

A Book of Reading in

# **INSTRUCTIONAL PEDAGOGY**



**School of Science &  
Technology Education,**  
Federal University of Technology,  
Minna, Niger State.

# A BOOK OF READING IN INSTRUCTIONAL PEDAGOGY

Compliment of the Dean SSTE

~~Abimbola~~ 1/3/2021

~~T.M. SABA~~

School of Science & Technology Education,  
Federal University of Technology,  
Minna, Niger State.

# **A Book of Reading in Instructional Pedagogy**

© School of Science and Technology Education, Federal University of  
Technology, Minna, Niger State, 08177632960, 08065357393

First Printed and Published 2019

Printed by



**UNIVERSITY PRESS LTD**  
Usmanu Danfodiyo University,  
P.M.B. 2346, Sokoto

ISBN 978-924-218-2

All rights reserved. No part of this publication may be reproduced or transmitted in any form by any means, electronic, mechanical, photocopying, recording or otherwise without the prior written permission of the author and publisher.

## EDITORIAL TEAM

1. Prof. Ohize, E. J. - Chairman
2. Dr Falode, C. O. - Member
3. Dr Tukura, C. S. - Member
4. Dr Hassan, A. M. - Member
5. Mr. Abutu, F. - Member
6. Dr Chike-Okoli, F. C - Member
7. Dr Rabi'u, M. B. - Member

## FOREWORD

It is with great delight that I write a foreword to this maiden copy of the Book of Reading of the School of Science and Technology Education, Federal University of Technology, Minna, Niger State. The School is a teacher education school that produces quality teachers in the science and technology programmes at the Bachelor, Master and Doctoral levels. The programmes which currently include Biology, Chemistry, Geography, Mathematics and Physics in the sciences, and Automobile, Building, Electrical/Electronics, Metalwork and Woodwork in industrial technology are staffed with skilled manpower that are very experienced in their various programmes and professionally trained in education. The scope of the reach of these well-equipped, seasoned and dedicated staff has been limited to the enrolled students of the various programmes over the years. It is in a bid to increase the scope of reach and impact of these specialised and experienced teachers that a compendium of their rich resource materials have been compiled into this Book of Reading so that improved knowledge, skill and attitude can be brought into the door steps of teachers.

The Book is a hybrid of materials that will equip teachers with appropriate cognitive, psychomotor and affective requirements in teaching methods, strategies, resources, assessment, evaluation, internet platforms and management in the teaching/learning environment. The fact that teaching is a professional career for which there should be appropriate training is no longer in doubt. Proofs abound that exceptionally intelligent people abound in the teaching profession whose approach to imparting knowledge on students leaves either or both of teacher and learner frustrated with loss of interest or zeal in course(s) of study. The teaching profession is majorly to transfer knowledge, skill and attitude. This Book is an outcome of the effort of School of Science and Technology Education to bring about maximum derivative of improved knowledge, skill and attitude of learners. The Book will also fully equip teachers to carry out their duties with more professionalism, less stress and more effectively. Here, in this Book of Reading are twenty-one rich papers,

authored by eminent and seasoned lecturers that you will be glad you have at your reach.

I, therefore, commend the Book to you for your professional development and ease at teaching that will greatly improve your results, impact and influence.

**Professor Bernard Nungwo Atsumbe**  
Dean, School of Science and Technology Education,  
Federal University of Technology, Minna

## PREFACE

The twin factors of content and pedagogy are principal issues in the teaching and learning situation. The hue and cry about poor quality of education can be traced largely to these factors among others. Whereas other factors like infrastructural facilities, materials, manpower, learners' attributes, *et cetera* yet account for degree of learning, it may be safely argued that the factors of content and pedagogy are more overriding than the others in teaching/learning situation being factors at the disposal of serving teachers and which, when duly mastered and applied can improve learning considerably in spite of other limitations. The concerns for quality education can be very effectively addressed by these two critical factors. Graduates of our Teacher Training Institutions are getting numbered among non-employable products of our educational institutions due largely to poor content knowledge, attitude and pedagogy. Retraining opportunities for remedying these deficiencies and upgrading teachers are not readily available to practicing teachers. The School of Science and Technology Education of the Federal University of Education, Minna, Niger State, Nigeria, in a bid to redress this challenge, has pulled together carefully authored papers by reputable and experienced lecturers into this Book of Reading. This Book can serve as refreshing and learning resource and motivating material to teachers serving on the field. It richly addresses methods, strategies, resources, assessment, evaluation, internet platforms and management in teaching/learning environment. It is hoped that the contents of this Book will greatly enrich its readers with knowledge, skill and attitudes that will further enhance their efficiency and effectiveness at teaching.

