American Journal of Engineering Research (AJER)
e-ISSN: 2320-0847 p-ISSN : 2320-0936
Volume-7, Issue-5, pp-07-20
www.ajer.org
Research Paper Open Access

Roles of Continuous Assessment Scores in Determining the Academic Performance of Computer Science Students In Federal College Of Wildlife Management

John Onihunwa[1], Olusegun Adigun[1]Eric Irunokhai [1] Yusuf Sada [1]Ayokunle Jeje[1]Oluwatosin Adeyemi[1]Olubunmi Adesina[2]
[1](Computer Science Department, Federal College of Wildlife Management, New Bussa, Niger state, Nigeria)[2](Shegnet Konsult, No 33, Off Benue Road, New Bussa Niger State, Nigeria)
Corresponding Author: John Onihunwa[1]

ABSTRACT: *This research studied the relationship between continuous assessment and final examination scores of computer science students in Federal College of Wildlife Management, New Bussa, Niger state. The study specifically sought to find out the different assessment strategies, frequency of continuous assessment and their contribution to students' academic performance. Continuous assessment scores and the final grades obtained in some ND1 and ND2 courses offered by current ND2 students of 2013/2014 sets of National Diploma students of computer science department in the college were collected for the study and correlational analysis was performed on the data collected. The results of the study showed that the students' scores obtained in the final examination was a function of the scores obtained in the C.A. Hence, it was concluded that if the disadvantages of continuous assessments (which include teacher subjectivity, the existence of different standards, high implications on time in terms of record keeping etc.) were well taken care of, effective continuous assessments will improve the whole performance of the students during a given period of schooling. Furthermore, it was recommended that lecturers should focus their efforts on making C.A tests more efficient because there is an appreciable effect on students' examination score.*
Assessment: *a process through which the quality of astudents' performance is measured and judged,* ***Continuous assessment****: is therefore the assessment of students' progress based on work they do or tests they take throughout the term or year, rather than on a single examination,* ***Academic:*** *relating to education, educational studies, an educational institution, or the educational system,* ***Performance:*** *the way in which somebody does a job, judged by its effectiveness,****Academic performance:*** *is the scholastic standing of a student at a given moment. It refers to how an individual is able to demonstrate his or her intellectual abilities.*

Date of Submission: 18-04-2018 Date of acceptance: 03-05-2018

I. INTRODUCTION

The differential scholastic achievement of students in Nigeria has been and is still a source of concern and research interest to educators, government and parents. This is so because of the great importance that education has on the national development of the country. All over the country, there is a consensus of opinion about the fallen standard of education in Nigeria (Adebule, 2004). Parents and government are in total agreement that their huge investment on education is not yielding the desired dividend. Teachers at the various educational levels also complain of students' low performance at both internal and external examinations. The problem of students' under-performance in Nigeria has been a much discussed educational issue. In solving any problem however, it is pertinent to understand the causes of such problems. Many causes or agents have been studied as the etiological starting point for investigating the phenomena of school failure or success. These causes are looked into from several perspectives including the role of the students, teachers, parents or family, school environment, society, government etc. Notable works among these are effects of: students' study habits (Ayodele and Adebiyi, 2013; Obasoro and Ayodele 2012), Gender (Adigun, Onihunwa, Irunokhai and Sada, 2015), school environment (Adesoji and Olatunbosun, 2008; Okoro, 2004), teachers' competencies (Akiri and

Ugborugbo, 2009), parents' economic status (Osonwa, Adejobi, Iyam and Osonwa 2013), educational funding (Ugwulashi, 2012), continuous assessment (Kolawole and Ala, 2014; Okwu and Orum, 2012; Mwebeza, 2005). Continuous assessment is one of such factors mentioned in literature. The motivation for studying effects of continuous assessment on students' academic performances was the theory of Classical Conditioning by Ivan Pavlov (1929 – 1936) mentioned in Mwebeza (2005) that concluded that a dog learnt to salivate whenever a bell was rung. He undertook many trials and each time the bell was sounded the dog salivated and food was simultaneously presented. The conditioning theory has therefore been adopted to inform this research because it was assumed that students obtained good grades whenever subject matter/content was taught, followed by many continuous assessment (trials) exercises.

Assessment is very important in teaching and learning process; through assessment feedback could be provided to both students and teachers (Dennis, 2012). According to Aladenusi (2010), assessment is a central element in the overall quality of teaching and learning. Assessment is an important element in teaching computer science, Houston in Aina (2010) opines that teacher must regularly assess the effectiveness of the learning experiences which they have organized to enable the students achieve the earlier stated objectives. Greaney (2005) defines assessment as any procedure or activity that is designed to collect information about the knowledge, attitude, or skills of the learner or group of learners. Assessment is therefore a process through which the quality of an individuals' work or performance is judged. We have both formative and summative assessment. Formative assessment is done during the course as the teaching and learning is in progress; this is called continuous assessment. The summative is done when the course is ended; this assessment is conducted at the end of the term or semester as the case may be, the two are important in computer science assessment.

When carried out as an on-going process, assessment is known as Continuous Assessment (CA). Assessment is either internal or external. Internal assessment refers to school-based assessment, which includes class assignments, practical reports, teacher-made tests, recap exercises, projects, field studies and all these tools form part of the classroom continuous assessment strategies. A continuous assessment strategy refers to the different tools/procedures used in the classroom to understand the academic achievement levels of learners in terms of their knowledge, attitudes and values. Also a strategy in assessment is a purposefully conceived and determined plan of action. It is a pattern of assessment that seems to attain certain outcomes and to guard against others (Aggarwal, 2011). External assessment refers to tests that are produced by examining bodies away from school. For example, the Senior Secondary Certificate Examination (SSCE) is a public examination offered by the West African Examination Council (WAEC) or National Examination Council (NECO) that forms part of external assessment at O' Level.

