RELATIONSHIP BETWEEN CONTINUOUS ASSESSMENT SCORES AND PERFORMANCE IN ART IN PLATEAU STATE POST PRIMARY SCHOOLS

BY

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DECLARATION

I hereby declare that this thesis has been written by me and that it is a record of the research work conducted by myself. All the quotations used are indicated by quotation marks or indentation. All the sources of information are specifically acknowledged by the use of reference.

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D.N. Gofor

DEDICATION

This study is dedicated to the following:

Yilcir D. Gofor
Nendi D. Jari
Tongzum D. Gofor
Leritmwa D. Gofor
Rit'aa D. Jari
Seyilnen D. Gofor

who represent the future generation, whom this study is meant to improve.

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CERTIFICATION

The thesis entitled "Measurement of Relationship Between Continuous Assessment Scores and Performance in Art in Plateau State" by D.N. Gofor, meets the regulations governing the award of the degree of master of Art in Art Education and is approved for its contribution to knowledge and literary presentation.

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ABSTRACT

This study seeks to investigate the relationship between continuous assessment (C.A.) scores and examination performance among students in J.S.S. in Plateau State. Five hundred and seven (507) students were randomly selected and tested from thirteen schools in nine of the thirteen Education Inspectorate Zones of Plateau State. Their C.A. scores for three years were computed and compared to test the following null hypotheses:

i. there is no significant relationship between C.A. scores and examination scores in J.S.S. in Plateau State;

ii. gender does not affect performance of students in art in junior secondary schools;

iii. there is no significant differences in the C.A. performance of students in urban, semi urban and rural schools.

Pearson Product Moment Correlation (P.P.M.R.) was used to test hypothesis 1. A correlation of 0.394 higher than the table value of 0.88 was obtained at 505 degrees of freedom. The probability level of significance was 0.05 ($P<0.05$), inferring that significant difference exists between C.A. scores and examinations. The hypothesis that there is no significant relationship between continuous assessment and examination scores is therefore rejected.

To determine if gender affects performance t-test was used for comparison of the two variables. A t-value of 3,32 at 505 degrees of freedom was obtained while the table value was a.96 at same degree of freedom with probability level of significance of 0.05 ($P<0.05$). The hypothesis that gender does not affect performance in art in junior

secondary schools is therefore rejected, implying that significant difference exist in gender performance with the males performing better.

Analysis of variance was used to test hypothesis 3. The finding reveals significant differences in the students' mean performance according to location ranked as follows: urban 63,5769, semi urban 57,4032 and rural 50,7393, implying that location affects C.A. performance in the arts. The hypothesis is therefore rejected.

These findings generated the following recommendations:

i. Periodic research of this nature should be organized to identify C.A. problems to check cases of subjective assessment

ii. Sufficient staff in quality and quantity should be employed to check excess work-load while adequate materials and work-space be provided to ensure uniform learning conditions in all schools.

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DEFINITIONS OF TERMS AND ABBREVIATIONS

E.R.C.:	Educational Resource Centre
J.S.S.:	Junior Secondary School
S.S.S.:	Senior Secondary School
S.P.S.S.:	Statistical Package for Social Sciences
S.S.:	Sum of Squares
M.S.:	Mean of Square
S.M.C.:	St. Murumba College, Jos
S.L.C.:	St. Loius College Jos
Z.C.S.S.:	Zang Commercial Secondary School Bukuru
C.S.S:	Command Secondary School Jos
F.G.C.:	Federal Government College Jos
B.S.S.:	Boys Secondary School Gindiri
F.G.G.C.:	Federal Government Girls College Lantang
G.S.S.B.:	Government Secondary School Bet Pankshin
G.C.P.:	Government College Pankshin
G.C.B.:	Government College Bokkos
G.C.A.:	Government College Amper
G.S.S.A.:	Government Secondary School Ampang
Continuous Assessment (CA):	Assessment that is conducted at regular intervals during a course or programme of instruction, in a manner that is cumulative, systematic and comprehensive.
Internal Examination:	Examination conducted by subject teachers in individual school to determine the progress or otherwise of learners.,
External Examination:	Examination conducted by external bodies at the end of a programme and used for certification at state or national level.
W.A.E.C.:	West African Examination Council. A West African regional body responsible for the conduct of secondary school certificate external examination.

W.A.S.C.:	West African Schools Certificate awarded at the end of the course to secondary schools graduants.
6.3.3.4:	An educational system whereby children are trained for six years in primary schools, three years in junior secondary schools and the last three years in senior secondary schools.
Halo Effect:	Erroneous judgement of students' total abilities based on first impressions or specific information.

CHAPTER ONE

INTRODUCTION

1.1 Background

Continuous assessment is often regarded as a comprehensive mechanism for grading students' performance in the cognitive, affective, and psychomotor domains of learning (FMEST, 1985). It was first introduced into the Nigerian School System in 1982, along side the 6.3.3.4 system of education. Turton (1984), Ogunnoyi (1984), and Ohuche (1988) share the view that continuous assessment involves the assessment and recording of the total learning experiences and achievements of students throughout their school career. This is carried out in a manner that is systematic, cumulative, comprehensive and guidance-oriented, thereby ensuring that relevant information, from which far reaching decisions affecting the learner's academic and future life could be taken. Ebegulem (1982), and Dean (1996) add that the system also requires the use of a broad range of evaluation techniques to secure the vital data for decision making.

With its introduction, continuous assessment effectively replaces the old system of examination which according to Farrant (1980), assessed and certificated students on the basis of one final examination, mainly in the cognitive domain. But this has known to only encourage memorization or rote learning and create psychological tension that could lead to poor performance during end of term or final examinations. In addition, it makes no provision for students who fall sick during examination. This position is supported by Farrant (1980), Desforges (1989) and is also amplified by a Federal Ministry of Education, Science and Technology (F.M.E.S.T., 1985) document which adds that the over emphasis on examination grades and paper qualification has encouraged the prevailing large scale examination leakage and other examination malpractice witnessed even today, to the detriment of actual performance by the learners.

However, the foregoing does not imply that continuous assessment lacks certain weaknesses, as contained in the findings of Turton (1984)

and James (1998). They identified variation in the scoring procedures and grading among teachers using different assessment instruments. They also identified differences in the quality of tests and assignment instruments used by different teachers in different schools. Comparability of records of student's performance within the same school and across schools consequently becomes difficult. Furthermore, the cumulative nature of continuous assessment requires extensive record keeping, trained teaching and non-teaching personnel, facilities and equipment. Though the government is aware of these pre-requisite for successful implementation of the continuous assessment system, not much has been done to address this issue.

While the problems hindering the successful implementation of continuous assessment cuts across all subjects taught in the school curriculum, specific problems affecting individual subjects also exist. In the area of art education, the use of grades or numerical scores in assessing students' performance appears to be contentious. The outcome of several studies in this area of art education: Lowenfeld and Brittain (1975), Olorukooba (1977), Eisner (1989), Nwana (1981) and Osuagwu (1997), indicate that the main problem centers on how best to assess or grade students' progress either by using letter grades or numerical values to indicate or predict students' performance. The lack of uniform format for assessment can only compound the issue of comparability of scores between classes of the same school and across schools. This brings to question the reliability and validity of such procedure.

As James (1998) opined, assessment goes with quality teaching. However, Akolo (1989) found that inadequate staff both in quantity and quality is among the serious problems facing the teaching of art, which inversely affect assessment. The novelty of continuous assessment requires intensive training of personnel in pre-service and in-service programmes in data collection, analysis and interpretation. Arbitrary award of grades and subjective assessment can be checked by using trained personnel t improve validity and comparability of cores among schools. Again, the non-availability of art materials and equipment in school "A" which depends largely on improvised materials (where

obtainable) and the use of quality materials in school "B" does not make for fair comparison of performance and selection for further studies or job placement. Wachowiak (1985), Akolo (op cit), hold that adequate classroom facilities are a pre-requisite for successful teaching and by implication successful performance. Such variation in facilities are seen in state and federal schools as well as private elitist institutions.

Qualitative art product and experience is contingent upon, (a) adequate time devoted to teaching and learning, and (b) adequate time to produce the art products. Akolo (1989), observed that insufficient time for teaching and learning art can only result in inadequate creative sessions. Moreover some parents and schools generally consider art as a recreational activity that lacks serious academic value. This probably explains the lack of serious attitude towards it as regards the allocation of adequate time for teaching and learning. Continuous assessment in these circumstances experiences problems because teachers require to pay individual attention to students. Overcrowded classrooms and excess work load further make comprehensive assessment, recording and subsequent report on students more comprehensive, in the affective, cognitive and psychomotor domain. Obanya (1985) confirms the need for extensive reporting on pupils to parents and guardians.

Despite these short comings of continuous assessment, the benefits outweigh its deficiencies. Farrant (1980), perceived this when he asserted that it monitors teaching, discriminates between children of different abilities, motivates pupils and teachers, enhances predictive validity, guidance opportunities inter-alia. For Turton (1984) and Duncan and Dunn (1988), the informal approach and observation adopted in the course of continuous assessment can lead to improvement in relationship and cooperation between staff and students.

Continuous assessment is characterized by systematic, cumulative and comprehensive nature. Being systematic it introduces order into the system. Being comprehensive, different assessment instruments are used, giving assessment a broad base, greater validity and reliability.

By its cumulative nature, previous assessments and records are used for detailed and comprehensive reports from students. Lost of information at any point could be recreated from other sources. Since records are sent from school authorities to local government, state and federal education authorities. Obanya (1985), F.M.E.S.T. (1985), documents considered this as an insurance against theft, fire disaster and other hazards. Duncan and Dunn (1988), Ohuche (1988), Desforges (1989) all consider it as diagnostic. It identifies immediate and long range strengths and weaknesses in students for immediate and subsequent remedial actions, to improve learning and teaching conditions.

The process of continuous assessment hinges on the process of evaluation. Olorukooba (1987), Duncan and Dunn (op.cit) regard evaluation as the determination of the extent of success or failure to achieve one's objectives in a given task. It involves making judgment based on information available from the process of assessment, which includes formative and summative evaluation. Formative evaluation is carried out during class sessions to gather information, (a) by teachers about their pupils, (b) by teachers about their teaching, and (c) by pupils about their progress. According to Duncan and Cunn (op.cit), the central focus of evaluation should always be the curriculum and the pupils. This is contrasted to summative evaluation, which provides assessment records achieved in the past for the purpose of reporting to parents, students themselves and other parties, (James 1988). In addition, Desforges (op.cit) and Dean (1996) strongly recommend assessment for four reasons:

i) factual recall;
ii) understanding of the concept behind a pierce of work;
iii) ability to apply what has been learned to new situations;
iv) assessing the extent to which new skills have been acquired.

This way, the art teacher can identify students who need more help, those who work faster and at more challenging level. The teacher also gains knowledge of his areas of success or failure in teaching and the readiness of the students for the next stage of learning. The students also receive feedback, which tells their level of progress. Dean (op.cit) however observed that assessment may have counter points, where low achievers are demoralized or discouraged by their low performance scores.

The operators of continuous assessment techniques are the teachers. Their formative and summative assessment form the basis for the proper certification of students at all levels of education. W.A.E.C., the only recognized test agency nationally for the junior secondary schools, presently relies on the results of assessments supplied by the teachers. Conscientious assessments of performance therefore is a vital necessity to the future of the students and the nation as a whole.

1.2 Statement of the Problem

The essence of this investigation is to study the extent to which continuous assessment scores correlate with the students' performance in the light of the apparent variation and disparity in assessment strategies.

The New National Policy on Education Section 4:1 states that educational activity will be centred on the learner for maximum self development. Furthermore, Section 1:7 states that educational assessment and evaluation will be liberalized by basing them in whole and in part on continuous assessment of the progress of the individual.