**Professor Emmanuel J. Ohize**  
Professor of Industrial & Technology Education.

## BRIEFS ON CONTRIBUTORS

**Abdulrahman, M. Alfa** is a Lecturer in the Department of Science Education. He has served as Academic Advisor and Examination Officer and currently member of many Committees in the Department. He is currently working on a Doctor of Philosophy degree in Mathematics Education programme of Ahmadu Bello University, Zaria.

**Abduldayan, Fatimah Jibril** is a Lecturer in the Department of Library and Information Technology, Federal University of Technology, Minna, Nigeria. She is currently on her doctoral programme. Her research interests are in national ICT policy, ICT in academic libraries, privacy and security issues in social media networks, United Nations SDGs in Nigeria and research data management. She has published 12 articles in notable journals and presented several conference papers both nationally and internationally.

**Abutu, Francis** is a Lecturer, Researcher and Webmaster in the Department of Industrial and Technology Education, Federal University of Technology, Minna. He holds a B.Tech and M.Tech degrees in Automobile Technology Education and is currently a PhD Research student.

**Adamu, M. Jebba** is a Chief Lecturer with the Department of Electrical/Electronics, Niger State College of Education, Minna and also the Dean Students Affairs of the College. He holds a PhD in Industrial and Technology Education (Electrical Electronics) with bias in Innovative ICT teaching and learning platform. He is a member of several professional bodies and an Editorial Consultant of International Journal of Computing and Related Technology, Sindh Madressatul University, Karachi.

**Akor, Philip Usman** is a Professor of Library and Information Technology at the Federal University of Technology, Minna, Niger State, Nigeria. He is a Chartered Librarian of Nigeria. He is widely published in both local and international journals authored books and book chapters. Professor Akor is a member of the National Association of Library and Information Science Educators.

**Atsumbe, Bernard Numgwo** is a Professor of Industrial and Technology Education and Dean School of Science and Technology Education, Federal University of Technology Minna. He obtained his PhD in Industrial Technical Education from University of Nigeria, Nsukka. He has published several



textbooks and journal articles in both National and International Journals. He is an expert in curriculum development, instruction and evaluation.

**Audu, Rufai** is a Senior Lecturer in the Department of Industrial and Technology Education, Federal University of Technology, Minna. He is an expert in Automobile Technology and Curriculum Evaluation in Technical and Vocational Education and Training. He obtained his PhD in Technical Vocational Education from Universiti of Teknologi, Malaysia and has several publications to his credit in both national and international journals.

**Babagana Mohammed** is a lecturer with the Department of Science Education, School of Science and Technology Education, Federal University of Technology, Minna. His research interest is in Biology Education and pedagogical skills.

**Babalola, Gideon Adesina** is a seasoned pioneer faculty member in the Department of Library and Information Technology, Federal University of Technology, Minna. He holds a PhD in Library and Information Science of the University of Ibadan, Nigeria. He has a good number of publications in journals, conference proceedings, chapters in books and book. His areas of research interest are Library Personnel Management, Productivity and Profitability, Information Products and Services, and Trends in the Digital Age.

**Rabiu, Mohammed Bello** holds a Doctor of Philosophy degree in Science Education (Biology). He specializes in Curriculum Design, Implementation and Evaluation. He lectures in the Undergraduate and Postgraduate programmes of the Department of Science Education, Federal University of Technology, Minna. Dr Bello holds a number of positions at the Department, School and University levels, and widely published in national and international journals.

**Chike-Okoll, Chibuogwu Felicia** is a Lecturer in General Studies Unit of Federal University of Technology, Minna. She holds a Doctorate Degree of the University of Ibadan in Language Education. She teaches English language courses related to General Studies in the University. She is an author of English textbooks.

**Chukwu, Nnennaya** is an employee of National Examination Council (NECO), Abakaliki, Ebonyi State, Nigeria. She is a PhD candidate in the Faculty of Education, Ebonyi State University, Abakaliki. Nnenna's research interest is in Biology Education and Educational Administration and Planning.

**Falode, Oluwole Caleb** holds a Bachelor of Education, Master of Education and Doctor of Philosophy in Educational Technology from University of Ilorin. He is a Lecturer in the Department of Educational Technology and an Instructional System Design expert at the Centre for Open and Distance and e-Learning of Federal University of Technology, Minna. He has published in reputable onshore and offshore journals.

**Gambari, Amosa Isiaka** is a Professor of Educational Technology in the School of Science and Technology Education, Federal University of Technology, Minna. He is currently the Deputy Director, Centre for Open and Distance e-Learning; Managing Editor, Journal of Information, Education, Science and Technology; Editor, Journal of Science, Technology, Mathematics, and Education. Professor Gambari has authored and co-authored many research journal articles, books and conference proceedings in several national and international journals.