Continuous assessment is very important in all educational levels in Nigeria. Ogar (2007) opined that through continuous assessment, progress of each student can be measured and monitored and appropriate counselling method can be put in place as the case may demand. The National Policy on Education laid strong emphasis on the use of continuous assessment practice at the various levels of Nigeria educational system. Osokoya (2009) viewed continuous assessment as the method of finding out what the students have gained from learning activities. Abbas (2009) said ordinary continuous assessment is an on-going test device which is comprehensive and include the three domains of learning. Continuous assessment must include project, internet assignment, use of community resources and many more; Continuous assessments must not only be single assignment as it is being done by some teachers and in some school. CA is a formative evaluation procedure concerned with finding out, in a systematic manner, the over-all gains that a student has made in terms of knowledge, attitudes and skills after a given set of learning experience (Ogunnyi, 2005). According to Aggarwal (2011), CA is not simply continuous testing. Continuous assessment does not solely depend on formal tests. CA is more than giving a test; it involves every decision made by the teacher in class to improve students' achievement. CA may take different forms such as formal questions given to students during class, take-home assignments/exercises and recapitulation exercises.

In higher institutions of learning in Nigeria formative assessments (continuous assessments) are conducted by lecturers within semesters when lectures are on-going while summative assessments (semester exams) are conducted at the end of semester. The totality of scores obtained in the formative and summative assessments are used to calculate the students' grade point average. However, lecturers often find out that some students that perform well in the continuous assessments still have woeful performance in the semester exams. This might be due to the examination oriented education system in Nigeria which has persisted since inception of education. All the teaching and learning is centred on passing final examinations. It is sometimes referred to as "teaching to the test". This challenge is compounded even further by the fact that students' promotion or selection to another level is based on student's grades. Kellaghan and Greany (2005) believed that kind of assessment is subjective, informal, immediate, on-going, and intuitive as it interacts with learning as it occurs. The downside of this approach is that students are encouraged to exercise rote memorization of facts and cramming of information rather than acquiring problem-solving skills. This study was therefore conceived,

designed and undertaken in order to analyse the various classroom assessment practice and find out whether there was any relationship between CA practices with students' performance in computer science department, Federal College of Wildlife Management, New Bussa.

1.1 Statement of the problem

There is decline in the after school performance of students in Nigerian tertiary institutions such that the quality of graduates being produced by the nation's tertiary institutions is questionable. Little wonder why graduates are subject to re-examination by companies and establishments that want to employ graduates through conduct of aptitude tests. Also, graduates of a higher institutions pursuing higher learning in other schools in Nigeria and abroad are oftentimes subjected to re-examination through different means. Therefore there is need to promote learning and improve performance in tertiary institutions in Nigeria.

The rationale behind using teacher-based classroom assessment scores as a component for promoting learning and improving performance in tertiary institutions in Nigeria among others is that 'one-shot' examinations are unable to fully examine all that a student has acquired after several years of study. However, the resultant feature has been inadequate implementation in terms of frequency and forms of continuous assessment in various courses of various tertiary institutions national wide hence the need to discover whether a relationship exist between continuous assessment frequency and strategies adopted by lecturers in tertiary institutions in Nigeria and students' performance in final examinations in various semester courses offered by the students.

1.2 Purpose of the study

The aim of this research is to investigate roles of continuous assessment scores in computer science students' academic performance in Federal College of Wildlife Management, New Bussa. The objectives include:

- To examine the various forms and frequency of continuous assessment in the study area.
- To examine the roles of various forms of continuous assessment in determining students' semester examination grade.
- To examine the roles of frequency of continuous assessment in determining students' semester examination grade.

1.4 Research Hypothesis

$H_0$1: There is no correlation between frequency of continuous assessment and students' examination scores.
$H_0$2: There is no correlation between class assignment scores and the students' examination scores.
$H_0$3: There is no correlation between practical scores and the students' examination scores.
$H_0$4: There is no correlation between mid-semester test scores and the students' examination scores.
$H_0$5: There is no correlation between class attendance scores and the students' examination scores.
$H_0$6: There is no correlation between computer based test scores and the students' examination scores.

II. LITERATURE REVIEW

2.1 Theoretical Review

The Classical Conditioning Theory by Ivan Pavlov (1929-1936) guided this study. Pavlov performed an experiment on dogs and discovered that dogs learnt to salivate in response to a bell. Many trials had been given in each of which the bell was sounded and food was simultaneously (slightly later) presented. It was thought therefore that students would get good grades semester examination in any course whenever the teacher taught and students were exposed to many trials through various forms of continuous assessment activities. According to Pavlov, Conditioned Response (CR) was the response developed during training and Conditioned Stimulus (CS) was the stimulus, which included training/teaching activities intended to evoke the CR (i.e. good grades in the semester examination). Unconditioned Response (UR) was the same or almost the same response as the CR but it existed prior to training, normally being given whenever a certain stimulus; the Unconditioned Stimulus (US) was presented. In this study, the Conditioned Response (CR) was the attainment of good grades, which was evoked by the Conditioned Stimulus (CS), which was continuous assessment, and Unconditioned Stimulus was the teaching.

To Pavlov, pairing food and the sound of the bell made the dog salivate and in this study, pairing of teaching and continuous assessment activities could make students perform better in terms of good grades in the semester examinations. The theory of Pavlov that suggested conditioned stimulus and conditioned response was an important aspect to this study in helping us to understand the relationship between continuous assessment strategies being used in the college which is the case study (i.e. assignments, mid-semester and computer based tests, practical and attendance score) as the stimuli and academic performance of students in semester examination.