Continuous assessment system by its nature is "centred on the learner for maximum, self development and fulfillment". The systematic, comprehensive and cumulative approach of continuous assessment is utilized to achieve this maximum self development and fulfillment of students, where the old examination system has failed because tests conducted to assess the performance can only sample portions of the syllabus during the examination, (Nwana, 1992). The old system further promotes memorization thereby encouraging examination malpractice. Consequently its reliability and validity as predictors of students' achievements is brought to question. Investigations also reveal that examination malpractice and leakage were endemic in the old terminal examination system as students work towards only passing their examinations, by "fair and means". Records of examination malpractice of the late 70s attest to this. Subject teachers had no say in the first examination assessment of the performance of their students. Ironically, assessors who are remote from the classrooms were

engaged, ostensibly to ensure fairness to all students. Because the system was not cumulative, the past performances of the students were not taken into consideration. The result was a one way certification by external examination. The weaknesses of the external examination system outweighed its benefits, hence the decision to scrap it in 1982. The new system (C.A.) combines both the class teachers assessments scores and the results of the external assessors to certificate the students, in the cognitive, affective and psychomotor domains of learning. It embraces the learning experiences of the students, which subsumes (a) the mode of learning that took place while in the school, (b) what they know and can talk about, (c) their application of the knowledge, (d) their cognitive ability and performance, their likes, dislikes, habits, attitudes and values all summarized the concern of the teacher operating the continuous assessment strategy. Such assessment is carried out at predetermined intervals of time, taking into account the total experiences and achievements of the students throughout their school career. It is characterized as systematic, comprehensive, cumulative and diagnostic, thereby providing objective data on the performance of the students to facilitate decision making. Consequently, the resultant weighted scores are a truer reflection of the student's capability and ability.

However, the system is not without problems. The complex evaluation technique using different instruments is found to be the consequences of variation in grades and scores of different classes and different schools. Murphey (1979), mounted a research on prediction exercise that revealed considerable disparity on this issue. Teachers were found to vary in their capacity to pick out the find attributes or behaviour in their students' performance. In addition, Hoste and Bloomfield (1975) found similar disparities while attempting to standardize assessments through the use of apparently specific scheme purporting to describe achievement. These findings give pertinence to the questions raised by Ojerinde (189), in Osuagwu (1997) on the reliability of raw scores sent to examination sections of state ministries of education by schools.

1.3 The Need for the Study

Doubts have been raised as regards the efficacy of continuous assessment as an alternative to the expunged terminal examination system. The reasons for such fears appear genuine. The need to undertake this study therefore is to confirm or dispel such fears.

1.4 Research Questions

i) To what extent will Junior Secondary School Students' performance in continuous assessment in art correlate with their performance in examination?

ii) To what extent will continuous assessment predict the future achievements of students in art activities?

iii) To what extent do continuous assessment scores in art correlate with the scores of examination?

iv) To what extent can we compare scores across schools?

1.5 Null Hypotheses

i) There is no significant difference between continuous assessment score of students and Junior Secondary Schools' examination scores.

ii) Gender difference does not affect students' performance in the continuous assessment and Junior Secondary Schools Examination.

iii) There is no significant difference in the performance of students in continuous assessment scores and examination scores in urban and rural schools in Plateau State.

1.6 Purpose of the Study

The study is designed to study the relationship (if any), between continuous assessment and final examination scores in predicting students' performance in art in Junior Secondary Schools Certificate Examination in Plateau State. The study will also investigate the validity and reliability of teacher-made tests and their predictive validity in Junior Secondary Schools Certificate Examination (J.S.C.E) and the comparability of scores across schools.

1.7 Significance of the Study

Relatively few studies appear to have been carried out on Junior Secondary School Examination performance and continuous assessment scores as predictors for certification and entry into Senior Secondary Schools. This is necessary as qualified teachers both in quality and quantity are lacking. In addition, studies have revealed discrepancy and variation in teachers' approach to continuous assessment issues. This seems to question the validity and reliability of continuous assessment scores sent to Examination Sections of the State Ministry of Education by schools. The suspicion of bias and/or subjective assessment by teachers of art also highlights the significance of this study. The degree of correlation between continuous assessment and final examination scores and their service as predictors of students' performance shall also be studied. Attempts shall also be made to establish whether correlation exists between the continuous assessment scores of schools and performance of students in examination as intended by the Federal Government in her policy statement, (1988, No. 22.1). Turton (1984), Ojerinde (1989) and James (1998) all seem to have misgiving regarding the validity and reliability of test instruments. The findings shall confirm for refute the bases for such doubts. Furthermore, the problem of equality standards across schools and between same levels of classes within the schools as observed by Turton (1984) and Ipaye in Osuagwu (1996), again raises questions on whether the success of a student in one school could be replicated in another school, given a similar test.

1.8 Scope and Delimitation of the Study

The selection of subjects for this study was from nine of the thirteen Area Inspectorate Zones of Plateau State. Twelve schools were sample in the nine Area Inspectorate Educational Zones. The schools were those that share similar characteristics of teaching art in all levels, and were offering art for a period of not less than five years. Furthermore, the schools should have been registering and sitting for JSCE and SSCE examinations in art for five years, and were presently offering art in both examinations. In addition, the teachers of art in selected schools were trained professionals in the area of art.

1.9 Organization of the Data

The research has been arranged into five chapters. Chapter 1 forms the background and justification of the study, statement of problem, terminology used and the scope and delimitation of the study.

Chapter 2 contains the survey of related literature in areas that include the concept of continuous assessment, rationale and characteristics of continuous assessment, concerns about continuous assessment, concise scope of continuous assessment, recording and reporting, concept of evaluation in art education, problem of evaluation in art, essential consideration in art evaluation, teacher as evaluator of art in class, grading of art works, proposed method of evaluation, class participation and critique as part of evaluation and conclusion.

Chapter 3 contains the research design or methodology and statistical background of the study.

Chapter 4 looks into the analysis and interpretation of data obtained in the course of the study, while chapter 5 subsumes the summary of findings, conclusion, recommendation and research report based on findings on the relationship of continuous assessment and examination.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

Studies of continuous assessment have generated varying reactions. It is commonly believed to be an effective substitute for the terminal examination system, which was practiced in Nigeria prior to 1982. This chapter examines some pertinent literature as they relate to the old and new assessment strategies as a means of enhancing learning among art students as well as in other subjects in general education. While some express acceptance of this innovative assessment technique, others express some fears. Reactions such as these are to be expected particularly when such revolutionary activities are introduced in any system.

Bumham-West (1999), regards assessment as a form of "performance driven accountability", which is increasingly common in educational systems around the world. This view is supported by Ebegulem (1982), and Ogunniyi (1984), when they stated that the system appears to be widely and because it assesses the over all performance of the students in the cognitive, affective and psychomotor domain of learning throughout the schooling career of students. This is a major departure from the old examination system, which concentrated assessment in the cognitive domain. Even the cognitive domain was inadequately assessed since it was based on the outcome of a single final examination. Turton (1984) and F.M.E.S.T. (1985) regard this inadequacy as the major disadvantage of the old assessment system when compared to assessment based on a regular and predetermined interval as required by the continuous assessment strategy. Ogunniyi (1984), and Obanya (1985) however uphold the continuous assessment is not problem-proof. They point to several inadequacies, which include lack of qualified personnel both in quality and quantity to operate the system; lack of infrastructures and equipment that are basic pre-requisite for successful operation. The absence of these can constitute clogs in assessment activities. However, the new assessment strategy is advantageous to the students because it takes into

account the total learning experiences and achievement of the learners throughout their schooling career in a manner that is systematic, cumulative, comprehensive and guidance-oriented (Ogunniyi, 1984).

In order to present a clearer picture of continuous assessment as an invaluable mode of assessment, this literature is presented as follows:

a) concept of continuous assessment,

b) rationale and characteristics of continuous assessment,

c) concerns about continuous assessment,

d) concise scope of continuous assessment, recording and reporting,

e) evaluation of art activities,

f) concept of evaluation in education,

g) problems of evaluation in art,

h) essential consideration in art evaluation,

i) teacher as evaluator of art in class,

j) grading of art works,

k) proposed method of art evaluation,

l) class participation and critique as part of evaluation,

m) conclusion.

2.2 Concept of Continuous Assessment

The term "assessment" and "evaluation" in education are often confused. Duncan and Dunn (1988) argue that "assessment" is an information gathering process about (a) students' learning performance, (b) teaching activities undertaken by the teacher and (c) students themselves through self-assessment of their learning. It also involves techniques of information acquisition. On the other hand, "evaluation" connotes making judgments and/or prediction based on

information acquired during the process of assessment concerning students' aptitudes and achievements. In supporting this view, observed that while revealing the effects of past learning, assessments may sometimes serve as predictors of future achievements. Similarly, Osuagwu (1997), found that assessment provide valid information on what was done or achieved and also enabled pupils and others to make rational choice about their activities. Furthermore, for Obanya (1985) and Burnham-West (1999), assessment is regarded as performance driven accountability, which lays emphasis on specific quantifiable outcomes, which is necessary for making judgments about individuals, groups and organizations. It could be said therefore that assessment enables the teacher to determine the extent to which his set goal and objectives for teaching and learning have been attained. It equally helps him to identify which aspects of the curriculum pose any or some difficulties so as to enable the teacher replan or repeat the lesson.

Again, an assessment carried out during an on-going activity, at intervals and "a little a while", is referred to as continuous assessment, (Farrant, 1980). This point of view is also supported by Ohuche, (1988) and James (1998). They both agree that routine assessment in a classroom considers students' actions and reactions, discussions, interviews, comments and responses to learning situations. Information drawn from such observations will enable the teacher to draw inferences about students' attitudes, personal qualities, abilities and commitments. These inferences are used for the benefit of the learner and the entire educational system, because it is capable of revealing problems that need to be addressed instantly or later through motivation, support, challenge, encouragement, reinforcement or reprimand. Essentially, it brings to light the strengths and weaknesses and special abilities of the students and problems concerning teaching, (Turton` 1984; FMEST 1985). This kind of informal assessment, which gives instant results in the course of conducting a class is known as formative evaluation. For the purpose of continuous assessment, scores obtained during formative assessment are used as part of the internal assessment results. At the extreme of formative assessment is the standardized test. Desforges

(1989) point to the fact that summative assessment is that which is "administered at the end of a course, programme or year". The old system of assessment, which was adopted in Nigerian secondary schools prior to the introduction of continuous assessment was the standardized assessment type. Being the only test carried out with terminal intentions, it was used to compare the achievement of one candidate against another, or one group against the other. Farrant (1980) stated that this approach does not reflect true education because it encourages regurgitation of facts and methods by the students. Olorukooba (1977, 1984, 1997), also opined that those who remember these facts and methods normally passed while those who do not failed.

The National Policy on Education (N.P.E.) (1977), prescribes that continuous assessment should be geared towards a global assessment of the students'learning. This is in line with Bloom's (1956) taxonomy of education, which stresses development of abilities in knowledge, attitudes and skills. Confirming this Ogunniyi (1984), Farrant (198), Turton (1984) and Petty (1993) stated that an assessment attempts to measure the breadth and depth of learning. This implies finding out in a systematic way the overall gains that the students have made in terms of the taxonomy after a given set of experiences. Continuous assessment can therefore be said to maximize opportunities for every learner to demonstrate skills acquired from time to time. It can also facilitate intimacy between students' progress and instructions given during and after being taught. For F.M.E.S.T. (1985) and Petty (1993), continuous assessment is regarded as a measure of both the breadth and depth of learning in intelligence, attitudes, character, belief, interest, muscular coordination and manipulative skills from the first day learning begins.

According to James (1998), questions, quizzes, short tests, discussions, and interviews all constitute the tools used by teachers to obtain data for drawing inferences about the learner. Similarly, Ojerinde and Falayajo (1984); Obanya (1985), add that projects, observations, assignments, questionnaires serve as tools for obtaining raw data for evaluating students'

performance. Such data when processed are sent to parents, guardians and concerned bodies or sometimes used for summative purposes. It therefore affords teachers the opportunity to have a complete picture of the students' performance from the beginning of the course to the end. As earlier stated, it could be seen that this a marked departure from the old assessment method in which assessment takes place only at the end of the course by which time valuable information would have been lost.

