today.

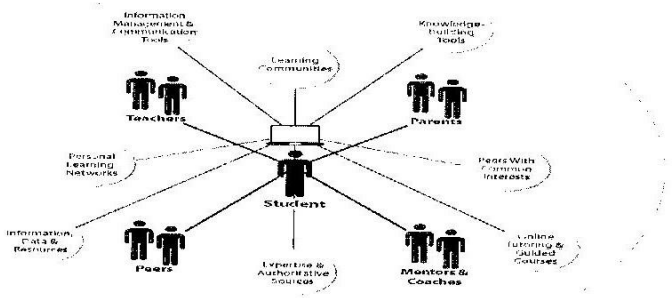


According to Okorie (2010), the deficiencies of system approach to individual instructions are generally narrow in scope, too sketchy in description of previous knowledge, vague in statement of objectives and corresponding disjointed presentation section hidden under the superficial subtitle of steps and the evaluation that often does not relate to the aims and objectives of instruction. In fact, the major problem teachers face is how to ensure the students achieve their objectives. That explains why programmed learning becomes absolutely necessary.

The fact that system approach to individual instruction method is an operational plan combining content, method, materials, personnel, equipment, facilities, and other related elements, all coordinated to serve individual instructional activities that will achieve specific learning outcomes. It is simply borne out of the application of technology in solving problems of education, particularly in the areas of designing and managing instruction in a systematic manner.

The media that are ICT based are several digital projectors, films, audio media, instructional television, internet, computers, and so on. This technological equipment assists individual approach to instruction. Presently, computers come with learning packages that have been programmed to make learning effective and interesting. They include computer assisted instructional programme such as audio-tutorial system, individualized prescribed instruction, personalized system of instruction and so on.

Individualized Learning Circle



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