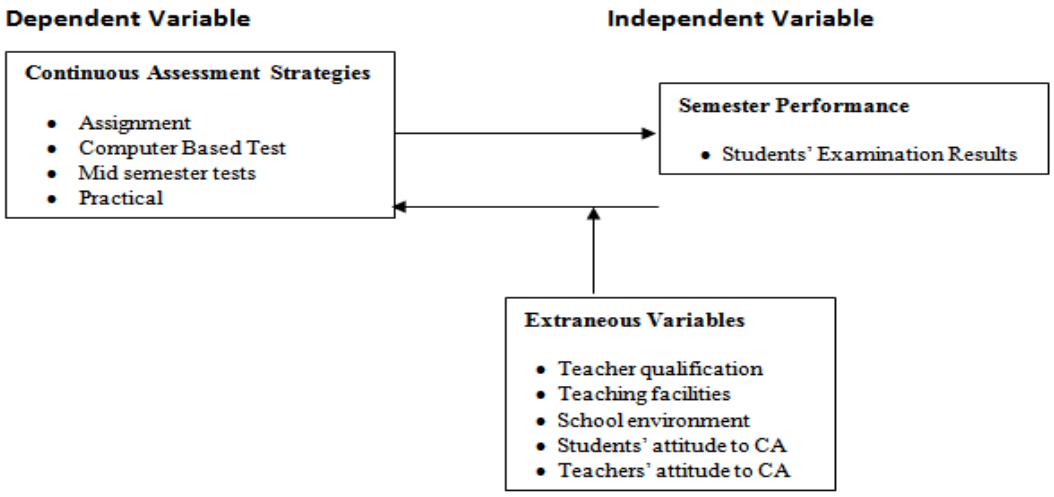

Fig. 1: The Theoretical Framework

The conceptual framework (fig. 1) clearly indicates that continuous assessment strategies being used by the teachers are likely to play certain role in students' performance in various courses in tertiary institutions. Students attending schools where the teachers were using various continuous assessment strategy tools regularly could perform better. There are also extraneous factors that may influence the relationship between continuous assessment strategies being used and students' performance in "A" level examinations, such as teacher's qualifications, available teaching facilities, and school environment.

2.2 Conceptual Review

Getting a good education and doing well in school are widely regarded as critical preparation for most types of success in life. Achievement tests are designed to assess current performance in an academic area. Because achievement is viewed as an indicator of previous learning, it is often used to predict future academic success. An achievement test administered in a school setting would typically include separate measures of vocabulary, language skills and reading comprehension, arithmetic computation and problem solving, science, and social studies. Individual achievement is determined by comparison of results with average scores derived from large representative national or local samples. Scores may be expressed in terms of "grade-level equivalents"; for example, an advanced third-grade pupil may be reading on a level equivalent to that of the average fourth-grade student (Schnitzer, 2007).

Assessment is a word that is used every day in human interaction. When trying to assess the worth of anything, we need information or yardsticks against which to base our judgments on. In education, we need information to determine the extent to which students have benefited from a course of study. Assessment is broadly defined as a process of collecting information about individuals and groups for the purpose of making decisions (Salvia and Ysseldyke, 1998) cited in (Marva, 2008). They identified the following purposes of assessment:-

- Identify, diagnose, and provide essential services to selected child and family population.
- Determine individual developmental needs, strengths and aspirations.
- Determine individual growth, development and learning progress and academic achievements and challenges.
- Communicate with and assist learners in reflecting on their own progress and setting learning and achievement goals.
- Communicate individual student progress and needs with parents or guardians.
- Analyze curriculum content and teaching strategies and make needed adjustments to assure student success.

Earl (2006) stated that "Traditionally, assessment and tests or examinations were synonymous, and their role was clear and consistent with the purposes of schooling-testing of segmented competencies and knowledge from the school curriculum as a way of sorting students into groups and deciding about future schooling. Assessment was based on the "concordance" or fidelity of the students' responses to the material that was delivered.

Wilson (1996) cited in (Marva, 2008) submits that assessment must satisfy many goals such as providing feedback to students, offering diagnostic information for the teacher to use, provide summary

information for record keeping ,proffering evidence for reports, and directing efforts at curriculum and instructional adaptations. Before the creation of West African Examinations Council in 1952, pre-tertiary institutions in Nigeria were taking examinations of British accredited bodies. These were one-shot, theory based examinations which were often criticized for not fully assessing ability to apply the knowledge and skills acquired. A student's performance over several years of schooling was determined by one-shot examination under controlled conditions which was criticised of causing stress and anxiety in students, of tending to dominate syllabus rather than reflect them, of making syllabus restricted to examinable subjects only, give rise to highest level of chance, and made examinations summative in nature without providing feedback during the learning process.Kolawole and Ala (2013) noted: "We are training students for examinations with enthusiasm but examination results are not translated into food, clothing, housing and water, political and economic development" There has therefore been a search for a fairer and most adequate form of assessment of attainment of students. Concepts like alternative assessment and continuous assessment have been put forth as solutions to the problem.

The repeated emphasis being placed on continuous assessment is a clear evidence of its importance. The National Steering Committee on Continuous Assessment in Nigeria Schools led by Professor Yoloye regards continuous assessment as a method of ascertaining what a child gains from schooling in terms of knowledge, industry and character development, taking into account all his/her performances in tests, assignments, projects and other educational activities during a given period of term, year, or during the entire period of an educational level (Ipaye, 1995 in Mary and Adeyemi, 2010). It is also a method of using the recorded performances of each pupil to help him or her improve on his or her achievement through guidance. According to Ezewu and Okoye (1986) in Mary and Adeyemi (2010), 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. In other words, continuous assessment should be systematic, comprehensive, and cumulative and guidance oriented.

Continuous assessment is systematic in the sense that it is planned, graded to suit the age and experience of the children and is given at suitable intervals during the school year. Appropriate timing saves students from being tested to death or becoming bored with too frequent assessments. Comprehensiveness of continuous assessment means that it is not focused on academic skills alone. It embraces the cognitive, the psychomotor and the affective domains. A child is assessed as a total entity using all the psychometric devises such as test and non-test techniques. Cumulative characteristics of continuous assessment means that all information gathered on the individual has to be pooled together before a decision can be taken. To say that continuous assessment is guidance oriented means that the information so collected is to be used for educational, vocational and personal- social decision-making for the child. Guidance and counselling activities thrive better on valid, sequential, systematic, continuous, cumulative and comprehensive information (Denga, 1986 in Mary and Adeyemi, 2010).

Conceptually as well as in practice, continuous assessment provides feedback to children and teachers. Such feedback provides information which is used for purposes of improving on the child's performance or modifying the content, context and methods of teaching, as well as in making a variety of other decisions.

The practice of continuous assessment has been associated with certain advantages such as:

- It provides a more representative sampling of students' performance across time than the traditional examination system. (Oyedeji, 2007);
- It provides a constant stream of information about students' progress;
- It is fairer to students;
- It motivates students to learn as knowledge of results serves as a successful reward;
- It integrates teaching, learning and assessment.