From the foregoing, we can therefore infer that assessment involves seeking data that reveal students' performance through analyzing and interpreting the data and finally making value judgment (evaluation) about the quality of learning through evaluating the evidence in the light of available standards. In the light of the foregoing, continuous assessment may be summarized to refer to:

> a mechanism whereby the final grading of a student in the cognitive, affective and psychomotor domains of behaviour systematically and comprehensively takes account of all his performance during a given period of schooling. Such an assessment involves the use of a great variety of modes of evaluation for the purpose of guiding and improving the learning performance of the student, (F.M.E.S.T., 1985).

2.3 Rationale and Characteristics of Continuous Assessment

The National Policy on Education (F.M.E., 1977: 23:1) stipulates that "…primary schools leaving certificates will be issued by the headmasters of individual schools and will be based on continuous assessment of pupils and not on the results of a single final examination." Also, it is stated in paragraph (2), that "Junior Secondary Schools Certificate, (J.S.C.E.) will also be based on the continuous assessment method." Furthermore, as indicated in paragraph (70), "…the existing practice in most of our institutions of learning of basing assessment of students' work on one final examination and on one type only is no longer tenable. Continuous assessment based on a variety of evaluation techniques should henceforth bne adopted and there should be some

means of ensuring some common national standards in the area of public examination as well as internal ones…".

Paragraph (23:2), reveals the policy statement that gave rise to this study. The idea of introducing continuous assessment was therefore aimed at solving once and for all the problem(s) associated with "basing assessment of students' work on one final examination and on one type…", which the policy makers think is outmoded and "no longer tenable". Before it was abolished, two types of examination were conducted throughout the country. The internal and external examinations. According to Ojerinde and Falayajo (1984) the internal examinations were usually conducted during the term or at the end of the year. It was the individual responsibility of each school to organize and conduct such assessments. The results of such semester or annual examinations were used to assess students' academic progress and decisions made based on their performance. Ipaye, in Usuagwa (1997), agrees that such examinations were used for promotions and other purposes at local school level in accordance with set standards of the institution. The second type of examination is that organized, conducted, coordinated and compiled simultaneously nationwide. According to Ojerinde and Falayajo (1984), the West African Examination Council (WAEC) is the body charged with this responsibility. Certification of students is based on this single examination. No consideration was given to their past performances in the internal assessment. Concerns have been raised with regards to the validity of the externally organized examination. Fafunwa (1974), is of the opinion that the system over emphasizes certification or paper qualification to the detriment of actual abilities to perform by students. Furthermore, this singular assessment cannot be considered as far reaching enough for such important certification exercise. Airasian (1991), upheld this opinion when he observed that "test constructed by agencies outside the classroom can only take a quick reading of students achievement on a small subset of the objectives students have been taught…. A large portion remains unmeasured". In further support of this, observed that three hours was inadequate to assess a course content that

has been taught over a period of one year. These assertions cast doubts on the reliability and validity of externally constructed examinations.

High premium is placed on paper qualification by employers, admission policies of tertiary institutions and other important decisions that affect the future of students. Desforges (1989), and Fafunwa (1972), perceive this as a contributory factor to examination leakage and other malpractice as desperate students resort to "fair or foul" means to pass. The Sogbetum Tribunal that investigated such malpractice, acknowledged this and consequently recommended that the overall grading of students' performance should be based on cumulative work done by them. Such grading should constitute part of the students' final examination scores.

External examinations as conducted by W.A.E.C., are known to impose undue influence on what is taught and methods used in teaching. Some teachers are tempted to "teach the test" or focus on passing the examination. Farrant (1980), Ojerinde (1984) and Obanya (1985), support the above assertion. Furthermore, they observe that external examination also fail to consider the fate of children who fall sick and cannot perform under unique examination conditions or those who suffer from examination nerves. Continuous assessment as conceived by the Federal Government is therefore expected to cater for the unique needs of all categories of students.

Ogunniyi (1984), Ojerinde and Falayojo (1984), report other weaknesses of the old assessment system. They observe these to include the system's insensitivity to local conditions such as school setting, socio-economic factors affecting the students and culture of the society. Less privileged students from these societies are placed at disadvantage over their counterparts in better equipped schools such as Federal Government colleges and other elitist institutions. This explains the findings of Warwick and Livingstone (1972), which reveal that "in some schools 86% of the pupils scored above national average, while others scored only 20%… Some of these

variations are attributable to the nature of their schooling, under-staffing, unstable staffing…". Consequently, comparability of scores at inter and intra school levels become difficult. It is envisaged that continuous assessment should minimize such anomalies.

Ojerinde and Falayajo (1984) and F.M.E.S.T. (1985) consider teaching an integral part of learning. Consequently any assessment should incorporate assessment made by the teacher who taught the students. Continuous assessment is expected to guarantee this meaningful involvement. In addition, it provides teachers opportunities to introduce innovative and inquiry-oriented teaching and learning activities during routine class work and assess same. This is beneficial to the students as well as the educational system because it serves as a source for the teacher's self assessment of his instructional techniques.

Literature reviewed so far also indicate that the old terminal examination system appear to encourage memorization while teachers are tempted to concentrate their teaching on portions frequently examined by W.A.E.C., G.C.E., N.T.I. or other external examination agencies, (Farrant: 1980, Ojerinde: 1984, Ogunniyi: 1984, Turton: 1984 and F.M.E.S.Y.: 1985). Olorukooba (1977), in a similar finding reports that,

> … the teaching and learning situation in Nigeria reduces the essence of teaching to a mere storage of facts and methods and the regurgitation of these facts and methods on demand… during examinations and other forms of assessment. This infers that only those who remember these facts and methods normally pass while those who forget, fail (p.22).

In-built into the new assessment technique is the cumulative record system that discourages over emphasis on examination. This implies that memorization is made less appealing. Further evidence from these writers confirm that by its cumulative nature, each assessment datum adds on to preceding ones, from one month to the next while assessments of the preceding years are complemented by those of succeeding years. This can discourage memorization. They however

point that assessment in the psychomotor and affective domain should be regarded as projections of the developmental stages of the student.

In addition to being cumulative, continuous assessment is comprehensive in nature. Ogunniyi (1984) and F.M.E.S.T. (1985) share the view that this enables the teacher to assess a wide variety of abilities that range from knowledge, manipulative skills, attitudes and values inter-alia. Onuche (1988), sees this as a major advantage to the students because such assessment is based on a wide variety of assessment techniques that include projects, assignments, observations, questionnaires, short tests among others. Information obtained through the process is consequently more valid and reliable than those from a single terminal examination.

The systematic approach to assessment through the new assessment strategy constitutes another advantage to the student. Studies conducted by Ojerinde (1984) and Turton (1984), support this assertion as both agree that being systematic, continuous assessment requires an operational plan that is carried out periodically. In addition it stipulates the frequency of assessment, prescribes the tools and types of measurement to be used thereby promoting structure and order.

According to Farrant (op. cit), supported by Ojerinde (op. cit), the diagnostic nature of continuous assessment facilitates the identification of strengths and weaknesses in the students' learning. This enables the teacher to encourage the students or apply remedial actions to guide their further development. Confirming this, Ohuche (1988), points that it facilitates decision on further development in areas of higher education, career choice and charting of future course.

Studies carried out by Petty (1993) and James (1998), reveal that external examinations such as those conducted by W.A.E.C. are measures of speed in areas of intelligence, aptitudes and abilities rather than what the students have learnt. They uphold that given the right learning

environment and quality instructions "and shown the error and omissions and given time to out them right, 90% of the students should pass with a mark of 90%. Petty (1993), describes this as "the 90-90 rule". Similar findings were reported in Scientific American of December (1992). Continuous assessment strategies seem to provide the learners "the error and omission" through providing regular feedback during the course of teaching while there is still time to make corrections. This point is further buttressed by Farrant (1980), F.M.E.S.T. (1985), who agree that continuous assessment as envisaged by the Federal Government is expected to motivate weak but capable students through emphasis on student centred activities that can measure the breadth and depth of learning.

The foregoing give some rationale for the introduction of continuous assessment in our schools. However, as indicated earlier, continuous assessment is not problem-proof. Concerns have been raised about the efficacy of the strategy as the best system for Nigeria.

2.4 Concerns About Continuous Assessment

Critics of the continuous assessment techniques have expressed fears concerning it use as an alternative to the old terminal assessment system. To Turton (1984) and Ogunniyi (1984), the system is good but expensive. Both observe that the haste to introduce the system is not marched with the provision of pre-requisite infrastructures on a large scale. Such facilities include computers, and clerical facilities, recording facilities, cabinets, data banks inter-alia. The dearth of trained personnel to record and process data from the school level through federal level, absence of qualified teachers in both quantity and quality to execute the system also constitute a major area of concern. This raises the necessity for pre-service and in-service training, adequate enlightenment and improved funding to the education sector as a solution to this problem.

Ojerinde and Falayajo (1984), James (1998) also identified another clog in the operation of the new assessment strategy. For them, there are variations in criteria of assessment "from school to

school because assessment in class appears to be a private affair of the teacher." This makes comparability of records between and within schools difficult. Moreover, the possibility of bias or subjective assessment and recording by teachers could threaten the validity and reliability of such results. Furthermore, they observed that motivation is widely used in the course of teaching and assessment as a source of encouraging students. However, the findings of Kluger and DeNisi (1996) reveal the possibility of negative or positive effect of motivation on learning performance. They reveal that where goals are clear, the commitment of the students to succeed is high. However, students abandon standards when eventual success seems elusive. This reiterates the need for competent teachers to operate the system, more so that continuous assessment is diagnostic in function and requires constant motivation.

Bloom's (1956) classification of educational objectives constitutes the pivot of continuous assessment techniques. However, the research Poole and Fairbrother (1972), seems to indicate confusion in the way teachers interpret the values in the affective and psychomotor domain. This is as a result of lack of universally agreed interpretation for such values. Variations of this nature can further threaten the validity of assessment conducted by teachers. Other studies carried out seem to buttress these findings. Yoloye and Eze, in Osuagwu (1997), similarly confirm variations in quality and marking standards of teacher-made tests. Two factors could be responsible for this situation: inadequate training in test construction or lack of standardized marking scheme for such assessment.

James (1998), expressed concern that:

> "…despite burgeoning literature on continuous assessment, …recording and reporting, teachers still lack confidence, expertise and experience in these areas, even when marking of students' work, providing feedback, creating internal tests and examinations, using standardized test, administering test and examinations… are a substantial portion of the job of everyday school teacher" (p.128).

From the above, the operational problems of continuous assessment appear to be logistical and could be overcome with time through adequate funding and training.

2.5 Concise Scope of Continuous Assessment Recording and Reporting

The aforesaid, according to James op cit) seems to indicate that the functions of continuous assessment can be summarized as follows:

i) for formative teacher assessment, students self assessment, target setting and incorporation into teaching and learning;

ii) for linking assessment processes and outcome into curriculum planning;

iii) for administering of statutory assessment arrangement and external examinations;

iv) for marking class work, homework, periodic tests and examinations;

v) for use of periodic formative and summative tests for diagnostic and monitoring purposes;

vi) for developing and assuring consistency in teachers' assessment and judgment through intra and inter school moderation;

vii) for the development of subject portfolio or other exemplar materials to illustrate the standards applied and attained in the assessment of students' work.

Recording and Reporting: this subsumes

i) recording students performance including the selection, retention and updating of evidences of significant achievement by students;

ii) recording personal experiences, attitudes, interests and achievement by students towards the creation of a record of achievements periodically and systematically;

iii) reporting to parents and guardians and involving them in consultation;

iv) arranging appropriate access to records to outside agencies with legitimate interests in students performance;

v) production or transfer of documents and records from teacher to teacher and from school to school;

vi) using individual performance data for comparative purposes to determine relative level of achievement of individuals, groups or the whole school and for publishing results;

vii) using students' outcome data for evaluative purposes such as judging the appropriateness of the curriculum provisions or effectiveness of teaching in ways that are valid, reliable and helpful;

viii) evaluating the effectiveness of all the above.