**Gimba, Ramatu Wodu** is an Associate Professor of Science Education (Mathematics Education) and currently head of Department of Science Education under School of Science and Technology Education, Federal University of Technology (FUT) Minna, Niger State of Nigeria. Her research interest is in Computer Assisted Instruction for improved achievement, retention and interest of students in mathematics. She has publications in both national and international journals.

**Idris, Abubakar Mohammed** is an Associate Professor of Industrial and Technology Education with specialization in Automobile Technology, Federal University of Technology, Minna. He has over 17 years working experience in teaching and research, and is an expert in teacher training, curriculum design, analysis and development. He has published widely in textbooks, reputable international and national journals.

**Kareem, Wahab Bamidele** holds a PhD degree in Industrial and Technology Education and currently lectures Woodwork Technology Education at the Federal University of Technology, Minna. He is a senior lecturer with good work experience as plant operator and technical instructor before engaging in lecturing job at Federal University of Technology Minna. Dr Kareem has published widely in national and international journals.

**Mogbo, Irene Nwamu** of blessed memory was a Professor of Science Education and Guidance and Counseling in Science Education Department, School of Science and Technology Education, Federal University of

Technology, Minna. Prof (Mrs.) Mogbo had many academic and religious publications in national and international journals to her credit and authored many books and contributed chapters to several books. She taught and supervised many students at undergraduate and postgraduate levels. She was a fellow of Counselors Association of Nigeria, and member of national associations.

**Nsofor, Caroline Chinna** holds PhD in Educational Technology from Federal University of Technology Minna. She is a Professor of Educational Technology in the Department of Educational Technology. Professor Nsofor teaches and supervises undergraduate and postgraduate students. She has many publications in reputable national and international journals, authored books and contributed chapters in several books. She is a member of some professional bodies (NAEMT, STAN & TRCN).

**Ohize, Emmanuel Jose**, an Undergraduate and Postgraduate Faculty staff is a Professor of Industrial and Technology Education with specialisation in Metalwork Technology. He has served as Sub Dean, Postgraduate School, Deputy Dean, School of Science and Technology Education and also as Head of Department of Industrial and Technology Education, among other positions. He is widely published in national and international journals.

**Okworl, Robert Ogbanje** is a Professor of Industrial and Technology Education with specialization in Woodwork Technology at the Federal University of Technology, Minna. He has served as Deputy Dean, School of Science and Technology Education and currently the Head of Department of Industrial and Technology Education.

**Owodunni, Ayanda Samuel** holds a PhD degree in Industrial and Technology Education with specialization in Electrical and Electronic Technology Education. He has served in various capacities as School Assistant Examination Officer, Departmental Assistant Postgraduate Coordinator, Timetable Officer, among others.

**Raymond, Emmanuel:** Raymond holds a PhD in Industrial Technical Education. He is an Associate Professor of Industrial and Technology Education, Federal University of Technology, Minna, Niger State, Nigeria. He is the Departmental PG Coordinator and teaches Electrical/Electronics courses and Research Methods. Dr Raymond Emmanuel has authored and co-authored several publications in reputable National and International Journals. He has supervised and is currently supervising M.Tech and PhD students.

**Saba, Tswana** Moses holds a PhD in Industrial and Technology Education (Electrical and Electronics Technology). He is a Senior Lecturer in the Department of Industrial and Technology Education, Federal University of Technology Minna and currently the Departmental Postgraduate Examination Officer and School of Science and Technology Examination Officer.

**Shehu, Halima** is a PhD holder and a Senior Lecturer in the English section of the General Studies Unit, Federal University of Technology, Minna, where she teaches the Use of English courses at undergraduate level. Her research interests include Communicative English, English as a Second Language, Sociolinguistics and African Literature.

**Shittu, Ahmed Tajudeen** is a holder of PhD degree in Instructional Technology from International Islamic University, Malaysia. He has published many articles in learned journals and presented papers at local and international conferences. Dr Shittu was a faculty member at Department of Educational Technology, Federal University of Technology Minna. Presently he lectures in Department of Science Education, Federal University of Kashere, Gombe State, Nigeria.

**Tafida, Amina Gogo** holds a PhD in English Language Education from the University of Abuja, Nigeria. She is a Senior Lecturer in the General Studies Unit of Federal University of Technology, Minna and has research interest in Contrastive Linguistics, Mobile Technology and Language teaching, Linguistic borrowing and English language learning problems of second language learners.