Continuous assessment however has certain disadvantages. These include teacher subjectivity, the existence of different standards in different schools, high implications on time in terms of record keeping. Continuous assessment is a method of evaluating the progress and achievement of students in educational institutions. According to Yoloye (2013), continuous assessment aims at getting the truest possible picture of each student's ability and at the same time helping each student to develop his or her abilities to the fullest. The method or process of continuous assessment takes into account in a systematic view of the whole performance of the students during a given period of schooling. Apart from all these, continuous assessment has the characteristics of being:

- Comprehensive by making use of many evaluation instruments;
- Cumulative by putting into consideration all the past records to compute the final grades of the students (Ward, 2005).

Ojerinde and Falayajo (2007) asserted that continuous (school based) assessment CA is among others, systematic and comprehensive. Okonkwo (2009) argues that such an assessment should yield the measures of the students' achievement. While Okedara (2006) found a positive correlation between the CA and end of course (certificate) Examination Grades, Ali and Akibue (2011) found the CA scores of their subjects not sufficiently reliable. Ojerinde (2007) found that many problems are embedded in the approach of using scores or grade for assessing academic performance, for example teachers may be biased.

Nitko (2010) described continuous assessment as an on-going process of gathering and interpreting information about student learning. It is used in making decisions about what to teach and how well students have learned. According to Ojerinde & Falayajo (2007), continuous assessment is an assessment procedure whereby the final grading of a student in any subject takes into account, in a systematic way, the progress of the student throughout the program of study. Continuous assessment has been described as cumulative, comprehensive, systematic, diagnostic, formative and guidance oriented (Estey, 2003; Tamakloe, Amedahe & Attah, 2009).

III. METHODOLOGY

The study employs the case study design as it was centred on computer science department of Federal college of wildlife management, New Bussa. It also employs correlational design whereby the variables were correlated to establish the research measures. This design is suitable for this study because the study is aimed at exploring the relationship between the variables which are the continuous assessment scores and the semester examination grades obtained in some ND1 and ND2 courses by offered by current ND2 students of 2013/2014 sets of National Diploma students of computer science department in the college.

The entire results of semester courses offered by all students that have passed through computer science department in the college form the population of the study. However, due to the time frame of project and consideration of ease of access to the students' results within the specified time frame, twelve (12) courses were decided upon to be used for the study purposively. The subjects sampled for the study were results of computer science departmental courses offered by 2013/2014 set of students. Simple random sampling technique using hat and draw method was employed to select twelve (12) computer courses out of the entire (22) courses offered by the students in both semesters of ND1 and ND2. The twenty two (22) courses were written in pieces of papers which were put in a container and thoroughly mixed before twelve (12) courses were selected randomly. These twelve (12) courses were believed to provide approximate measurements or the trend of performance of the students.

The research instrument was the breakdown of results (C.A's and examination) of courses offered within the four semester time frame by the 2013/2014 set of students retrieved from academic affairs unit of the college.In Federal College of Wildlife Management which serves our case study, continuous assessment is an on-going periodic whose form (e.g. group project, internet assignment, class assignment, teacher-made test, field studies, recap exercises, seminar that is being presented, computer based assessment, and practical reports) and frequency (number of forms used) is determined by the lecturer of each courses. The categories of choice of assessment as predetermined by the examination committee of the college include:

- Computer based test
- Mid-semester test
- Class assignment
- Practical and
- Attendance.

Continuous assessment takes a total of 40% (irrespective of the form(s) and frequency of continuous assessment) while the semester examination takes 60% of the students' final scores. The overall percentage (C.A + Semester Exam) score of students determines the grade equivalence as shown below: (any student that score below C carry over a particular course)

- 80 – 100 = A
- 70 – 79 = AB
- 60 – 69 = B
- 50 – 59 = BC
- 40 – 49 = C
- 30 – 39 = CD
- 20 – 29 = D
- 10 – 19 = E
- 0 – 9 = F

The results obtained are already moderated and validated and therefore require no reliability test because they are standardized results of an approved and recognised tertiary institution in the country.The students' result were analysed using descriptive statistics, T – test and correlation statistical testing technique with the aid of statistical package for social sciences (SPSS).

IV. RESULT AND DISCUSSION

4.1 Descriptive Analysis

The only demographic characteristic that requires emphasis includes the number of students in the class each session and the students' gender, students' result descriptive statistics and the forms of continuous assessments used.

Table 1a: Number of students each session/semester

		Frequency	Percent
Valid	100L (first semester)	38	100.0
	200L (second semester)	38	100.0
	200L (first semester)	36	92.31
	300L(second semester)	36	92.31

The table above shows that 2 (representing 7.69%) of the students dropped off due to one reason or the other when they got to 200L second semester.

Table 1b: Distribution of respondents according to sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	29	76.3	76.3	76.3
	Female	9	23.7	23.7	100.0
	Total	38	100.0	100.0	

The table above shows that 76.3% of the students are male while the remaining 23.7% are female.

Table 1c: Descriptive Statistics of the students' result

	N	Minimum	Maximum	Mean	Std. Deviation
COM 109 Total CA Score	38	28	39	34.92	3.436
COM 121 Total CA Score	38	26	39	33.84	3.568
COM 122 Total CA Score	38	25	38	33.59	3.234
COM 123 Total CA Score	38	18	37	27.20	4.089
COM 124 Total CA Score	38	19	39	30.32	5.329
COM 125 Total CA Score	38	19	29	24.16	2.086
COM 126 Total CA Score	38	18	34	26.09	3.564
COM 211 Total CA Score	34	4	34	22.32	4.778
COM 212 Total CA Score	34	9	35	23.69	4.838
COM 213 Total CA Score	34	19	36	27.62	4.827
COM 214 Total CA Score	34	22	39	33.59	4.439
COM 215 Total CA Score	34	14	26	20.21	3.540
COM 216 Total CA Score	34	20	37	28.93	4.528
COM 221 Total CA Score	34	23	39	32.72	3.862
COM 225 Total CA Score	34	11	31	21.66	5.738
COM 109 Exam Score	38	16	55	34.00	10.682
COM 121 Exam Score	38	9	56	37.28	13.347
COM 122 Exam Score	38	9	56	36.68	10.108
COM 123 Exam Score	38	15	54	34.25	9.761
COM 124 Exam Score	38	10	56	36.33	10.536
COM 125 Exam Score	37	11	59	44.95	11.225
COM 126 Exam Score	38	11	50	31.72	9.897
COM 211 Exam Score	34	8	60	29.18	11.253
COM 212 Exam Score	34	17	56	36.74	10.048
COM 213 Exam Score	34	22	54	37.65	8.883
COM 214 Exam Score	34	26	59	41.18	11.115
COM 215 Exam Score	34	13	43	26.29	6.834
COM 216 Exam Score	34	18	41	26.81	5.476
COM 221 Exam Score	34	17	55	30.66	9.795