2.6 Concept of Evaluation in Art Education

The terms "assessment", "evaluation" and "grading" have often been confused and used interchangeably. Duncan and Dunn (1988) attempted to highlight the distinction between these terms. According to them, "assessment" ijnvolves seeking and obtaining information concerning the progress or otherwise of students during teaching and confirmation of the effectiveness of the teachers' teaching styles. For James (1997), the process of collecting data includes the use of tests, quizzes, questions, standardized test, observations, among others. Evaluation on the other hand requires data obtained through assessment to make judgments or draw inferences. Tuckman (1975) and Olorukooba (1977), report that it determines the extent of success or failure to achieve one's objectives in a given task, "with the ultimate intention to improve quality, raise standards of performance and efficiency". "Things that are learned very well, not very well and not well at all" are identified for diagnostic and remedial action by the teacher. To facilitate this, both teaching and assessment take place concurrently. Grading on the other hand involves the use of symbols to represent the quality of the studetns' work or effort based on some criteria or criterion, (Eisner 1989).

2.7 Problems of Evaluation

Evaluation in art is said to have taken place when students' learning outcomes are comparable with teachers' set instructional objectives. While learning is assumed to have taken place when students learning outcomes are in line with teacher's stated objectives, (Tuckman 1975).

Taunahill, in Gaitskell and Al-Hurwitz (1975), report that the problem with evaluation in art is that it is not far reaching enough. Fauler, in Gaitskell and Al-Hurwitz (1975) and Cronbach (1960), are of the opinion that not all aspects of art can be easily measured. While technical skills and competence could be assessed and evaluated, measurement of "self expression" appears to be an elusive and controversial issue. For Eisner (1987) "aesthetic experience" is also difficult to measure, because "neither the standardized tests nor formal teacher-made tests has produced satisfactory indication of students real abilities in creativity and self expression". Furthermore, the National Curriculum for Senior Secondary Schools (1985) attributes the problem of evaluating art to the "transcendental;" nature of artistic experiences, while Crombach (!960), opines that "testing instruments in art abilities have improved little in sophistication and reliability when compared to other subjects of the curriculum in general.

2.8 Essential Consideration in Evaluating Art

Every teacher is faced with the difficulty of the worth of an art (Eisner 1989). Consequently, evaluation becomes imperative. Lowenfeld and Brittain (1974), Olorukooba (1974: 1990), in Osuagwu (1997) are of the view that evaluation should involve comparison of students learning outcome against specified objectives of the teacher. When these outcomes tally with teacher's desired outcomes. Learning is said to have taken place. Clarity of objectives intended by the teacher is therefore a sine-qua-non for successful evaluation of any art programme. Again, studies reviewed by the researcher seem to suggest that art should be assessed as a "process" and a "product". Read (1956), Ayangaor (198) and Akolo (1989) stress that the artistic process of

production is more important than the product. They are of the opinion that the process reflects the attitude and personality of the students. It reveals their capacity for problem solving, cooperative activities, their enthusiasm, enjoyment of the artistic production inter-alia. Siu (1999) share this view. For them the "process" should be a "journey" that leaves marks on the student, such as, how they think, feel and reason, what they have learned, what they know and what they are. Furthermore, the "process" reveals the effects of the programme "while something can still be done about it". In other words it enables teachers to encourage, guide, stimulate, inspire and motivate students thereby maximizing opportunities for development (Wilson 1978: Eisner 1989). The art product is what Siu (1999) described as "the destination" or end product of the process of production. Being tangible it can be stored for later assessment or sent to other assessors. Product reflects level of technical proficiency which most assessors evaluate and award grades for, thereby overlooking the need to evaluate the ":process".

2.9 Teacher as Evaluator of Art in Class

Teachers have a role to play in the art production of students. Kaufman (1966) and Wachowiak (1985) believe that such involvement include the use of incentives that can led to the production of quality art works when the students receive adequate motivation. Quality art products are therefore a reflection of the teachers' performance. Ayangaor (1985), supports this view. He observes several types of motivation but asserts that for effective learning, self motivation in which the students show enthusiasm and pleasure is recommended. To promote this, he opined that teachers should capitalize on students interest at independent work and sustain same. In addition he suggests the use of praises, encouraging remarks, drawings, audio and visual aids, in the course of teaching to improve the status of the lesson. Other motivational techniques identified and recommended by Kaufman (1966) and supported by Lowenfeld and Brittain (1975), include discussions, quizzes, question and answer sessions, and demonstrations among others. For Eisner (1989) teachers should encourage the students in the art of self-assessment.

Other studies by Gaitskell and Al-Hurwitz (1975) and James (1998), suggest that self-assessment exposes the students to the criteria of evaluating art works personally, which is a good development since this could be applied to future art works thereby reducing cases of subjective or bias assessment from teachers.

In this course of evaluating students' artistic output, Ayangaor (1980) perceives that it is the teacher's function as evaluators to select desired artistic traits and apportion marks to each. This constitutes a marking scheme to guide the teacher. He supports the suggestion by Eisner (1989) that teachers should base assessment on "the formal aspects of the work that is being or has been produced". Table 2.1 is an example of a selection of artistic traits for a drawing activity, as recommended by Ayangaor (1980):

Table 2.1: Artistic Traits for Drawing

Drawing	Line	25%
	Tone	30%
	Proportion	20%
	Expression	25%
	Total	100%

Such a scheme as this guides the teacher against award of marks based on "halo effect". A continuous assessment mark sheet is recommended by Ayangaor to reflect performance of students on a uniform art activity over a period. Table 2.2 below is a suggested continuous assessment mark sheet.

Drawing	%	1st Week	2nd Week	3rd Week	4th Week
Line	25	12	10	E.T.,C.	-
Tone	25	10	18	E.T.C.	-
Proportion	50	31	35	E.T.C.	-

Total	100	53	63	E.T.C.	-

This approach gives a cumulative picture of the individual's performance in a drawing course as advocated by continuous assessment strategy, in line with Federal government policy, but does not however, reflect the student's standing in relation to the class.

2.10 Grading of Artworks

The issue of grading artworks is a contentious one among art educators. From available literature, those against the system are of the view that it is unfair to reduce students' creative performance to mere symbols, (A,B,C,D,E,). Moreover, symbols tell little about the actual performance of students during the period of learning (Lowenfeld and Brittain 1970: Gronlund 31976: Ayangaor 1980: Eisner 1989). On the other hand, those in support, perceive that grades could be used as feedback to motivate students to greater production in future. It can further be used to inform parents and guardians on the performance of their wards. Critics want it abolished because information supplied about students through grading is scanty, misinforming and sometimes damaging to the morale of the students. In addition grades lack universal interpretation and could be subjectively awarded. Consequently, it should be expunged from our educational system. Eisner (1989), in addition observed that the system does not reflect how much a student has learned but only ranks him in relation to other students in the class. As an alternative, Eisner recommends that students should be rated in the following ways:

a) Student with self: by this, previous performances of the individual are compared with proceeding ones. Ayangaor (1980) supports this opinion but views it as a longitudinal measurement that gives the teacher, parents and guardians a picture of the students' worth.

b) Student versus Student: (norm referenced). This system is used for comparison of a students standing against other colleagues in terms of group average performance in areas where technical proficiency is required.

c) Students versus Course Objectives: the teacher is expected to match desired behavioral objectives with those exhibited by the student. This system appears workable in other courses. With art however, pre-specifying objectives do not appear to work because valuable qualities in students performance do emerge during work or when the end products are displayed for criticism (post facto evaluation). As an alternative to the grading system, Gaitskell and Al-Hurwitz (1974) also recommended that competitiveness should be discouraged by teachers in the course of reporting students' progress. A progress report or a narrative is preferred based on the use of the following marks: "S" for satisfactory and "U" for unsatisfactory.

2.11 Proposed Method of Evaluation

The National Curriculum for Senior Secondary Schools (1987) states that the evaluation of art activities should be a continuous exercise from the beginning of the lesson to the end.

The National Educational Research Council (Draft Cultural and Creative Arts Curriculum for Primary Schools) (1985), recommends that evaluation classes should be conducted using "discussions, displays and actual performance". Conducted in this manner, evaluation will provide lively creative class sessions that will increase awareness, understanding and appreciation of concepts and objectives. Simultaneously, it exposes students to assessment criteria, which they could use in future. This is a departure from assessment in other subjects that are the exclusive "affair of the teacher".

Olorukooba et at (1990) in Osuagwu (1997) proposed a method of evaluation of art that includes Feldman's (1970) approach. This is in line with Eisner (1989) suggested method. The focus of evaluation is on the degree/level of mastery of a defined content/skill in art (theory/practice) attained by students and the allocation of appropriate weighting of each criterion as contained in the expected behavioural outcome. The scheme is then used as a guide (or marking scheme) by a panel of three judges who should be experienced art teachers. Osuagwu further indicates that assigned weighting should be commensurate to the ability and degree of mastery, defined concepts, specific learning skills and application of same by each learner. Exemplified below is a typical marking scheme for drawing as recommended by Olorukooba et al (1990)):

Use of Medium	10marks
Originality	15marks
Conformity to theme	25marks
Balance/Harmony	15marks
Draughtsmanship	20marks
Conceptualization and	

Preliminary sketches	5marks
Total	**100%**

Other aspects of art could adapt the marking scheme to suit the different aspects of art. To ensure objectivity in scoring, a panel of not less than three qualified art teachers should be involved in the marking exercise.

2.12 Critique and Class Participation as Part of Evaluation

Besides class discussions, observations, quizzes, questions and answer periods that take place at the beginning or during class session, the display of art products at the end of the class period is necessary. Wachowiak (1985) supports the need to display students' output or performance and their full participation in the critique sessions, which is "very productive". Eisner (1989) considers as "lively" the discussions by students and teachers about visual forms, colours, themes and materials, which is beneficial to students. It enables students to grow in words and aesthetic sensitivity. Ayangaor (1980) shares this view. For him critique sessions encourage aesthetic experiences while giving teachers opportunity to reemphasize their aims and objectives of the lesson. An advantage of such sessions is that they provide opportunities for every student to freely make verbal contributions about each work on display. Ayangaor (1980) observes that the discussions centre on areas of strength and weaknesses of the work such as mode of production, forms, materials and the themes. He further observes that the teachers' role in the class is to moderate these sessions. They use mild suggestions and criticism to draw attention to areas of weaknesses while commending achievements. Outright corrections of students are discouraged in favour of suggestive guidance while the students' carry out the correction themselves. The NERC (1985) views the system of criticizing art works as a "high caliber teaching strategy that is highly beneficial to students". During these sessions, malicious criticism or group conspiracy to see nothing wring with their friends' works should be discouraged, (Ayabgaor 1980). The display of students works should be conspicuous and changed periodically. The display board

should not be a monopoly of a few students while at the same time, hard working students should be motivated by having works occasionally displayed.

2.13 Summary

The old terminal examination system was expunged from our educational system because of its inadequacy as an assessment strategy. Memorization, examination malpractice and leakage, psychological tension, undue emphasis on certification, doubts about the validity and reliability of results all characterized the old assessment strategy. On the other hand, the continuous assessment strategy adopted by the government is expected to be used for the continuous assessment of students in all domains of learning in a manner that is comprehensive and accepted. It is envisaged to be systematic, cumulative and guidance oriented. This by implication means that continuous assessment is comparatively more valid and reliable as an assessment technique. It should therefore curb the problem associated with the old system and adequately assess students so as to achieve success.

With the old examination system it was easier to compare standards across schools. Whereas with continuous assessment, the situation is not the same. This difference is found to stem from teacher-made tests because assessment in class is the "private affair of the class teacher".

Critics of the continuous assessment strategy hold that this casts doubts on the predictive validity of such results. Furthermore, the absence of a universally accepted interpretation of the values of the affective and psychomotor domain has compounded the issue of validity and reliability.