**Udoudoh, Samuel Jimmy** holds a PhD in Library & Information Science. Dr Udoudoh is currently an Associate Professor in the Department of Library and Information Technology, Federal University of Technology (FUT), Minna. He has widely published in international and national learned and scholarly journals. He is a Chartered member of the Library Registration Council of Nigeria, a member of the Nigerian Library Association, Nigerian Library and Information Science Educators, and the Chartered Institute of Library and Information Professionals, UK.

**Umar, Ibrahim Yakubu** is an Associate Professor of Industrial and Technology Education. He holds a PhD in Vocational Education from Southwest University, Chongqing-China. He is a certified teacher and an expert in management of Technical and Vocational Education and Training Institutions. He has been teaching in the Department of Industrial and

Technology Education, Federal University of Technology Minna for over 17 years.

**Umar, Idris Sarkin Bauchi** is a Lecturer in the Department of Science Education, School of Science and Technology Education, Federal University of Technology Minna, Niger State. His concentration is in Educational Research, Measurement and Evaluation. He has published in local and international journals.

**Wushishi, Dantani Ibrahim:** He is a Professor of Science Education (Chemistry). He has served as Head of Department of Science Education, Deputy Dean of School of Science and Technology, and chaired several Committees. Professor Wushishi is the current Chairman of University Staff School Management Board. He has many publications and graduated Master and PhD students in the field of Science Education.

**Yaki, Akawo Angwal** is a Lecturer with the Department of Science Education, School of Science and Technology Education, Federal University of Technology, Minna. He is concluding his PhD work in the Faculty of Education, University of Malaya, Malaysia. Yaki's research interest is in Biology Education, Innovative Approaches to STEM Education and thinking skill.

# TABLE OF CONTENTS

Foreword		iv
Preface		vi
Briefs on Contributors		vii
Chapter 1	Alternative Sources of Instructional Materials for Effective Teaching and Learning <i>Chike-Okoli, Chibuogwu Felicia and Tafida, Amina Gogo</i>	1
Chapter 2	Asynchronous Instruction as an ICT Teaching Platform <i>B. N. Atsumbe and M. A. Jebba</i>	14
Chapter 3	Classification and Types of Tests <i>R. O. Okwori, Amina Gogo Tafida and Umar S. B.</i>	24
Chapter 4	Components and Attributes of Open and Distance Learning Interactive Courseware <i>Falode, Oluwole Caleb</i>	37
Chapter 5	Development of Marking Scheme <i>Akor P. U., Udoudoh and AbdulDayan F.J.</i>	44
Chapter 6	Edutainment Instruction as a Teaching Platform <i>B. N. Atsumbe and M. A. Jebba</i>	56
Chapter 7	Effective Classroom Management Practices <i>Robert Ogbanje Okwori and Caroline Chinna Nsofor</i>	62
Chapter 8	Effective Instructional Presentation and Strategies: Some Essential Considerations <i>Idris A.M., Umar I.Y. and Audu R.</i>	81
Chapter 9	General Principles of Assessment <i>Ohize E.J. and Babalola G.O.</i>	96
Chapter 10	Global Demands for the 21 <sup>st</sup> Century Skills: Need for a Paradigm Shift in Instructional Approach <i>Yaki, Akawo Angwal, Babagana, Mohammed and Chukwu, Nnennaya</i>	103
Chapter 11	Improving English Language Teaching in Large Class Size <i>Amina Gogo Tafida and Halima Shehu</i>	121

Chapter 12	Innovative Methods/Techniques for Teaching Science, Technology and Mathematics Education <i>Raymond Emmanuel</i>	132
Chapter 13	Instructional Pedagogy and Techniques <i>Raymond Emmanuel and Owodunni A. Samuel</i>	152
Chapter 14	Measurement and Evaluation <i>Idris, U. S. B. and Gimba, R. W.</i>	171
Chapter 15	Supporting 21 <sup>st</sup> -Century Teaching and Learning with Web 2.0 Social Software Internet Platform <i>Shittu A.T., Gambari I.A. and Owodunni A.S.</i>	182
Chapter 16	Synchronous Instruction as an ICT Teaching Platform <i>B.N. Atsumbe and M.A. Jebba</i>	192
Chapter 17	Techniques of Motivating Students in Learning Psychomotor Skills in Engineering and Technology Education Programme <i>Saba T.M., Audu R., Abutu F. and Kareem W.B.</i>	200
Chapter 18	Tenets of Developing Standardized Test and Examination Items <i>Rablu M.B., Abdulrahman M.A. and Wushishi D.I.</i>	214
Chapter 19	The Relevance of Assessment Data on Teaching and Learning Outcome <i>Mogbo N. Irene and Caroline Chinna Nsofor</i>	222
Chapter 20	The Role of Continuous Assessment in Curriculum Evaluation <i>Atsumbe B.N, Umar I.Y, Idris A.M and Audu R.</i>	238
Chapter 21	Utilization of Cooperative Instructional Method in the Preparation of Technology Education Students for Industries <i>Abutu F., Idris A.M., Saba, T.M. and Kareem W.B.</i>	249

# Chapter 20

## The Role of Continuous Assessment in Curriculum Evaluation

Atsunbe B. N;

Umar I. Y;

Idris A. M. & Andu, R.