COM 225 Exam Score	34	13	49	33.01	7.695

Table 1c shows the descriptive statistics of the C. A., and exam scores of the students in the selected courses. The total obtainable C.A score was 40%, while the total obtainable exam score was 60.0%. It was shown that on the average, the least C. A. score was obtained in COM 215 (mean performance = 20.21) while the highest C.A. score was obtained in COM 109 (mean performance = 34.92). The lowest mean examination score was in the same COM 215 (mean performance = 26.29) which had the least C.A score, however, the highest exam score was not obtained in COM 109 which had the highest C.A sore but in COM 125 (mean performance = 44.95).

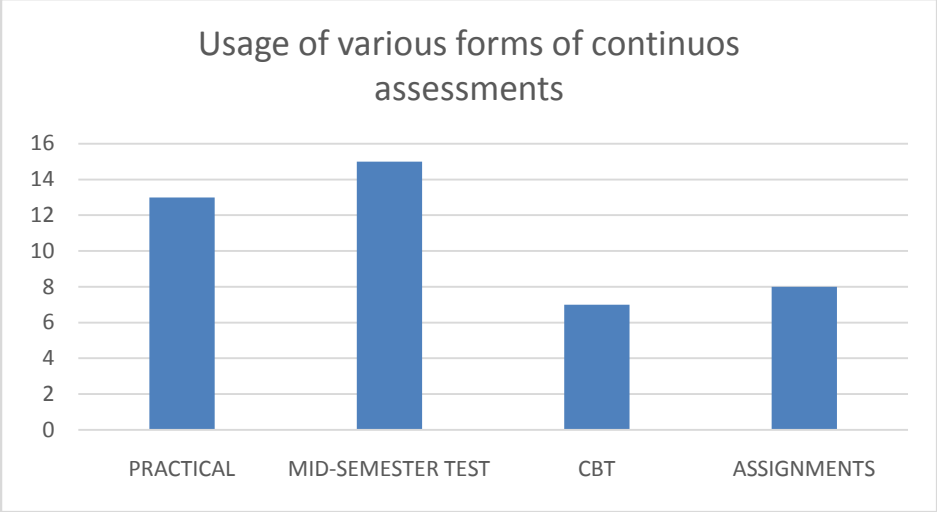

Fig.2: Forms of continuous assessments usage

Figure 2 is a chart showing how much time each continuous assessment strategies are used, it shows that it was only mid-semester test that was adopted in all the courses, practical was adopted in thirteen (13) courses, CBT was adopted in seven (7) courses while class assignments was adopted in eight (8) of the courses.

4.2 Analysis of findings

The major objective of this section is to present and analyse the result of data in line with the scores of the students to test the hypothesis.

Hypothesis 1: There is no significance difference in examination performances of students based on number of forms/frequency of administration of continuous assessment.

Table 2: Correlational analysis of C.A frequency and exam scores

Variable	Mean	df	t-value	Sig. (2-tailed)	Remark
Test Frequency (2) * Exam Score	29.7206	536	-4.045	0.000	Significant
Test Frequency (3) * Exam Score	35.4213				

Table 2 which shows the t-test reports of examination scores when two (2) and three (3) forms of continuous assessment were administered to the same sets of students assumes that the number of forms of continuous assessment used refers to the frequency of continuous assessment used, the tests reported a significant difference in the performances of the students since Sig.(2-tailed) < 0.01.

Hypothesis 2: There is no correlation between class assignment scores and the students' examination scores.

Table 3: Correlational analysis of assignment score and exam score

SCORE	Corresponding Examination	N	Correlation Test (Pearson)
COM 109 Assignment	Pearson Correlation Sig. (2-tailed)	38	a
COM 121 Assignment	Pearson Correlation Sig. (2-tailed)	38	0.440(**) 0.006
COM 122 Assignment	Pearson Correlation Sig. (2-tailed)	38	-0.222 0.211

COM 123 Assignment	Pearson Correlation Sig. (2-tailed)	34	0.243(**) 0.141
COM 124 Assignment	Pearson Correlation Sig. (2-tailed)	34	.004 .980
COM 125 Assignment	Pearson Correlation Sig. (2-tailed)	34	A
COM 214 Assignment	Pearson Correlation Sig. (2-tailed)	34	.167 .344
COM 215 Assignment	Pearson Correlation Sig. (2-tailed)	34	.201 .262

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
a Cannot be computed because at least one of the variables is constant.
The table above shows the correlation test (linear associations) between the assignment scores and examination scores of the students in the selected courses. It was shown from the table that it was only in COM 121 and COM 123 that there was significant relationship between assignment scores and examination scores of the students. The relationship could not be tested in COM 109 and COM 125.

Hypothesis 3: There is no correlation between practical scores and the students' examination scores.

Table 4: Correlational analysis of practical score and examination score

SCORE	Corresponding Examination	N	Correlation Test (Pearson)
COM 109 Practical	Pearson Correlation Sig. (2-tailed)	38	a
COM 121 Practical	Pearson Correlation Sig. (2-tailed)	38	a
COM 122 Practical	Pearson Correlation Sig. (2-tailed)	38	0.490** 0.002
COM 123 Practical	Pearson Correlation Sig. (2-tailed)	34	0.592(**) 0.000
COM 124 Practical	Pearson Correlation Sig. (2-tailed)	34	0.584** 0.000
COM 125 Practical	Pearson Correlation Sig. (2-tailed)	34	A
COM 126 Practical	Pearson Correlation Sig. (2-tailed)	34	0.660** 0.000
COM 211 Practical	Pearson Correlation Sig. (2-tailed)	34	0.547** 0.001
COM 212 Practical	Pearson Correlation Sig. (2-tailed)	34	0.005 0.978
COM 213 Practical	Pearson Correlation Sig. (2-tailed)	34	0.731** 0.000
COM 214 Practical	Pearson Correlation Sig. (2-tailed)	34	0.474** 0.005
COM 216 Practical	Pearson Correlation Sig. (2-tailed)	34	0.132** 0.458
COM 221 Practical	Pearson Correlation Sig. (2-tailed)	34	0.043 0.807

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
a Cannot be computed because at least one of the variables is constant.
The table above shows the correlation test (linear associations) between the students' scores in practical and examination in the selected courses. It was shown from the table that it was only in COM 212 and COM 221

that there was NO significant relationship between practical scores and examination scores of the students. The relationship could not be tested in COM 109, COM 121 and COM 125.