Suggestions towards improvement have been proffered by both critics and supporters of the system. Some have observed the need for a set of formative tests, which teachers in the same locality could use and also a standard format for keeping and reporting about students' progress.

Others perceive the necessity for a standardized instrument to be used in the affective and psychomotor domain to curb the differences in interpretation. Such instrument should undergo continuous modification in the light of experiences. It therefore involves periodic assessment of the technique itself. In addition, there is the need for a more coordinated approach to test organization across schools. By this approach, specific segments of the curriculum content should be prescribed specifically for testing and results recorded in every school before teachers and learners proceed to the nest stage of the curriculum. This way assessment in class will not be entirely a "private affair of the teacher".

Adequate supervision of the strategy in practice is also necessary. Presently, there is a national committee on continuous assessment. Its responsibility include enlightenment of teachers on continuous assessment, through organizing workshops and conferences at various levels. An expanded role for this committee is necessary to include special committees for all schools. They should be charged with monitoring the progress of continuous assessment, collecting expert knowledge, books, and other literature on the subject, and refining the method from time to time and liaising inter and intra school supervision, cooperation and sharing of knowledge in the area of continuous assessment.

Literature reviewed so far seems to suggest the existence of operational problem in the continuous assessment system. This study therefore seeks to find out (a) the extent of correlation between the final examination and continuous assessment results, (b) to investigate the validity of test constructed by teachers and their predictive status in the Junior Secondary School examination and (c) to examine the comparability or otherwise of scores across schools.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

According to Osuala (1991), Akuezuilo (1993), and Afolabi (1993), research design or methodology provides guidelines that help the researcher to solve research problems. It is concerned with the general structure of the design population under study, sampling techniques, data collection, measurement, analysis and determination of validity of instruments used. This chapter is concerned with the subjects under study, the schools sampled, the tests or instruments administered to the subjects and the validity and reliability of these instruments.

3.2 Research Design

As a case study, this research examined the relationship between examination and continuous assessment scores in art education as used for certification in post primary schools in Plateau State. The preference for case study method is informed by its ability to permit the study of large number of variables including their interrelationship simultaneously.

3.3 The Population and Sample

The sample for this study was drawn from thirteen (13) secondary schools located in nine (9) out of the thirteen Area Inspectorate of Education Zones of Plateau State. The criteria for selection was based on number of years the institutions have been offering art in their school curriculum. For the purpose of this study, a period of not less than five (5) years was considered adequate. Furthermore, the selected schools:

i) have qualified art teachers, teaching the junior and senior classes in these institutions. The services of these teachers were engaged in the course of test administration and marking;

ii) are either coeducational or non coeducational but with equal number of both male and female students involved in the study.

All the schools were categorized according to their location within Plateau State as urban, semi-urban and rural. The schools also fall within nine of the thirteen zones of the area inspectorates of education. A total of 507 students were used for the study (258 males and 249 females). Further breakdown indicates that 42 students were drawn from each school, with 14 students each selected randomly from JSS II, JSS III and SSI.

3.4 The Research Procedure

All the subjects to be tested were supplied with uniform drawing materials, (light drawing sheets, 2b pencils, erases, sharpeners). They were instructed to pay special attention to autistics traits (proportion, balance, theme, tone, details, drapery, originality, finish and flexibility). They were also informed that the test was for a duration of one hour. The atmosphere in which they were examined was a relaxed one. The still-life objects arranged for them to draw were clearly displayed for all to see and draw. All the examination items were commensurate with the ability and level of the class being tested as perceived by the experts who designed them. The subject teachers were also engaged in the administration and later the marking of the test.

3.5 Population Distribution According to Schools

Relevant background information concerning junior secondary schools teaching art in Plateau were obtained from the Educational Resource Center (E.R.C.) Jos, which is under the State Ministry of Education. The West African Examination Council (W.A.E.C.) in Plateau State also supplied information regarding schools that offer art at the senior secondary school (SSCE) level. A verification visit was made to each school proposed for sampling to verify the information collected from these bodies.

For a broad spread, nine of the thirteen Area Inspectorate of Education (A.I.E.) were chosen and categorized as urban, semi-urban and rural institutions. From these categories, five schools were designated as urban, six as semi-urban and two as rural. Table 3.1, 3.2 and 3.3 show a summary of the institutions according to location (urban, semi-urban or rural) and types of schools (coeducational or none educational) and proposed subjects of study according to gender.

Table 3.1 Metropolitan (Urban) Schools

Area Inspectorate Zone	**Types of Schools**	**Names of School**	**M**	**F**
Jos North	None co-ed	St. Murumba College, Jos	42	-
Jos North	None co-ed	St. Louis College, Jos	-	33
Jos North	Co-ed	Command Secondary School, Jos	14	14
Jos North	Co-ed	Federal Government College, Jos	14	14
Jos South	Co-ed	Zang Commercial Secondary School, Jos	21	21
	Urban Schools	**Total**	**91**	**82**

Overall total males and females **173**

Table 3.2: Semi Urban Schools

Area Inspectorate Zone	Types of Schools	Names of School	M	F
Mangu Zone	None co-ed	B.S.S. Gindiri	41	-
Langtang Zone	None co-ed	Federal Government. Girls College, Langtang	-	42
Pankshin Zone	Co-ed	Government Secondary School, Bet	21	21
Bassa Zone	Co-ed	Government Secondary School, Miango	21	21
Pankshin Zone	None co-ed	Government College, Pankshin	42	-
Bokkos Zone	None co-ed	Government College, Bokkos	-	42
	Semi-Urban	**Total**	**125**	**125**

Overall Total 250

Table 3.3: Rural Schools

Area Inspectorate Zone	Types of Schools	Names of School	M	F
Kanke Zone	Co-ed	Government College, Amper	21	21
Kanke Zone	Co-ed	Government Secondary School, Ampang	21	21
		Total	**42**	**42**

Overall Total 84

Table 3.4: Summary and Percentage of Population Sampled According to Location and Sex

Location	Males	%	Females	%	Total
Urban	91	17.9	82	16.7	34.1
Semi-Urban	125	24.65	125	24.65	49.3
Rural	42	8.3	42	8.3	16.6

From **Table 3.4** (Summary and percentage of population sampled according to location and sex) it can be observed that of the 507 students sampled, 34.1% of the subjects were from urban schools whereas the semi-urban and rural areas constitute 49.3% and 16.6% respectively. Of these figures, 258 or 50.85% were males and 249 (49.15%) were females. For the purpose of statistical analysis, the means and standard deviation were determined. Pearson Product Moment

Correlation (P.P.M.R.), T. test, Coefficient of Correlation, Analysis of Variance and Statistical Package for the Social Sciences (S.P.S.S.) were used in the course of data analysis.

3.6 Description of the Instruments

Standardized practical tests were administered to the subjects. The questions were obtained from past question papers designed for and previously administered to JSS I, II and III. The same tests were re-administered to JSS II, III and SS I respectively. The mean score of the students in continuous assessment for a period of three years (1996, 1997 and 1998) were then compared with examination scores to determine their correlation or otherwise. A panel of three independent jurors were engaged to score the students' examination, to ensure fairness. The mean of the examination results and those of continuous assessment were correlated to study their predictive capabilities

3.7 Validity and Reliability of the Instruments

This standardized test that were administered to the subjects were designed by test experts from the Plateau State Ministry of Education (Examination Section). These were designed commensurate with the ability and level of the class being examined. They were therefore considered liable and valid for this study. To further enhance objectivity, reliability and validity, the Zaria Test of Artists Ability (ZATAA) was used in scoring the students.

3.8 Zaria Test of Artistic Ability (ZATAA)

The Zaria Test of Artistic Ability, ZATAA, (Olorukooba 1984) was administered in the course of assessing students' examinations. ZATAA is a battery of tests of artistic abilities, which when used with other cognitive tests can predict aesthetic sensitivity, good taste and students' success in art courses in Nigerian post primary schools. It is a broad based assessment technique consisting of five sub-scales. These include:

a) construction problems;

b) creative design;

c) art history and art appreciation.

It could be used in secondary schools, teachers' colleges, colleges of education and universities for empirical findings of artistic abilities. It is concerned with validation of artistic characteristics and their measures, thereby giving a better estimate of what it measures unlike earlier tests like Graves' Design Judgment Test (1948), Knuaber's (1935) ability test, Meier (1940) art judgment test among others.

3.9 Administration of ZATAA

This test can be administered to a group as well as individuals. Scoring is usually through a committee or group decision of jurors who are experts in art and who have been teaching art for a period of not less than five years. For the purpose of this study, three jurors were selected, one of which is the teacher teaching the class under study and two other jurors. Guided by ZATAA format, the marking scheme, the mean of scores supplied by the jurors were found and correlated with the C.A. results of each student.

3.10 Pilot Test

A pilot test was conducted to test the validity and reliability of the method and the instruments developed. A total of 120 students were used for this purpose, with 60 students, each

representing equal number of males and females drawn from the urban schools. Thirty (30) were drawn from the semi-urban and another 30 from the rural schools. The test conditions were the same, and materials were supplied to the students. All those who took part in the pilot test were excluded from the main research. The reliability coefficient obtained was 0.577. This implies that the method used is reliable and consistent internally and therefore valid for this study.

3.11 Summary

Various statistical techniques were applied to compare the continuous assessment scores and examinations scores of the students tested. A population of 507 subjects were randomly selected, (258 males and 249 females) from nine out of thirteen Area Inspectorate of Education zones for the test. The test items were standardized practicals (still-life). To ensure fairness and objectivity in assessment of the tests, a panel of three jurors were engaged in scoring the students, as recommended in ZATAA. Furthermore, a pilot test was conducted to test the validity and reliability of the methods and instruments used. A reliability coefficient of 0.577 was obtained. This implies that the method and instruments used were reliable and consistent internally and therefore valid for this study.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

4.1 Introduction

A total of 546 subjects comprising 273 males and 273 females were intended for this study, however, only 507 were studied. These comprised 258 males and 347 females totaling 507 subjects). Of this total, 91 males and 82 females were selected from the urban school, while from the semi-urban schools an equal number of 125 males and 125 females were sampled and studied. In the rural areas also, an equal number of 42 males and 42 females each were studied.

The statistical techniques used are the Pearson Product Moment Correlation coefficient (p.p.m.r.) which permits the measurement of two or more variables on a large scale. Analysis of variance (Anova) was used for the purpose of comparing the level of relationship and information obtained along with the mean, standard deviation, coefficient of correlation and t-test for comparison.

4.2 Comparison of Performance Using the Mean, Standard Deviation and Coefficient of Variance C.A. and Examinations According to Schools

For the purpose of comparison, the mean and standard deviation of the performance of all the students in C.A. and exams are computed. With the use of Pearson Product Moment Correlation (p.p.m.r.), t-test, the significance of difference in the performance of all the students was also calculated to observe what differences may exist in the performance of the students using their C.A. and examination scores as in the **Table 4.1** showing Mean, Standard Deviation and Coefficient of Variance of (C.A.). The PPMR was chosen because the data satisfies the condition for its usage because the:

i) scores are obtained from independent pairs,

ii) two variables are continuous,

iii) relationship between the two variables is rectilinear and the scores are normally distributed. This can be observed from the mean and the standard deviations.

Table 4.1: Showing Mean, Standard Deviation and Coefficient of Variance of C.A.