Industrial and Technology Education Department,  
Federal University of Technology, Minna

### Aims

The general aim of this chapter is to expose readers to the *relevance* of continuous assessment (CA) in curriculum evaluation in Nigeria schools.

### Objectives

By the end of this chapter, you should be able to:

1. Define continuous assessment (CA)
2. List and explain features of continuous assessment
3. State the benefits of continuous assessment
4. Explain at least four (4) assessment techniques
5. List the challenges of continuous assessment
6. List 4 strategies for improving the implementation of CA in schools

### Introduction

In this chapter, the following contents will be covered in detail:

- a. The meaning of continuous assessment
- b. The features of continuous assessment
- c. The benefits of continuous assessment
- d. The continuous assessment techniques



- e. The challenges of continuous assessment
- f. The strategies for improving the implementation of CA in schools

### The Meaning of Continuous Assessment

Assessment is a means whereby the teacher obtains information about knowledge gains, behavioural changes and other aspects of the development of learners (Oguneye, 2002). It involves the deliberate effort of the teacher to measure the effect of the instructional process as well as the overall effect of school learning on the behaviour of students. Assessment covers the cognitive as well as the affective and psychomotor aspects of learning. Assessment has also been defined by Atsumbe (2013) as "the process of gathering data and fashioning them into interpretable form for decision making". It involves collecting and collating of data obtained from an assessment process with view of making value judgment about the quality of a person, object, group or events. Esere and Idowu (2009) maintained that in Nigeria, Educational Planners and Administrators are now more conscious than ever before of their role in the nationwide scheme of curriculum innovation. They emphasized that a fundamental change in the system of assessment of students' performance has also emerged through the formalization of continuous assessment as a major component of evaluation process.

Continuous assessment is a process of determining the final grade for a period of time through a series of periodic assessments comprising of test and non-test measures. According to Denga (1987), these periodic assessments are given at predetermined intervals and aimed at gathering data on children regarding their academic achievements, vocational interests, and personal-social problems or concerns. Ezewu and Okoye (1986) emphasized that "continuous assessment refers to a systematic and objective process of determining the extent of a student's performance in all the expected changes in his behaviour, from the day he enters upon a course of study and a judicious accumulation of all pieces of information derived from this purpose with a view to using them to guide and shape the student and to serve as basis for making important decisions about the child". USAID (2003) reported that "continuous assessment is a classroom strategy implemented by teachers to ascertain the knowledge, understanding, and skills attained by pupils". Teachers administer assessments in a variety of ways over time to allow them to observe multiple tasks and to collect information about what pupils know, understand, and can do. These assessments are based on curriculum tasks previously taught in class and occur

frequently during the school years which usually serve as part of regular teacher-pupil interactions. This is considered adequate for assessment of students learning because it is comprehensive; cumulative; systematic; guidance and diagnostic oriented.

### The Features of Continuous Assessment

Continuous assessment is characterized by the following four features:

- *Comprehensiveness*: it takes into consideration all the three domains of behaviours and learning
- *Systematic*: it is planned and periodic;
- *Cumulative*: it takes into account previous performance of the student and ;
- *Guidance oriented*: it is designed to direct and improve teaching learning practice.

Continuous assessment is **comprehensive** because it uses a variety of instruments to determine students' performance. These include tests and examination, observation, projects, assignments, questionnaires, interviews and socio-metric techniques. Furthermore, repeat measurement of performance in the cognitive, affective and psychomotor domains, ensures that an overall or comprehensive picture is obtained and maintained. According to Denga (1987) "Continuous assessment is comprehensive in the sense that it utilizes variety of data from different sources".

The **systematic** nature of continuous assessment refers to the specificity of the measuring instrument and the regularity or frequency of assessment. "Continuous assessment is systematic in the sense that it is well planned" (Arimoro, 1996). The frequency of assessment exercises are predetermined and spanned in such a way that children will not be tested to frustration.

Continuous assessment is **cumulative** in nature because it indicates not only that there are to be repeated measurements but that all measurements should be taken in to account in presenting the total picture of the child at any given moment. Cumulative characteristics of continuous assessment mean that the assessment process is repetitive and additive.