Hypothesis 4: There is no correlation between computer based test scores and the students' examination scores.

Table 5: Correlational analysis of CBT score and examination score

SCORE	Corresponding Examination	N	Correlation Test (Pearson)
COM 126 CBT	Pearson Correlation Sig. (2-tailed)	38	0.441** 0.006
COM 211 CBT	Pearson Correlation Sig. (2-tailed)	38	0.320 0.065
COM 212 CBT	Pearson Correlation Sig. (2-tailed)	38	0.200 0.256
COM 213 CBT	Pearson Correlation Sig. (2-tailed)	34	0.639(**) 0.000
COM 216 CBT	Pearson Correlation Sig. (2-tailed)	34	0.229 0.194
COM 221 CBT	Pearson Correlation Sig. (2-tailed)	34	0.175 0.322
COM 225 CBT	Pearson Correlation Sig. (2-tailed)	34	0.305 0.079

****** Correlation is significant at the 0.01 level (2-tailed).

***** Correlation is significant at the 0.05 level (2-tailed).

The table above shows the correlation test (linear associations) between the computer-based test scores and examination scores of the students in the selected courses. It was shown from the table that it was only in COM 126 and COM 213 that there was significant relationship between computer based test scores and examination scores of the students.

Hypothesis 5: There is no correlation between mid-semester test scores and the students' examination scores.

Table 6: Correlational analysis of mid semester test and exam score

SCORE	Corresponding Examination	N	Correlation Test (Pearson)
COM 109 Mid-Test	Pearson Correlation Sig. (2-tailed)	38	0.488** 0.002
COM 121 Mid-Test	Pearson Correlation Sig. (2-tailed)	38	0.625** 0.000
COM 122 Mid-Test	Pearson Correlation Sig. (2-tailed)	38	0.416** 0.009
COM 123 Mid-Test	Pearson Correlation Sig. (2-tailed)	34	0.186 0.283
COM 124 Mid-Test	Pearson Correlation Sig. (2-tailed)	34	-0.039** 0.817
COM 125 Mid-Test	Pearson Correlation Sig. (2-tailed)	34	-0.147 0.384
COM 126 Mid-Test	Pearson Correlation Sig. (2-tailed)	34	0.122 0.467
COM 211 Mid-Test	Pearson Correlation Sig. (2-tailed)	34	0.718** 0.000
COM 212 Mid-Test	Pearson Correlation Sig. (2-tailed)	34	0.646** 0.000
COM 213 Mid-Test	Pearson Correlation Sig. (2-tailed)	34	0.209 0.236
COM 214 Mid-Test	Pearson Correlation Sig. (2-tailed)	34	0.317 0.068
COM 215 Mid-Test	Pearson Correlation Sig. (2-tailed)	34	0.256 0.144
COM 216 Mid-Test	Pearson Correlation Sig. (2-tailed)	34	-0.005** 0. 979

COM 221 Mid-Test	Pearson Correlation Sig. (2-tailed)	34	0.412* 0.015
COM 225 Mid-Test	Pearson Correlation Sig. (2-tailed)	34	0.418* 0.014

****** Correlation is significant at the 0.01 level (2-tailed).

***** Correlation is significant at the 0.05 level (2-tailed).

The table above shows the correlation test (linear associations) between the mid semester test scores and examination scores of the students in the selected courses. It was shown from the table that there was significant relationship between mid-semester test scores and examination scores of the students in COM 109, COM 121 and COM 122, COM 211, COM 212, COM 221 and COM 225.

Hypothesis 6: There is no correlation between overall C.A. scores and the students' examination scores.

Table 7: Correlational analysis of overall C.A and exam score

SCORE	Corresponding Examination	N	Correlation Test (Pearson)
COM 109 Overall C.A	Pearson Correlation Sig. (2-tailed)	38	0.488** 0.002
COM 121 Overall C.A	Pearson Correlation Sig. (2-tailed)	38	0.666** 0.000
COM 122 Overall C.A	Pearson Correlation Sig. (2-tailed)	38	0.358** 0.027
COM 123 Overall C.A	Pearson Correlation Sig. (2-tailed)	34	0.604** 0.000
COM 124 Overall C.A	Pearson Correlation Sig. (2-tailed)	34	0.519** 0.004
COM 125 Overall C.A	Pearson Correlation Sig. (2-tailed)	34	0.025 0.883
COM 126 Overall C.A	Pearson Correlation Sig. (2-tailed)	34	0.679** 0.000
COM 211 Overall C.A	Pearson Correlation Sig. (2-tailed)	34	0.683** 0.000
COM 212 Overall C.A	Pearson Correlation Sig. (2-tailed)	34	0.508** 0.002
COM 213 Overall C.A	Pearson Correlation Sig. (2-tailed)	34	0.798** 0.000
COM 214 Overall C.A	Pearson Correlation Sig. (2-tailed)	34	0.392* 0.022
COM 215 Overall C.A	Pearson Correlation Sig. (2-tailed)	34	-0.396** 0. 021
COM 216 Overall C.A	Pearson Correlation Sig. (2-tailed)	34	0.167 0. 346
COM 221 Overall C.A	Pearson Correlation Sig. (2-tailed)	34	0.389** 0.023
COM 225 Overall C.A	Pearson Correlation Sig. (2-tailed)	34	0.443** 0.009

****** Correlation is significant at the 0.01 level (2-tailed).

***** Correlation is significant at the 0.05 level (2-tailed).

The table above shows the correlation test (linear associations) between the mid overall C.A scores and examination scores of the students in the selected courses. It was shown from the table that it was only in COM 125 and COM 216 that there was NO significance difference while COM 215 had a negative correlation.

