Catering for Individual Differences in the Classroom for Effective Teaching and Learning

Iordaah, T. A. PhD and Koho!, B. N. PhD
Department of Educational Foundations and General Studies,
University of Agriculture, Makurdi.

Abstract
The aim of education is to enable each individual student to attain an all round development according to his or her own attributes. To achieve this, students should be provided with suitable assistance and guidance in accordance with their abilities and learning needs. This paper x-rayed factors that account for individual differences and methods which the teacher can use to diagnose these differences and how to combat them for effective teaching and learning. Based on the issues discussed, the following recommendations were made. That suitable teaching material must be provided to students and diagnostic tools that are used for identifying individual differences must be checked for validity, reliability and usability. There is need to take the family history of each student that is enrolled in school. Specific emphasis should be on blood group, eye sight, and allergies. Hence individual differences exist at the level of classroom learning, that is, fast and slow learners, mastery and individualistic method of instruction should be structured or developed so that all the students will be carried along.

Keywords: Catering, Individual differences, Classroom, Teaching and Learning.

Introduction
Individual differences refer to the unique ways each human being differs from another human being as expressed in our behaviour. People may have many things in common but no two people are identical in every respect (Huitt, 1997). According to Baum (2005), individual differences are the study of all the various ways in which individuals differ from one another in a relatively distinct and permanent manner. This fact has been recognized and realized...
by psychologists and educationalists that have written a lot about it and suggested to teachers to take particular note of the unique characteristics of individual children and cater for them. Such differences are likely to have impact on their attitudes towards themselves and learning, therefore teachers should make efforts to familiarize themselves with individual differences so that they can use different methods of teaching to enhance effective learning.

Factors Responsible for Individual Differences
Each student is a unique individual, different in cognitive, affective, psychomotor, and learning styles. Psychologists have come to agree that there are two major factors responsible for individual differences among human beings. These are genetic endowments, environmental circumstances, and differences in interest, sex differences, differences in school achievements, and intellectual differences.

It is also believed that human beings and all living organisms inherit a set of genes from their parents. These determine all the physical or physiological characteristics of the individual. It is the genetic codes of the individual that determine how tall he will be, what shape of the face he will have, the shape of his nose. The genetic coding also determines the innate characteristics of the individual. Thus, some children are born with good brain, very powerful in storing information and processing it, in thinking whereas, other children may not have such good brain, and this may lead them to average performance after much hard work. It also determines how we get anxious, fearful when we are confronted with challenges.

Malty and Macaskill (2007) affirmed that the physical environment may not differ much for some people, but the social environment tends to differ even for siblings from the same parents. Why? Because child rearing practices of parents is not the same for all the children. Child rearing also differs from family to family. Some parents are warm, accepting, democratic and firm in child rearing practices, while others are cold and rejecting in bringing up their children.

There are individual differences in interest among children. Some have special interest in languages, while others are interested in social sciences and natural sciences. The reason for such interest varies. According to Mwamvenda (1996), interest in a particular subject may be that the subject is well taught or simply that the student does well in the subject or it is closely related to the career the student wishes to take to in future. For example, is if a student wants to read law in the university, a sound knowledge of arts subjects will be required. Interest in certain professions or school subjects may also be influenced by parents' wishes for their children, availability of certain jobs and the status of certain professions.

The most important thing is how well diverse interests are taken into account during classroom interaction. At this juncture, teachers are to encourage various interests by discussing them with the children. However, they should not limit their concern to students' existing interest, but should extend their interest to other fields of human endeavour.

Both biological and environmental factors play a role in sex differences. The nature of assignments allocated to men and women and expectations regarding each sex are principally culturally determined. There is no reason why women should be responsible for preparing meals. If culture had assigned such roles to men, they would be able to carry it out just as well as women. However, Miller, Tarnoposky, MacDougall and Sale (1993) argued that there are tasks that cannot easily be exchanged for genetic and biological reasons. It would be biologically impossible for a man to become pregnant and give birth to a baby. Biologically, there is evidence to indicate that girls use predominantly the left hemisphere of the brain which specializes
on processing language, while boys tend to use predominantly the right hemisphere, which facilitates performance in sciences. Other differences are that women identify themselves with affection, neatness; such traits are socially and psychologically accepted or determined in the sense that they get approval from the society for such behavior. If men were to manifest the same or similar traits, they would rather be strange. In many cultures, it is considered a sign of weakness for a man to cry even if he is going through painful experience. But it is acceptable for women to cry over a trivia issue. It should be noted that irrespective of sex, every child is entitled to fair treatment as a human being. Thus, teaching should correspond with their academic strength and not just based on gender bias.