Continuous assessment is **guidance-oriented**. One of the greatest values of assessments in education is that it can help to point out areas of strength and weakness in student's performance, teacher's instructional procedure and the

curriculum itself. The information thus obtained can be used as a basis for encouraging learner's efforts, preparing remedial work and improving techniques of instruction. Outcome of a good continuous assessment programme forms the basis for educational and vocational counseling for appropriate placement of children into correct programme options and vocational fields.

### **The Benefits of Continuous Assessment**

Atsumbe (2013) reported that "the official introduction of continuous assessment in the school system by the federal Government of Nigeria marks an important stage of educational development in the country". This innovative approach comes as a better alternative to an earlier system in which an overwhelming emphasis was placed on the final examination with only scanty emphasis on terminal examinations and other occasional teacher-made tests.

The benefit of Continuous Assessment can therefore be summarized as follows:

1. Continuous Assessment plays a vital role in diagnosing and remediating areas of learners' strengths and weaknesses if properly anchored on what occurs in classroom.
2. Continuous assessment is an approach that would capture the full range of learners' performance. Teachers and administrators would thus be able to assess learners' progress and would have time to correct the problems.
3. Continuous assessment places teachers at the centre of all performance-assessment activities. It encourages more teacher participation in the overall assessment or grading of his/her learners.
4. The introduction of CA lead to better study habits where by students read at a steady pace and seeks help in those areas of their work that had not been mastered in the preceding test.
5. The result of CA has been used to improve instructional techniques, curriculum review and have served as a tool for quality control.
6. Continuous assessment has the capacity of reducing malpractice because CA system improves the study habit of the students.
7. The immediate feedback of CA would serve as a strong tool of motivation to students.

## **Continuous Assessment Techniques**

Continuous assessment techniques refer to the styles teachers adopt in all their activities directed towards helping students to learn and to determine students' progress. Atsumbe and Raymond (2012) maintained that assessment techniques include: Performance test, teacher made test, observation technique, interview, questionnaire, and psychological tests.

### **1. Performance Test**

Performance tests are used to assess the achievement of objectives in psychomotor domain. The psychomotor domain of educational objectives is concerned with the practical or motor skills possessed by students. The two measurable aspects of psychomotor skills in any performance tasks include process, procedure, skill or techniques and the product or result.

### **2. Teacher made Achievement Test**

These are achievement tests prepared by classroom teachers. The teacher constructs this type of test bearing in mind the age of the students, the subject matter, and the objectives of the curriculum and educational philosophy of the school. The two major categories used by the teachers include free responses or essay test and structured response or objective tests. The teacher made tests are very important in Nigeria since the country has adopted evaluation system based on CA of student's progress by the teachers.

### **3. Observation Techniques**

"Observation entails a careful and purposeful watch over students to obtain information on their performance and affective behaviour" (Ogwo & Oranu, 2006). It is useful for collecting information on things that need to be seen, smelt, felt or touched, tasted or heard. The teacher prepares observation schedules which serve to systematize information accruing from the observable phenomena.

### **4. Interview**

An interview is a face-to-face or telephone or video phone discussion which a teacher holds with a student, which is often used to verify and compliment other information about the student (Ogwo & Oranu 2006). Interview is also a strategy for gathering information through questions. Interviews are structured to elicit specific responses. They are usually employed in oral examination (s) of students.

### 5. *Questionnaire*

A questionnaire is a carefully designed assessment technique for assessing students in accordance with the curriculum of the subject matter. Atsumbe (2013) maintained that "a questionnaire comprises series of questions designed to obtain information about a given subject". It gives provision for the anonymity to respondents and therefore could be used to obtain very frank answers in many aspects of the educational process.

### 6. *Psychological Test*

A psychological test is an objective and standardized measure of an individual's mental and/or behavioural characteristics. A psychological test is an instrument designed to measure unobserved constructs. Psychological tests are typically, but not necessarily a series of tasks or problems that the respondent has to solve. "A psychological tests must be both valid (There is evidence to support the specified interpretation of test results) and reliable (internally consistent or give consistent results)" (Wasserman, 2003).

## **Challenges of Continuous Assessment**

Educational assessment provides the necessary feedback we require in order to maximize the outcomes of educational efforts. The assessment of learner's learning provides objective evidences necessary in the decision making process education. Despite the wide recognition of the value of outcome of evaluation in educational enterprise by educators, the type of evaluation practice in Nigeria has not yielded any fruitful results (Atsumbe, 2013). Continuous assessment and its implementation have been greeted by many fundamental problems. Some of these basic challenges range from teacher, learner and administrative problems. Other problems have to do with funding, personnel and counseling challenges.