Schools Total = 13	**Mean**	**Standard Deviation**	**Coefficient of Variance**
1. S.M.C Jos	36.2857	8,1459	22.45
2. S.L.C. Jos	37.0303	6,1006	16.47
3. Z.C.S.S. Bukuru	34.5714	9,6705	27.97
4. C.S.S. Jos	27.8571	6.8243	24.50
5. F.G.C. Jos	32.8214	6.4639	19.69
6. B.S.S. Gindiri	30.7381	8.5656	27.87
7. FGGC Langtang	32.4048	10.7934	33.31
8. GSS Bet	42.4286	14.0264	33.06
9. GSS Maingo	29.3500	8.8826	30.26
10.GC Pankshin	27.7619	11.2289	40.45
11.GC Bokkos	31.6667	9.4808	29.94
12.GC Amper	37.0952	9.9922	26.94
13.GSS Ampang	31.8571	7.8230	24.57

Table 4.2: Showing Mean, Standard Deviation and Coefficient of Variance of Examination Scores

Schools Total = 13	Mean	Standard Deviation	Coefficient of Variance
1. S.M.C Jos	36.8667	6.7027	18.18
2. S.L.C. Jos	31.1818	7.6496	24.53
3. Z.C.S.S. Bukuru	26.9571	10.0059	37.12
4. C.S.S. Jos	20.5714	8.0531	39.15
5. F.G.C. Jos	29.1500	4.6994	16.12
6. B.S.S. Gindiri	26.8857	8.6595	32.21
7. FGGC Langtang	27.0476	8.4740	31.32
8. GSS Bet	20.4429	7.3465	35.93
9. GSS Maingo	24.2250	10.4440	43.11
10.GC Pankshin	26.6381	11.1982	42.04
11.GC Bokkos	24.6476	9.6723	39.24
12.GC Amper	13.1000	6.5976	50.36
13.GSS Ampang	19.4262	17.2969	89.04

4.3 Presentation of Results by C.A. Scores and Examination Scores

Hypothesis 1 states that there is no significant relationship between C.A. scores and examination scores. The correlation procedure was used in the test of this hypothesis. The result of the relationship test is as shown in **Table 4.2** (Correlation Between C.A. and Examination Score).

Table 4.3: Correlation Between C.A. and Examinations Score

Variable	Mean	Standard Deviation	r	D.F.	r-critical	P
C.A.	33.327	10.213	0.394	505	0.088	0.000
Exam	25.078	11.126				P<0.05

Table 4.3 (Correlation between C.A. and Examinations Scores) shows that the observed correlation coefficient between the two variables, (C.A. and Examinations) of 0.394 is higher than the table value of 0.088 at 505 degrees of freedom. This implies that there is significant relationship between C.A. scores and examination scores in the affected schools, ($P<0.05$). The null hypothesis, which states that there is no significant relationship between C.A. scores and examination scores is therefore rejected. Generally the C.A. scores can be a good pointer to students' performance in art examination.

4.4 Presentation of Results by Gender

Hypothesis 2 states that gender differences do not affect the performance of students in the junior secondary schools examination. The hypothesis was tested using t-test procedure. The result of the test is shown in table 4.4.

Table 4.4: Showing Mean and Standard Deviation According to Gender

Number of Class		Mean	Standard Deviation	Standard Error	t-critical	Dr	2 tail Prob.
Males	258	60.9593	18.845	1.173	3.32	505	.001
Females	249	55.7598	16.323	1.034			P<0.05

In table 4.4 the observed t-value for comparison of the two cases (male and female) is 3.32 at 505 degrees of freedom. The table value at the same degree of freedom is 1.96. It could also be observed from the table that the probability level of significance is less than the accepted level of 0.05 (P<0.05). This signifies that there is significant difference in the mean score of the two groups. Looking at the mean score on the table, the males had a higher score in the overall performance than the females. The null hypothesis is therefore rejected.

4.5 Presentation of Results by Location

Hypothesis 3: States that there is no significant deference's in performance between students from urban, semi-urban and those of rural schools in C.A. scores. The statistical procedure adopted for the test of this hypothesis is the one way analysis of variance. The use of this method was informed by the involvement of more than two independent variables in the test. In table 4.5 below, the ANOVA table is presented.

Table 4.5: Analysis of Variance on Performance by Location

Scores of Variation	Dr	S.S.	M.S.	F	P
Location	2	9814.468	4907.234	16.384	0.000
Error	504	150954.513	299.513		
Total	506	160769.213			

The table indicates that significant difference exists between the locations in terms of performance in art subjects ($P<0.05$). The null hypothesis is therefore rejected.

To determine the location that is significantly different from the others, a post hoc test was carried on the means of the three locations, using the Scheffe procedure as seen below:

Table 4.6: Result of Scheffe Procedure

Locations	**Means**
Rural	50.7393
Semi-urban	57.4032*
Urban	63.5769*

* Denotes pairs of groups significantly different at the 0.05 level. The post hoc test shows that the scores of students in the urban schools were significantly different from those in semi-urban and rural areas. Also the schools situated in the semi-urban was significantly different from those of the rural areas in their performance in art. Therefore, a comparison of scores from the various locations can be difficult. The hypothesis is therefore rejected.

4.6 Presentation of Results by Research Questions

4.6.1 Question 1: Is the Relationship Between C.A. Scores and Examination Scores Significant?

In **hypothesis 1**, it was discovered that there is significant relationship between C.A. scores and examination scores. The observed mean of continuous assessment is 33.327 and the standard deviation is 10.213 while the examination mean is 25.078 with a standard deviation of 11.126. The probability level of significance was found to be 0.000 implying that the relationship was significant at 0.05 and 0.01. The implication is that the significance of the relationship between C.A. scores and examination scores in the affected schools is very high.

4.6.2 Question 2: Will Students who Score Highly or Poorly in C.A. Scores also Score Highly or Poorly in Examinations?

In answer to question 2, a breakdown of the schools by location was carried out. These are, urban, semi-urban and rural schools. In the urban schools, students who performed very well in the C.A. also performed creditably well in the examination with a mean score of 63.5769 and standard deviation of 16.1499. This pattern was also observed in the semi-urban institutions, which had a mean of 57.4032 with standard deviation of 18.2479. However, in the rural schools, this pattern was different. The C.A. scores in the rural location (with a mean of 50.7393) was not found to be related to the examination scores though this none significance was clouded by the high significance between C.A. scores and examinations in the semi-urban and urban schools.

4.6.3 Questions: Are C.A. Scores Good Predictors of Students' Final Scores in Art Examinations?

As observed in the urban and semi-urban schools' performance (**4.62** above), it could be inferred that C.A. scores by students are comparable and therefore are likely to be an indication of what they could score in examinations but as far as rural schools that are affected by this study are concerned, C.A. scores could not be compared nor used as yard stick for predicting examination scores by the students.

4.6.4 **Question 4:** Is there Significant Difference between the Mean Scores of Males and Females in Art Performance?

From **Table 4.4** t-test for performance by sex, the observed t-value for comparison is 3.32 at 505 degrees of freedom, while the table value at same degree of freedom is 1.96, which is less. Further observation indicates that the probability level of significance is less than the accepted level of 0.05 ($P<0.05$). This indicates a significant difference in the mean scores of the males and females. The mean of the males is 60.9593 with standard deviation of 18.845 while the female had a mean of 55.7598 and standard deviation of 16.323 in the art subject.

4.4.5 **Question 5:** Is there Significant Difference in the Art C.A. Scores of Students in Urban, Semi-Urban and those of Rural Schools?

Results of the analysis of variance indicates that the urban, semi-urban and rural schools differ significantly in their art performance. An observation of the post hoc test using Scheffe procedure to confirm the difference indicates that the rural schools had the lowest mean of 50.7375 while the semi urban and urban schools were significantly different at 0.05 level with their means at 57.7379 means 63.5769 respectively. This signifies that the urban schools performed better than the semi-urban and rural schools while the semi-urban schools performed better than the rural schools in art C.A. scores.

4.4.6 Question 6: Is there Significant Difference in the Scores Between Schools and Can C.A. Scores be Compared from one School to the Other?

Significant difference exists in terms of performance by location (at $P<0.05$ level of significance). This finding, which was further confirmed by the post hoc test using Scheffe procedure ranked the schools according to performance. The lowest mean rank of 50.7365 was observed in the rural areas whereas the semi-urban and urban have 57.4032 and 63.5769 as their means respectively. This indicates differences between schools in these locations. A comparison of scores between rural and semi-urban and urban schools is therefore difficult. However, scores of the semi-urban and urban schools can be comparable as the results of the post hoc test using Scheffe procedure indicates (see Table 4.6).

4.7 Comparison of Performance Using the Mean, Standard Deviation and Coefficient of Correlation According to Schools

Table 4.3 shows the correlation coefficient of C.A. scores and examinations scores in art subjects. As indicated in the table below, C.A. scores and examination scores were tested separately for each school. Column 4 shows the coefficient of correlation between C.A. and examinations for the selected schools accordingly.

Table 4.7: Coefficient of Correlation Between C.A. and Examinations According to Schools

Schools(13)	**Mean (C.A)**	**Mean (Exam)**	**Coeff. of Corr. (r)**	**Level of Corr.**	**Positive or Neg.**
S.M.C., Jos	36.2857	36.8667	.7759	v. high	+
S.L.C., Jos	37.0303	31.1818	.4456	v. high	+
Z.C.S.S., Bukuru	34.5714	26.9571	.8112	v. high	+
C.C., Jos	27.8571	20.5714	.2845	low, not significant	+
F.G.C., Jos	32.8214	29.1500	.7583	v. high	+
B.S.S., Gindiri	30.7381	26.8857	.7443	v. high	+
F.G.G.C., Langtang	32.4048	27.0476	.8010	v. high	+
G.S.S., Bet	42.4286	20.4429	.5100	v. high	+
G.S.S. Miango	29.3500	24.2250	.4788	v. high	+
G.C., Pankshin	27.7619	26.6381	.7112	v. high	+
G.C., Bokkos	31.6667	24.6476	.7143	v. high	+
G.C., Amper	37.0952	13.1000	.1239	low, not significant	+
G.S.S., Ampang East	31.8571	19.4262	.1651	low, not significant	+
Total Schools Coor.	**33.2206**	**25.1646**	**0.5649**		
Coeff. of Variability	**13.1109**				

From table 4.7, it could be observed that all the schools have a high positive or low positive correlation between C.A. scores and examination scores in art subjects. The positive nature of the correlation coefficient implies that students who performed well in their C.A. were likely to perform well in the examinations. Looking at the table, S.M.C., Jos had a very high correlation coefficient of .7759 between C.A. scores and examination scores in art subject, implying that the scores in the C.A. reflect the performance of the students in art. The positive nature of the correlation implies that students who performed very well in their C.A. scores were likely to perform very well in the examinations. Tyhis same observation is applicable to S.L.C., Jos (on the table) where though the correlation coefficient of .4456 was not as high as that of S.M.C. Jos, it was relatively high and positive with a probability level of 0.009 ($P<0.01$).

Z.C.S.S., Bukuru had a higher coefficient of correlation (.8112) more than that of the schools already mentioned. However, C.S.S. Jos had very low correlation coefficient of .2845. The relation between C.A. and examinations was not significant indicating that students' scores in C.A. were not their actual scores. F.G.C., Jos had a very high coefficient of correlation of .7583 between C.A. and examinations. This is an indication that students' performance in art in this school is truly measured by their C.A., hence the high coefficient of correlation observed.

B.S.S., Gindiri has the same high coefficient of correlation (of .7443) comparable to that of S.M.C., Jos, Z.C.S.S., Bukuru, and F.G.C., Jos, implying that C.A. in these schools in art are truly a factor of performance in that subject. The same observation was made in F.G.G.C. Lantang with a high positive correlation coefficient (of .8010) and G.S.S. Bet, which has a correlation of .5100.

G.S.S. Miango had almost the same coefficient of correlation (of .4788) with S.L.C. Jos. In these two schools, C.A. relationship with examinations was not as high as that of schools mentioned above but the correlation between examinations and C.A. in the two schools in all the same very high.