There are many reasons for variations in performance. One of the reasons is that some children work harder than others. Another reason is that a child's home background may be enriching in that he is provided with relevant learning materials or may not be encouraged at all and not provided with relevant learning materials. Another reason is that some schools are well-equipped while others are not. All these factors have a bearing on whether children perform as expected in school (Saklofske, 1995).

Brody and Ehrlicman (1997) maintained that psychologists and educationalists have come to agree that there are differences in intelligence so that among a group of 12 years old, mental ages of 6, 12, 16 are likely to be found. These differences may be due to the interaction of heredity and environment. Therefore, teachers should bear this in mind and provide children with suitable instruction that is neither below nor above their intellectual capacities. In some cases, streaming may be advisable so that in each group, students can progress at their optimum pace without being held back or rushed through the learning material to keep up with others.

Identification of Differences among Pupils in the Classroom

There are a number of ways that have been found useful for identification of individual differences among children in the classroom. It is therefore pertinent to apprise each child to identify his or her special needs. Appraisal as noted by Denga (2002) is a term used to refer to measurement and evaluation of human attributes or characteristics. These attributes include intelligence, general ability, aptitudes or specific abilities, interests and other personality characteristics for which test can be used to assess. The philosophy underlying appraisal service is that individuals are alike as well as different from each other. Chauhan (1982) emphasizes that appraisal is concerned with collecting data that will highlight the individuality of each child.

For appraisal service to be effective and reliable, instruments such as test and non-test are to be used. Anastasi (1976) sees test as an objective and standardized sample of behavior from which inferences can be made. From test performance of an individual in Mathematics, the tester can then make generalized statement regarding the individual's ability at handling Mathematical problems. Test tools are mainly used for diagnosing students' abilities, needs, interest, intelligence, attitudes and learning outcome. Tests are divided to standardize and teacher made test. To Kolo (2001), a test is a simple collection of questions or tasks arranged in a systematic manner in such a way that the scores are used in appraising individual differences.

Test is classified according to their purpose as well as the psychological traits which they described and measure.

1. Achievement Test: this test can also be called attainment test. Denga (2002) defines achievement test as a test that is designed to measure the effectiveness of an executed curriculum unit. The test generally measures how an individual has been able to learn from what he has
have been taught formally often in the classroom situation. The achievement test also shows how an individual might be compared with others in a given subject. It may be formative or summative functions. The test can be divided into two (1) Standardized Achievement (2) Teacher Made Test.

(a) **Standardized Achievement**: This type of test is set by experts. They are always uniform and summative. For instance, Joint Admission Matriculation Board (JAMB), General Certification in Education (GCE), West African School Certificate Examination (WASCE), and National Examination Council (NECO) are examples of summative evaluation.

(b) **Teacher-Made Test**: Test is primarily to measure the present mastery of instruction that students have been exposed to. They are also designed and used by classroom teachers on daily basis. It is formative and can take any pattern.

2. **Intelligence Test**: This is a tool or stimulus which is designed to measure the intellectual capability of individual. Kolo (2001) sees intelligence test as test which measures the general learning ability of the individual, his ability to learn informally from his culture and from formal education.

This test throws light on individual's general mental ability to reason and capacity to learn as such is called test of “mental ability”

Generally, intellectual ability or intelligence of an individual is a function of two factors: hereditary and environment. Both work to shape the individual's total intelligence. Most intelligence tests are standardized e.g. Standard Binet Test etc.

3. **Aptitude Test**: These measure the potentials for success of the individual in his given area of training or learning. They are designed to measure specific skills and behavior rather general ability. Obe (1978) ascertains that aptitude test attempt to predict an individual's capacity to acquire improved performance with additional training. Some aptitude tests that are commonly used are Differential Aptitude Test (DAT) and the TEDRO Aptitude.

**Non Test Techniques**

1. **Observation**: The teacher's observation of each child's physical appearance, academic performance, emotional expression and social interaction in the class will enable him form a picture of that uniqueness of the child in each area, each child differs from others. Through observation, the teacher will discover that he can estimate level of academic performance, social behaviour, emotional stability, the motivational level of majority of the students. Anderson (2000) opines that some children easily stand out through their overt behaviours and outstanding performances, and they can easily be observed and quickly known by the teacher. Yet, there are other students who do not speak much, interact much in class and may not perform in an outstanding way to be easily noticed by the teacher. In this case, the teacher should be sensitive enough to observe such individual, and learn more about them through other means like personal interviews.
II. Interviews: Interviews can help him to learn about the child's family background, whether the circumstances in his or her family are affecting his or her performance in the class. The teacher can also learn a great deal about the child's interest areas either vocationally. This method takes a lot of time.