### 1. **Teacher related challenges**

Teacher related challenges include teacher's capacity in item writing, teacher's integrity, teacher's workload and measuring all the three domains of learning.

**Teacher's capacity in item writing:** It is essential that teachers know how to construct and use the various types of tests. Qualities of many classroom tests are low, tending to negate gains in variety of assessment made possible by the practice of continuous assessment. Many teachers form the habit of copying from past questions of external examining bodies. These questions neither reflect nor monitor the specific content and objectives they emphasize in their class during teaching.

**Teacher's integrity:** The lack of integrity by most teachers disrupts hitch free assessment procedure. There are established cases of teachers favouring students from their localities in continuous assessment. According to Atsumbe (2013) in some instances "continuous assessment is fast becoming continuous harassment". Cases of teachers using continuous assessment to harass their students either sexually or financially abound in tertiary institutions.

**Teacher's workload:** Teacher's workload is substantially increased by continuous assessment. Prior to the introduction of continuous assessment practice, the teacher/students ratio in most schools was about 1:20. Presently, the teacher student ratio has increased more to than 1:40 according to education statistics.

**Measuring all the Three Domains of Learning:** Apart from the skill of test construction measuring cognitive aspects of learning, teachers should also be able to measure the remaining two other domains of learning. However it has been discovered that teachers concentrate on measuring cognitive domain that is knowledge. Research reports by Onuka (2000) clearly pointed to the fact that "teachers avoid assessing children in areas of psychomotor and affective skills because they are deficient in generating quality items in such areas".

## 2. Administrative Challenges

Administrative challenges concentrated on the record keeping that characterizes the CA techniques. Teachers are obliged to collect record and store information on each child who passes through the school. Good records yield reliable information for reporting to parents and outside bodies apart from guidance activities within the School. Teachers are overloaded with other works such that learner's records are not adequately and meticulously kept over a long period. Some of these records that need to be kept include weekly performance, termly performance, annual performance record and record for the period spent in school. Ohuche and Okeke (1983) recommended that three types of records be kept. These are teacher class/school record book, the cumulative record card (CRC) booklet and the transcript.

**Teachers class/school record book:** contains detail information about each student's bio-data and different rows and columns for different subjects' scores per week. The record should also contain periodic summaries of each student's progress in each subject cumulative folder.

**Record card:** is the most important on each student because it contains comprehensive information for all years that the student spends in the school.

The CRC contains personal information about the student periodic of academic achievement, report of terminal examinations, cognitive, affective and psychomotor domain ratings and yearly summary of progress including weightings.

*The Transcript*: is a report given to outsiders about a student. It contains similar information like the CRC. However, the presentation may differ in that it contains cumulative performances and behavioural ratings for a specified relevant period only.

### **3. Financial Challenges**

In spite of all the emphases government places on CA there is no financial or other material supports offered by the government toward promoting CA (Atsumbe, 2013). The operation of CA requires adequate funding and prudent management of available resources. The educational administrators (Principals, lecturer, headmasters and teachers) generally should be able to project their budget appropriately and manage money judiciously.

### **4. Teacher and learning Resources Challenges**

Majority of the teachers complained that they usually have inadequate teaching and learning materials. The difficulties with learning and teaching materials are mainly concerned with the availability and appropriateness in the classroom. It is important to state that there is complete lack of materials in many subject areas such as basic technology, basic sciences, fine Art, and home economics among others. It is clear that the schools need instructional resources to effectively teach for students to understand. It has been established from research that students learn faster, stimulate and tend to retain knowledge when taught with concrete objects.

### **5. Learner Centred Problem Challenges**

In the implementation of CA the learner centred problems seems to be a major problem. Yet these learners are the number one stake holders or beneficiaries of CA. (a) Absenteeism seems to seriously affect the smooth management of student's records as some of the learner's attendance is usually irregular. (b) Many of the students cheat (copy from other students or pupils) in order to pass the tests. (c) Students generally do not understand the purpose of or philosophy behind CA. This may be the reason why the children do not seem to be either threatened by the tests or depressed when they perform poorly in the examinations.