4.3 Discussion of findings

From the analysis in section 4.1, in table 1a the entire students' population at matriculation were 38. However, due to one reason or the other, two (2) representing 7.69% of the students dropped off in first semester of 200L. The number of the male students was shown to be 52.6% higher than the number of the female students in table 1b. Table 1c shows COM 215 as having lowest mean performance in both continuous

assessment and end of semester examination implying that the students' continuous assessment performance in this course determines their performance in the semester examination. However, COM 109 that had the highest mean performance in continuous assessment did not repeat the same highest performance in the examination as mean performance in its exam (34.00) was only better than five (5) courses. The reason which was not far-fetched was explained later in table 3 and 4 which showed that the students were given the same scores in practical and assignments which might be due to an upgrade required as result of mass failure in exams.

The study revealed that four (4) varieties of CA strategies were being used in Federal college of Wildlife Management, these include class assignments, practical, computer based test and mid semester written test out of which the mid semester written tests were the most commonly used. There was no course in which all the four (4) forms were shown to be used, each lecturer used either three (3) or two (2) forms of the test i.e. they used the mid semester test in conjunction with one or two other forms of the test strategies.

The t-test reported in table 2 proves the conditioning theory of Ivan Pavlov right, it shows that when three alternative forms of continuous assessment was used, the students perform significantly better (Mean difference = 5.701) compared with when only two alternative forms were used. This supported Mwebeza (2005) that found that students would get good grades whenever the students were exposed to many trials of continuous assessment activities, according to him, the higher the number of trials, the higher the students' examination performance.

The correlation test reported in table 3 shows that the test could not be computed for COM 109 and COM 125 because the entire students were assigned the same home assignment scores in these courses, this could however be an upgrade score that the lecturer concerned assigned to the students. Aside the two courses, it was only COM 125 that had a negative CA – Exam correlation, other courses had a positive correlation even though it was only in COM 121 and COM 123 that the correlation was significant. It is therefore discovered that a properly monitored home assignments given to students will have a positive significance on the students' retention and ultimately performance. This supported the findings of Mwebeza (2005) that found that take-home assignment was the best strategy for helping students to learn than other question-answer approach as the take-home assignments assisted them to develop a good revising habit.

The correlation test reported in table 4 shows that the test could not be computed for COM 109, COM 121 and COM 125 because the entire students were assigned the same practical scores in these courses, this could however be an upgrade score that the lecturer concerned assigned to the students. Aside the two courses, all the other courses had positive correlations which were all significant except COM 221 which was not significant. It is therefore inferred that well-coordinated practical classes that involved the students adequately has positive significance on the students' retention and ultimately performance. This was supported by the popular Chinese proverb:

"Tell me, I'll forget. Show me I'll remember. Involve me, I'll understand."

This is similar to the findings of Ojerinde and Falayajo (2007) that reported that students' attitudes to learning physics practical significantly affect their academic performances in physics as a subject.

The correlation test reported in table 5 shows that all the other courses had a positive computer based test – semester exam correlation however, it was only in COM 126 and COM 213 that the test was found to be significant. It is therefore inferred that well-coordinated computer based test has positive significance on the students' retention and ultimately performance as "computer based test affords students to prepare far and wide because the students know that computer based test prevents cheating" in the words of Adesina (2015).

The correlation test reported in table 6 shows that some courses had positive had positive correlations while others had negative correlations, thus, correlation of mid semester tests to semester examination supported the words of Mwebeza (2005), Okonkwo (2003) and Kobiowu and Alao (2005) that concluded that written test of which students have been informed about neither reduce the fear of students for final examinations nor reinforce students to read more nor does it improve performances in final examination as it only informs the serious (not the unserious ones) students of their main weak areas, which helped them to devise ways of improving on their performance.

From the foregoing, practical test performance had the best significance correlation compared to other continuous assessment strategies while mid-semester test had the lowest significance correlation in all courses.

V. SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary of findings

The study investigated into influence of continuous assessment on computer science students' academic performance in Federal College of Wildlife Management, New Bussa. The rationale behind the study was established to be because of the general belief that assessment (which could include both, formative and summative) is believed to be very important in teaching and learning process; through assessment it is believed that feedback could be provided to both students and lecturers, yet the performance of students in tertiary

educational institutions in Nigeria has attracted much criticisms. Proponents of such beliefs base their assumption on several reasons including inadequate assessment methods.

A tertiary institution in the researcher's catchment area that is, New Bussa was therefore selected for the study in which the C.A. (assignment, computer based test, mid semester test, practical) and semester examination results of the 2013/2014 set were analysed. The results were retrieved from the appropriate quarters in the school which serves as data for the study. The study raised questions such as each of the continuous assessment practices had influence on scores in examination. The students were 38 in 100L but were later reduced to 36 students; there were 29 males and 9 females. The students' results were analysed through descriptive statistics (frequency count, simple percentages and comparison of means) and the hypothesis propounded (which tests correlation between the C.A practices and the semester exam) were tested using student's t-test and Pearson correlation statistical method.

It was found that the higher the forms / frequency of C.A. the higher the performance of the students. Practical was shown to have the highest correlation with the students' examination, this was followed by Home assignment, computer based test while mid semester test had the lowest correlation significance.

5.2 Conclusion

Based upon the findings of this study, it was concluded that:

i) The students' scores obtained in the final examination is a function of the scores obtained in various forms of C.A; however, practical form had the most positive significance correlation while mid-semester test had the least.
ii) The students' final grades is shown to be a function of the scores obtained in the C.A
iii) If the disadvantages of continuous assessments (which include teacher subjectivity, the existence of different standards, high implications on time in terms of record keeping, unnecessary upgrading etc.) were well taken care of, continuous assessments is really a systematic view of the whole performance of the students during a given period of schooling.

5.3 Limitation of the study

This study was designed to investigate the effects of continuous assessments on student's academic performance and also examine various problems associated with conducting efficient continuous assessments with due regard to students' attitude to continuous assessments. However, the study did not include a questionnaire to rate students' attitude to continuous assessment due to certain uncontrolled logistics. Therefore, significance relationship between students' attitude to continuous assessment and their C.A. scores could not be ascertained.