G.C. Pankshin and G.C. Bokkos have a correlation of .7112 and .7143 respectively. Both fall within the same category with S.M.C. Jos, Z.C.S.S. Bukuru and F.G.C. Jos. However, in G.C. Amper, the correlation coefficient of .1239 was not significantly related to examinations in art subjects, implying that their scores in C.A. were not a product of their performance. This same observation was made of G.S.S. Ampang East, which has a correlation coefficient of .1651. A close observation of the table reveals that Z.C.S.S. Bukuru ranks first in order of hierarchy in the correlation coefficient of the examinations and C.A. in all the affected schools.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of the Study

This research was concerned with investigating the extent of relationship between continuous assessment and students' performance in art education in some selected junior secondary schools in Plateau State. Laudable as the objectives of C.A. are, certain problems within the education industry and the society have crippling effects on efforts to achieve these objectives. Among these problems are:

i) inadequate and inappropriate assessment of art activities,

ii) dearth of leaders both in quality and quantity,

iii) bias, subjective and or arbitrary allocation of marks by teachers because of lack of or refusal to follow sect criteria and marking scheme,

iv) high performance of students in internal examination that are not marched with similar performance in external examination.

Having identified the above problems, the Federal Government instituted measures for proper assessment of students' performance. These include a combination of both internal (teacher) assessment and external assessment in the certification of students and prediction of future performance of students at all levels. The combined scores, which are known as weighted scores are a better reflection of student performance and future capability.

Concerns have been equally expressed about the expensive nature of the C.A. system in terms of infrastucture requirement and its operational complexity. This is further compounded by the need for qualified personnel in quality and quantity. In view of its importance and the problems associated with the system, the research aimed at determining and ascertaining the extent of reliability of the new assessment system in art education. Also, the relationship between C.A. scores and students performance was investigated through a comparison of class scores and

examination scores. A total of 507 subjects were tested and their performance statistically analyzed. The statistical procedure used were the t-test, Pearson's product moment correlation, analysis of variance, mean, standard deviation and coefficient of correlation.

Three major hypotheses were stated and tested:

Hypothesis 1: States That There is No Significant Relationship Between C.A. Scores And Examination Scores in Junior Secondary Schools.

Hypothesis 2: States That Gender Difference Does Not Affect Performance In Art of Students In Junior Secondary Schools.

Hypothesis 3: States That There is No Significant Difference In Performance Between Students In Urban, Semi-Urban And Rural Schools In C.A. Scores.

These three hypotheses were further broken down into research questions and tested, each with its decision levels as follows:

i) that the relationship between C.A. scores and examination scores are highly significant;

ii) except in three schools with subjects representing 22.09% of sampled cases, all other cases, representing 77.91% who scored highly or poorly in C.A. also scored highly or poorly in the examination;

iii) that C.A. scores are fairly good predictors of students final scores in art examination;

iv) that there is no significant difference in the scores of urban and semi-urban students (scoring highly or poorly) in C.A. whereas significant difference was noticed in one urban school and the rural schools;

v) that there is significant difference in the mean score of boys and girls in examination performance;

vi) that to a large extent, C.A. scores can predict future performance of students in art activities especially in the urban and semi-urban schools;

vii) that there are differences in the scores between schools as observed in one urban and the rural schools. This makes comparison from one school to the other difficult.

As in previous years information from Plateau State educational resource centre indicates that of the 101 schools that registered for art examination, not all participated in the examination because teachers are lacking or transferred to other schools without replacement. It was further observed that a uniform scheme of work was used by most schools in the state. From this scheme was derived the C.A. test that provided scores for this study. This seems to account for the high reliability coefficient of 0.577 obtained in the pilot test. This result also indicates that the method used was reliable and consistent internally and therefore valid for this study and that most teachers follow the syllabus or scheme of work strictly.

Another pertinent observation was that art teachers were overloaded with work as it was common to find only one teacher teaching and assessing art in virtually all classes in the institution in both JSS and SSS classes. This was observed in the rural schools and may account for the lack of significant relationship between C.A. scores and examinations. The large number of scripts and the limited time given for marking, recording and submission of scores gives room for subjective or impressionistic assessment both in the C.A. and examination, rather than check it as intended by the federal education authorities.

Prediction based on C.A. results (as submitted by teachers) can also be affected by work overload and other social conditions that make teaching in rural settlement unattractive.

The significant difference observed in the mean score of males and females could be attributed to factors not altogether clear. Still-life drawing was the only yardstick used for the assessment of the subjects, but females' performances are known to be more inclined towards intricate design

works, sewing, textile, knitting and embroidery among others. Perhaps a broader test embracing these areas of study might throw more light on this aspect.

From the available statistical analysis, the C.A. scores of the urban and semi-urban schools which represent 77.91% have high positive correlation coefficient. This means that they are comparable from one school to the other within urban and semi-urban settings. The rural situation however, differs as confirmed by the post hoc test using Scheffe procedure. What this implies is that:

i) students who performed well in one school may not necessarily replicate such performance in another;

ii) the inter schools transfer of records which is supposed to be facilitated by the C.A. system when students transferred from one school to the other become problematic and difficult. Perhaps it is the distrust of the C.A. system that encourages many private, state and federal government colleges to conduct internal admission examination for transfer candidates. Only those who excel in these examinations are absorbed into the colleges. These tests themselves negate the principles behind the introduction of continuous assessment by the federal government.

Part of the findings of this study is that some teachers are observed to be involved in either subjective assessment or allocation of marks based on impressions, first impressions, rather than rigidly follow or utilize the marking scheme, as noted in the rural schools as well as one urban schools. This failure makes comparability of scores across schools a difficult affair. This failure tempers with the pivot upon which the C.A. system was introduced.

5.2 Conclusion

This study was carried out to determine the extent to which C.A. scores can serve as predictors of students' future performance in examinations in junior secondary schools.

The C.A. scores in most schools (77.91%) were found to correlate very well with examinations in junior secondary schools. Most students who scored highly or lowly in C.A. are expected to replicate such performance in their examinations or in other schools, particularly those in urban and semi-urban settings. C.A. can thus be a fairly good predictor of students' perroamnce.

It was also found that gender difference appears to affect performance in art courses as seen in their mean scores according to gender. It was also observed that such difference may be because of test limitation as not all aspects of art were tested. As regards the comparability of scores across schools, the researcher found that scores from some schools cannot be easily compared, most especially urban and rural schools. This makers inter-school transfer of students scores a difficult affair. This was attributed more to subjective assessment or marks allocation by teachers perhaps due to excess work load rather than difficulty in the operation of schemes of work.

Since comparability of scorres across school appear difficult because of subjective/bias assessment or due to failure of teachers to follow the marking scheme strictly, we can conclude that students cannot be transferred from schools 'A' to 'B' with their C.A. records without problems as envisaged by the Federal Government. It also explains why some school authorities have lost confidence in continuous assessment brought from schools outside seeking transfer. Consequently, they organize verification examination for the students. Only those who pass secure admission. The C.A. system is good but needs to be reassessed and problems threatening it checked immediately before parents and education authorities loose confidence in it.

5.3 Recommendation

Continuous assessment involves testing, marking recording and reporting by teachers. It was also found that tests from which C.A. scores are derived compare favourably with standardized ones from the ministry of education under whose supervision, the junior secondary schools are. It was

also observed that in the course of assessing students, there were the chances of bias marking, subjective assessment or more mark allocation. In the light of these, the following recommendations are made:

i) that researches such as this could be randomly and periodically carried out by government using available students' records from school to school, to observe the trend of assessment. When teachers are aware that they are under periodic checks, greater care will be taken in the course of assessment by teachers;

ii) the continuous assessment system can be very taxing. More teachers should be employed to reduce the excess workload borne by teachers due to the dearth of qualified manpower in schools to teacher art;

iii) periodic training in pre-service and in-service courses, workshops, seminar, an conferences should be organized constantly to keep art teachers abreast with latest happenings in the field of continuous assessment;

iv) teaching materials, workspace, studios and exhibition facilities should be provided where they are lacking;

v) further research should be carried out on other aspects of art based on gender performance in relation to those aspects to investigate possible differences that may exist in their performance according to gender;

vi) trained personnel such as clerical officers and computer recording facilities, cabinet data bank among others should be provided on a massive scale to ensure success of the continuous assessment system. This in turn calls for improved financial allocation to the education sector.

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APPENDICES

Page 16 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A 4/20/2000
SCORES AND EXAMS SCORES IN URBAN
BY MR. DAVID N. GOFOR

Variables		Cases	Cross-Prod Dev	Variance-Covar
V1	V2	173	9026.4474	52.4793

Page 17 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A 4/20/2000
SCORES AND EXAMS SCORES IN URBAN
BY MR. DAVID N. GOFOR

Correlation:	V1	V2
V1	1.0000	.6785
	(173)	(173)
	p=	p=

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed.

Page 18 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A 4/20/2000
SCORES AND EXAMS SCORES IN URBAN
BY MR. DAVID N. GOFOR

This procedure was completed at 18:05:11

Page 19 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A 4/20/2000
SCORES AND EXAMS SCORES IN URBAN
BY MR. DAVID N. GOFOR

Independent samples of V3 SEX

Group 1: V3 EQ 1.00 group 2: V3 EQ 2.00

t-test for: V1 C.A.

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	91	36.6593	7.568	.793
Group 2	82	31.2317	8.117	.896

	Pooled Variance Estimate			Separate Variance Estimate		
F 2-Tail	t	Degress of	2-Tail	t	Degrees of	2-Tail
Value Prob.	Value	Freedom	Prob.	Value	Freedom	Prob.
1.15 .516	4.55	171	.000	4.53	165.95	0.000

t-test for: V2 EXAM

	Number of Class	Mean	Standard Deviation	Standard Error
Group 1	91	31.3451	9.107	.955
Group 2	82	27.2098	9.143	1.010

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.01	.969	3.12	171	.002	3.12	169.01	.002

Independent samples of v3 SEX

Group 1: V3 EQ 1.00 Group 2: EQ 2.00

t-test for: V6 PERFORMANCE

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	91	68,2044	15,434	1,618
Group 2	82	58,4415	15,441	1,705

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.00	.994	4.15	171	.000	4.15	169.13	.000

This procedure was completed at 18:05:11

Variable	Cases	Mean	Std Dev
V1	250	32.4160	11.5853
V2	250	24.9872	9.5695

Variables	Cases	Cross-Prod Dev	Variance-Covar
V1 v2	250	13345.3312	53.5957

V1	1.0000	.4834
	(250)	(250)
	P=	P= .000
V2	.4834	1.0000
	(250)	(250)
	P= .000	P=

(Coefficient / (Cases) / 2-tailed significance)

" . " is printed if a coefficient cannot be computed

This procedure was completed at 18:05:12

Independent samples of V3 SEX
Group 1: V3 EQ 1.00 Group 2: V3 EQ 2.00

t-test for: V1 C.A.

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	125	31.7520	11.740	1.050
Group 2	125	33.0800	11.437	1.023

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.05	.772	-.91	248	.366	-.91	247.83	.366

t-test for: V2 EXAM

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	125	25.8480	9.863	.882
Group 2	125	24.1264	9.225	.825

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.14	.458	1.43	248	.155	1.43	246.90	.155

Independent samples of V3 SEX
Group 1: V3 EQ 1.00 Group 2: V3 EQ 2.00

t-test for: V6 Performance

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	125	57.6000	18.969	1.697
Group 2	125	57.2064	17.571	1.572

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.17	.395	.17	248	.865	.17	246.56	.865

AND EXAMS SCORES IN SEMI-URBAN BY MR. DAVID N. GOFOR

This procedure was completed at 18:05:12

Variable	Cases	Mean	Std Dev
V1	84	34.4762	9.3002
V2	84	16.2631	13.3947

Variable		Cases	Cross-Prod Dev	Variance-Covar
V1	V2	84	554.8762	6.6853

Correlations:	V1	V2
V1	1.0000	.0537
	(84)	(84)
	P= .	P= . 628
V2	0.537	1.0000
	(84)	(84)
	P= .628	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

This procedure was completed at 18:05:13

Independent samples of V3 SEX
Group 1: V3 EQ 1.00 Group 2: V3 EQ 2.00

t-test for: V1 C.A.