### **Strategies for Improving the Implementation of CA in Schools**

In order to be successful in the implementation of continuous assessment the basic requirement in terms of personnel, finance, and materials must be provided. Some strategies that could help in the effective implementation of CA in Nigeria can be in the areas of teacher training, standardization, supervision of teachers, teacher welfare, teacher integrity, funding, teaching-learning environment, planning and Organization. However, Atsumbe (2013) highlighted the specific strategies for improving the implementation of continuous assessment in Nigerian Schools to include:

1. Continuous in-service training for teachers and officials in the required knowledge and skills in assessment designs and procedures
2. Special and appropriate training on evaluation method should be given to all teachers particularly in the rural schools in order to engender total implementation.
3. Manuals on CA implementation procedures should be made available to schools in order to get them well informed.
4. Teachers or lecturers who distinguish themselves in the implementation of CA should be specially remunerated or rewarded.
5. Enhancement of collaborative mechanism for teachers such as reviews workshop to enable teachers meet regularly and share experiences, and unify standard of performance in different schools and about implementation process.
6. A special department should be setup in the state ministries of education and the area education offices. Their job will be to monitor, inspect and ensure implementation and compliance with uniform standards.
7. Government should yearly assemble experts in various subjects for item writing and from there develop a data bank for test instruments.
8. Evaluation of student should not focus on cognitive domain alone, other domains such as affective and psychomotor domains should constantly be tested.
9. Headmasters, principals and heads of departments in various schools should ensure that teachers invigilate any form of assessment administered to the children.
10. Provision of different teaching and learning materials is a requirement for successful implementation of CA.



### Summary

This course work x-ray the definition of continuous assessment from perspective of various authorities. Continuous assessment has been defined as the comprehensive strategy by teachers to ascertain the knowledge, understanding, and skills attained by students. The features of CA are that it is comprehensive; systematic; cumulative and guidance oriented.

The benefit of Continuous assessment is that it encourages more teacher participation in the overall assessment or grading of his/her learners and lead to better study habits where by students read at a steady pace and seek help in those areas of their work that had not been mastered in the preceding test. The assessment techniques include: Performance test, teacher made test, observation technique, interview, questionnaire, and psychological tests.

The challenges of continuous assessment are numerous and include some of these basic ones ranging from teacher, learner and administrative problems. Other problems have to do with funding, personnel and counseling challenges. Some strategies that could help in the effective implementation of CA in Nigeria can be in the areas of teacher training, standardization, supervision of teachers, teacher welfare, teacher integrity, funding, teaching-learning environment, planning and Organization.

### Self-Assessment Exercise

What is continuous assessment (CA)?

List and explain features of continuous assessment

What are the benefits of continuous assessment?

Explain at least four (4) continuous assessment techniques

List the challenges of continuous assessment

List 4 strategies for improving the implementation of CA in Nigeria schools

### References

Arimoro, V. (1996). *Educational measurement*. Onitsha: Leadway Books limited.

Atsumbe, B. N. (2013). *Implementation of continuous assessment in Nigeria*. Yola: Paraclete Publishers.

- Atsumbe, B. N. & Raymond, E. (2012). Problem of implementing continuous assessment in primary schools in Nigeria. *International Journal of Educational Practice*. 3 (6), 71 – 76.
- Denga, D. I. (1987). *Educational measurement, continuous assessment and psychological testing*. Calabar: Rapid Educational Publishers Ltd.
- Idowu, A. I. & Esere, M. O. (2009). Assessment in Nigerian schools: A Counsellor's Viewpoint. *Edo Journal of Counseling*, 2(1), 17-27. An Official Publication of Edo State Chapter of Counseling Association of Nigeria.
- Esere, M. O. & Idowu, A. I. (2009). Assessment in Nigerian schools: A Counselor's Viewpoint. *Edo Journal of Counseling*, 2 (1), 17-27. An Official Publication of Edo State Chapter of Counseling Association of Nigeria
- Ezewu, E. E. & Okoye, N. N. (1986). *Principles and practice of continuous assessment*. Ibadan: Evans Publishers.
- Oguneye, W. (2002). *Continuous assessment: Practice and prospects*. Lagos: Providence Publishers.
- Ogwo, B. A. & Oranu, R. N. (2006). *Methodology in formal and Non-formal technical education and vocational education*. Enugu: Ijejas Printing & Publishing Co.
- Ohuche, R. O. & Okeke, E. (1983). *Continuous assessment for ever learners*. Onitsha: African Publisher Ltd.
- Onuka, A. O. U. (2000). Continuous assessment as an instrument for achieving learning objectives. In J.O. Obemeata & E.A. Okwilagwe (eds). *A handbook of evaluation*. Ibadan: Pen Service.
- USAID (2003). Educational quality in the developing world. *EQ Review: Bimonthly newsletter published by USAID's EQUIP1*. 1 (1) 1 – 3. Retrieved December 2<sup>nd</sup> 2016 from [http://www.equip123.net/EQ\\_Review/1\\_1.pdf](http://www.equip123.net/EQ_Review/1_1.pdf)
- Wasserman, J. D. (2003). *Nonverbal assessment of personality psychopathology handbook of Non-verbal assessment*. New York: Kluwer Academic Publisher.