5.4 Recommendations

In view of the findings, the following recommendations were made.

i) Lecturers should focus their efforts on making C.A tests more efficient by making use of various forms of C.A strategies because there is an appreciable effect on students' examination score.
ii) Lecturers and school management are advised to concentrate less on mid-semester test and focus more on other forms of continuous assessments especially practical.
iii) Lecturers are advised to ensure continuous assessment serves as diagnostic information to provide feedback on students' performances.
iv) Students are advised to take periodical continuous assessments as serious as they take final examinations.
v) School management and authorities are being admonished to find a way of monitoring and continuous assessments enforce necessary standards pertaining to the conduct of continuous assessments for better C.A. efficiency.

5.4 Suggestion for further study

Considering the limitation of this study, the following topics are suggested for further study:

i) Gender based attitude to continuous assessment and its effects on student academic performance.
ii) Effects of students' attitude to continuous assessments and its effect on students' academic performances.
iii) Correlational study of students' attitude to grades obtained in continuous assessment and its effects on attitudes to final examination.

REFERENCES

[1]. **Adebayo A. (2002)**: "*Predictive validity of the Junior Secondary Certificate Examination for Academic Performance in Senior Secondary School Certificate in Examination in Ekiti State Nigeria*". Unpublished M. Ed Thesis University of Ado Ekiti Nigeria.
[2]. **Adesoji F. A., Kenni A. M. (2013)**: "*Continuous Assessment, Mock Examination Results and Gender as Predictor of Academic Performance of Chemistry student in WASSCE and NECO Examination in Ekiti State*".
[3]. **Adewuyi J.O. and Olookun O. (2001)**: "*Introduction to test and measurement in Education*" Odumat Press Publishers.

[4]. **Adigun J. O., Onihunwa J. Irunokhai E. Sada Y. and Adesina O. O. (2015)**: "*Effect of Gender on Students' Academic Performance in Computer Studies in Secondary Schools in New Bussa, Borgu Local Government of Niger State*". Journal of Education and Practice

[5]. **Adesina O. O. (2015):** *Role of computer based test in eliminating examination misconduct in Nigerian tertiary institutions*. Unpublished BSc.(Ed.)final year project, University of Ado Ekiti, Nigeria.

[6]. **Ajewole G.A (2005):** "*Science and technology in secondary schools, need for manpower development*". Journal of science Teachers Association of Nigeria,40(1 and 2), 63-64.

[7]. **Ali J. S, Akibue A (1988)**: **"***The Effect of a Continuous Assessment Programme on Secondary School Teachers' Performances on Continuous Assessment Practices*". In: Akpa G. O., Udoh S. U. (Eds).Toward implementing the 6-3-4-4

[8]. **Alonge M. F. (2003)**: "*Assessment and Examination the Pathways to Educational Development*", the 9th Inaugural Lecture delivered at University of Ado-Ekiti, Nigeria.

[9]. **Detterman, Douglas K**. "Intelligence." Microsoft® Student 2008 [DVD]. Redmond, WA: Microsoft Corporation, 2007.

[10]. **JAMB (2004)**: "*The validity of Assessment in Nigerian Secondary Schools*". Presented at the 30th Conference of the International Association for Educational Assessment (IAEA) in Manchester, United Kingdom from 5th to 10th October, 2004.

[11]. **Kolawole, E. B. and Ala, E. A. O. (2014)**: "*Effect of continuous assessment and gender on students' academic performance in mathematics in some selected states in the south west Nigeria*". Education Research Journal Vol. 4(1): 1-6, January 2014. Available online at http://www.resjournals.com/ERJ ISSN: 2026 – 6332 ©2014 International Research Journals.

[12]. **Kobiowu M. O. and Alao M. (2005): "***Continuous assessment and students" performance in „a" level secondary schools in Oyo state"*.

[13]. **Mary S. O. and Adeyemi T. O. (2003):** "*Variables Associated with the performance of students in the senior secondary certificate examinations in Ekiti State Nigeria*". Being a paper presented at the senior staff seminal.Ministry of Education Ado Ekiti Nigeria.

[14]. **National Science Foundation (2008):** "*Science and Engineering Indicator 2008*". Retrieved from http://www.nsf.Gov/statistics/ semd 08/cokoki.htm.

[15]. **Nitko, A. J. (2001)**: "*Educational assessment of students*" (3rd Ed.) New Jersey.

[16]. **Nwana, E. I. (2009)**: "*Effect of Continuous Assessment Scores on the Final Examination Scores obtained by Students at the Junior Secondary School (JSS) Level in Mathematics"*.

[17]. **Okedara J. T. (2006)**. "*Teacher-made tests as a Predictor of Academic Achievement in the Experimental Adult Literacy Classes in Ibadan*". Nigeria. The Counsellor 3(1&2):41-56.

[18]. **Ojerinde A. (2004):** "*Examination Malpractice in Nigerian Educational system: The NECO Annual Faculty of Education Lecture delivered at O. A. U*".

[19]. **Ojerinde D. and Falayajo W (2007)**: "*Continuous Assessment: A new approach*". Ibadan University Press Ltd.

[20]. **Okonkwo S. C. (2003):** "*Validity of Continuous Assessment in Nigeria Junior Secondary Schools-A Preliminary Investigation*". Afr. J. Inform, Technol. 6(2):233-240.

[21]. **Oyewobi, G. O. (2002):** "*Test and measurement: test construction and administration*". OYSCOED Publication, Series 2003. Pg. 110-115.

[22]. **Oyedeji O. A. (2007)**: "*Validity of continuous assessment scores as predictors of students' performance in junior secondary examinations in Nigeria*".

[23]. **Schnitzer, Phoebe Kazdin**. "Psychological Testing."Microsoft® Student 2008 [DVD]. Redmond, WA: Microsoft Corporation, 2007.

John Onihunwa." Roles of Continuous Assessment Scores in Determining the Academic Performance of Computer Science Students In Federal College Of Wildlife Management."American Journal of Engineering Research (AJER), vol. 7, no. 5, 2018, pp.07-20.