III. Rating Scale: This scale can be used to assess the personality of a child in respect to co-operation, leadership, achievement in class, interest in learning, level of aggression. Information from a rating scale will enable the teacher to know the students more and therefore be in a better position to attend to them on individual bases.

IV. Sociograms: These are diagrams showing the pattern of students' interaction with one another in class. The diagram can be used for studying interpersonal interactions in the class. Through this, the teacher will get to know those that have leadership traits or are considered by the class as teachers. These help him to know individuals in the class better and also to know how to manage the class well.

V. Questionnaire: The questionnaire can be used to gather information on students' academic and vocational interest study habit. The major disadvantage about self-report is the extent they can be faked.

How to Combat Individual Differences

In general, there are three approaches for dealing with individual differences among students. First, you can develop events of instructions that take them into account as part of the instructional process. The second approach is to provide some sort of grouping, either between classes or within the classroom itself, in order to reduce or accommodate for the variability with respect to student background, achievement, ability or some other characteristics. Third, you can modify the conditions within which instruction is taking place. This is the approach used in mastery learning. These terms were coined by Bloom in 1971. In mastery learning, the teaching environment is structured so that students develop mastery of prerequisite skills before they begin a new lesson. In practice, mastery learning has little to do with speech content, but rather is a description of the process of mastering particular objectives. It may be implemented as teacher-paced-group interaction, one-to-one tutoring, or self-paced learning with programme materials. The material that will be taught in mastery can be broken into small discrete lessons that follow a logical progression. In order to demonstrate mastery over each lesson, students must be able to overtly show evidence of understanding of the material before moving to the next lesson.

There should be various instructions to accommodate differences in students' background knowledge, learning styles and instructional needs. Good and Brophy (1991) noted that teacher should decide when to use large or small group activities, pairs or individualized instruction. Assign students to small groups or pairs based on similarity of needs or complementary characteristics.

Individual instruction can sometimes be used in classes where students are grouped heterogeneously. Some computer programmes are designed for students to learn at their own pace and can be tailored to a student's specific needs. The major problem with this approach is that, it does not occur in a social context, and educators are becoming aware of the value of the social environment in promoting learning.

In compensation model, the teacher compensates for the pupil's weakness,
which means that the teacher does for the pupil what he seems unable to do for himself. For example, if a pupil's reading is poor, the material may be presented to him on a tape recorder, or if he is not good at organizing information for learning, the teacher compensates for this by organizing information for him. Another way of compensating is using streaming or tracking on the basis of intelligent quotient (IQ). What is significant here is that the pupils' weakness is accommodated rather than discriminated.

The capitalization model emphasizes the students' academic and personal strength that a student who tends to conform should be provided with structured teaching, while a student who is rather independent and hard working would be provided with task requiring independent study.

Education of students is based on three domains. The teacher may adopt some strategies which may help him to reach as many children as possible. This may depend on the domain the teacher finds the students' behavioural characteristics. These domains are as follows: cognitive affective and psycho-motor.

The major role of the school is to make students develop cognitively, thus, a lot of classroom activities are found to be competitive in nature. The teacher in his or her effort in promoting cognitive development of students should watch out for individual differences. He should be able to identify slow learners, the average and the fast learners. Having identified these groups, he should care for them according to their major characteristics.

Recommendations
Based on the issues discussed in this study, the following recommendations were made:

1. It is discovered that individual differences exist at rate of learning (slow and fast learners) thus; mastery and individualistic method of instruction should be adopted or structured to ensure that all students are carried along.

2. Since many students inherit certain physical and behavioral characteristics, it is necessary to get the family history of each child that is enrolled in school. Specific emphasis should be blood group, eye sight, and allergies etc.

3. If special needs of children such as hearing impairment, bad eye sight and other disabilities are identified, discuss with a special education teacher on how such a student could be accommodated in the class.
4. Teachers should plan their lessons and use teaching approaches that cater for different needs of students, and suitable learning materials should be provided to enhance individual student performance.

5. Diagnostic tools that are used for identifying individual differences must be checked for validity, reliability and usability.

Conclusion
Psychologists and educationalists have agreed that no two human beings are the same in every respect. Thus, teachers should make use of all tools at their disposal to assess the differences that exist among the students. Early identification of these needs will facilitate teaching and learning as individual needs will be met.

References