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	42	35.4524	10.035	1.548
Group 2	42	33.5000	8.512	1.313

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.39	.296	.96	82	.339	.96	79.87	.339

t-test for: V2 EXAM

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	42	19.8071	17.535	2.706
Group 2	42	12.7190	5.477	.845

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
10.25	.000	2.50	82	.014	.2.50	48.93	.016

Independent samples of V3 SEX
Group 1: V3 EQ 1.00 Group 2: V3 EQ 2.00

Independent samples of V3 SEX
Group 1: V3 EQ 1.00 Group 2: V3 EQ 2.00

t-test for: V1 C.A.

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	258	34.0853	10.388	.647
Group 2	249	32.5422	9.989	.633

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.08	.534	1.70	505	.089	1.71	504.99	.089

t-test for: V2 EXAM

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	258	26.8740	11.893	.740
Group 2	249	23.2177	9.958	.631

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.43	.005	3.75	505	.000	.3.76	495.21	.000

Independent samples of V3 SEX
Group 1: V3 EQ 1.00 Group 2: V3 EQ 2.00

t-test for: V6 PERFORMANCE

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	258	60.9593	18.845	1.173
Group 2	249	55.7598	16.323	1.034

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.33	.023	3.32	505	.001	.3.32	499.24	.001

---

t-test for: V6 PERFORMANCE

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	42	55.2595	20.754	3.202
Group 2	42	46.2190	9.632	1.486

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
4.64	.000	2.565	82	.012	2.56	57.88	.013

This procedure was completed at 18:05:13

Variable	Cases	Mean	Std Dev
V 1	507	33.3274	10.2131
V 2	507	25.0783	11.1260

Variable		Cases	Cross-Prod Dev	Variance-Covar
V1	V2	507	22676.3016	44.8148

Page 38 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 4/20/2000
AND EXAMS SCORES ALL AREAS BY MR. DAVID N. GOFOR

Correlations:	V1	V2
V1	1.0000	.3944
	(507)	(507)
	P= .	P= . 000
V2	.3944	1.0000
	(507)	(507)
	P= .000	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

Page 39 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 4/20/2000
AND EXAMS SCORES ALL AREAS BY MR. DAVID N. GOFOR

The procedure was completed at 18:05.13

Page 40 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 4/20/2000
AND EXAMS SCORES ALL AREAS BY MR. DAVID N. GOFOR

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Variable V1 C.A.

By Variable V5 (LOCATION)

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Ratio
Between Groups	2	418.2611	209.1306	2.0130	.1347
Within Groups	504	52361.3878	103.8916		
Total	506	52779.6489			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf	Int for Mean
Grp 1	173	34.0867	8.2693	.6287	32.8457 To	35.3277
Grp 2	250	32.4160	11.5853	.7327	30.9729 To	33.8591
Grp 3	84	34.4762	9.3002	1.0147	32.4579 To	36.4945
Total	507	33.3274	10.2131	.4536	32.4363 To	34.2185
	Fixed Effects Mode 1		10.1927	.4527	32.4381 To	34.2168
	Random Effects Model 1			.6834	30.3870 To	36.2679

Random Effects Mode 1 – Estimate of Between Component Variance .6773

Group	Minimum	Maximum
Grp 1	16.0000	54.0000
Grp 2	10.0000	70.0000
Grp 3	14.0000	60.0000
Total	10.0000	70.0000

Tests for Homogeneity of Variance

Cochrans C = Max. Variance/Sum(Variances) = .4643 , P = .000 (Approx.)

Barlett-Box F = 11.649 , P = .000

Maximum Variance / Minimum Variance 1.963

- - - - - - - - - - - - - - - - - O N E W A Y - - - - - - - - - - - - - - - - -

Variable V1 C.A.
By Variable V2 LOCATION

Multiple Range Test

Scheffe Procedure

Ranges for the .050 level -

3.47 3.47

The ranges above are table ranges.
The value actually compared with Mean(J)-Mean(I) is…
7.2073 * Range * Sqrt(1/N(I) + 1/N(J))

No (two groups are significantly different at the 0.050 level

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- - - - - - - - - - - - - - - - - O N E W A Y - - - - - - - - - - - - - - - - -

Variable V1 C.A.

By Variable V2 LOCATION

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Ratio
Between Groups	2	9896.9134	4948.4567	47.2890	.0000
Within Groups	504	52740.0479	104.6430		
Total	506	62636.9613			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf	Int for Mean
Grp 1	173	294902	9.3530	.7111	28.08666 To	30.8938
Grp 2	250	24.9872	9.5695	.6052	23.7952 To	26.1792
Grp 3	84	16.2631	13.3947	1.4615	13.3563 To	19.1699
Total	507	25.0783	11.1260	.4941	24.1075 To	26.0491
	Fixed Effects Mode 1		10.2295	.4543	24.1857 To	25.9709
	Random Effects Model 1			3.5030	10.0060 To	40.1506

Random Effects Mode 1 – Estimate of Between Component Variance 31.1723

Group	Minimum	Maximum
Grp 1	9.2000	49.8000
Grp 2	7.6000	48.2000
Grp 3	5.4000	90.0000
Total	5,4000	90.0000

Tests for Homogeneity of Variance

Cochrans C = Max. Variance/Sum(Variances) = .5005 , P = .000 (Approx.)

Barlett-Box F = 9.609 , P = .000

Maximum Variance / Minimum Variance 2.051

- - - - - - - - - - - - - - - - - O N E W A Y - - - - - - - - - - - - - - - - -

Variable V1 C.A.
By Variable V2 LOCATION

Multiple Range Test

Scheffe Procedure

Ranges for the .050 level -

3.47 3.47

The ranges above are table ranges.
The value actually compared with Mean(J)-Mean(I) is…
7.2334 * Range * Sqrt(1/N(I) + 1/N(J))

* Denotes pairs of groups significantly different at the .050 level

		G G G r r r p p p
Mean	Group	3 2 1
16.2631	Grp 3	
24.9872	Grp 2	*
29.4902	Grp 1	**

- - - - - - - - - - - - - - - - - O N E W A Y - - - - - - - - - - - - - - - - -

Variable V1 PERFORMANCE

By Variable V2 LOCATION

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Ratio
Between Groups	2	9814.4681	4907.2341	16.3840	.0000
Within Groups	504	150954.7453	299.5134		
Total	506	160769.2134			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf	Int for Mean
Grp 1	173	63.5769	16.1499	1.2279	61.1533 To	66.0005
Grp 2	250	57.4032	18.2479	1.1541	55.1302 To	59.6762
Grp 3	84	50.7393	16.7117	1.8234	47.1126 To	54.3659
Total	507	58.4057	17.8249	.7916	56.8504 To	59.9610
	Fixed Effects Mode 1		17.3065	.7686	56.8957 To	59.9158
	Random Effects Model 1			3.4738	43.4590 To	73.3524

Random Effects Mode 1 – Estimate of Between Component Variance 29.6529

Group	Minimum	Maximum
Grp 1	30.0000	99.0000
Grp 2	19.0000	117.0000
Grp 3	27.0000	130.0000
Total	19.6000	130.0000

Tests for Homogeneity of Variancess

Cochrans C = Max. Variance/Sum(Variances) = .3814 , P = .165 (Approx.)

Barlett-Box F = 1.604 , P = .201
Maximum Variance / Minimum Variance 1.277

- - - - - - - - - - - - - - - - - O N E W A Y - - - - - - - - - - - - - - - - -

Variable V6 PERFORMANCE

By Variable V5 LOCATION

Multiple Range Test

Scheffe Procedure

Ranges for the .050 level -

3.47 3.47

The ranges above are table ranges.
The value actually compared with Mean(J)-Mean(I) is…
12.2375 * Range * Sqrt(1/N(I) + 1/N(J))

* denotes pairs of groups significantly different at the .050 level

		G G G r r r p p p
Mean	Group	3 2 1
50.7393	Grp 3	
57.4032	Grp 2	*
63.5769	Grp 1	**

This procedure was completed at 18:05:14

FINISH

End of Include file.

APPENDIXES II

Variable	Cases	Mean	Std Dev
V 1	42	36.2857	8.1459
V 2	42	36.8667	6.7027

Variables	Cases	Cross-Prod Dev	Variance-Covar
V 1 V2	42	1736.8000	42.3610

Correlations:	V1	V2
V1	1.0000	.7759
	(42)	(42)
	P= .	P= . 000
V2	.7759	1.0000
	(42)	(42)
	P= .000	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

The procedure was completed at 23:28:34

Page 6 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS SCORES IN MURUMBA BY MR. DAVID N. GOFOR

Independent samples of V3 SEX
Group 1: V3 EQ 1.00 Group 2: V3 EQ 2.00

t-test for: V1 C. A.

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	26	40.6538	5.817	1.141
Group 2	16	29.1875	6.178	1.544

Page 9 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS SCORES IN ST LOUIS BY MR. DAVID N. GOFOR

Variable	Cases	Mean	Std Dev
V 1	33	37.0303	6.1006
V 2	33	31.1818	7.6496

Page 10 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS SCORES IN ST. LOUIS BY MR. DAVID N. GOFOR

Variables		Cases	Cross-Prod Dev	Variance-Covar
V 1	V2	33	665.4182	20.7943

Page 11 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS SCORES IN ST LOUIS BY MR. DAVID N. GOFOR

Correlations:	V1	V2
V1	1.0000	.4456
	(33)	(33)
	P= .	P= . 009
V2	.4456	1.0000
	(33)	(33)
	P= .009	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

The procedure was completed at 23:28:34

Independent samples of V3 SEX
Group 1: V3 EQ 1.00 Group 2: V1 EQ 2.00

t-test for: V1 C. A.

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	16	35.3750	6.859	1.715

This procedure was completed at 23:28:35

Variable	Cases	Mean	Std Dev
V 1	42	34.5714	9.6705
V 2	42	26.9571	10.0059

Variables		Cases	Cross-Prod Dev	Variance-Covar
V 1	V2	42	3218.4286	78.4983

Page 18 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN ZANG BY MR. DAVID N. GOFOR

Correlations:	V1	V2
V1	1.0000	.8112
	(42)	(42)
	P= .	P= . 000
V2	.8112	1.0000
	(42)	(42)
	P= .009	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

Page 19 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN ZANG BY MR. DAVID N. GOFOR

This procedure was completed at 23:28:35

Page 20 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN ZANG BY MR. DAVID N. GOFOR

Independent samples of V3 SEX
Group 1: V3 EQ 1.00 Group 2: V1 EQ 2.00

t-test for: V1 C. A.

	Number of Cases	Mean	Standard Deviation	Standard Error

Page 22 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN ZANG BY MR. DAVID N. GOFOR

This procedure was completed at 23:28:35

Page 23 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN COMMAND COLLEGE BY MR. DAVID N. GOFOR

Variable	Cases	Mean	Std Dev
V 1	28	27.8571	6.8243
V 2	28	20.5714	8.0531

Page 24 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN COMMAND COLLEGE BY MR. DAVID N. GOFOR

Variables	Cases	Cross-Prod Dev	Variance-Covar

V 1 V2 28 422.0857 15.6328

Correlations:	V1	V2
V1	1.0000	.2845
	(28)	(28)
	P= .	P= . 142
V2	.2845	1.0000
	(28)	(28)
	P= .142	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

This procedure was completed at 23:28:35

Independent samples of V3 SEX
Group 1: V3 EQ 1.00 Group 2: V1 EQ 2.00

t-test for: V1 C. A.

	Number of Cases	Mean	Standard Deviation	Standard Error

This procedure was completed at 23:28:35

Variable	Cases	Mean	Std Dev
V 1	28	32.8214	6.4639
V 2	28	29.1500	4.6994

Variables		Cases	Cross-Prod Dev	Variance-Covar
V 1	V2	28	621.9500	23.0352

Correlations:	V1	V2
V1	1.0000	.2845
	(28)	(28)
	P= .	P= . 142
V2	.7583	1.0000
	(28)	(28)
	P= .000	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

This procedure was completed at 23:28:35

Independent samples of V3 SEX
Group 1: V3 EQ 1.00 Group 2: V3 EQ 2.00

t-test for: V1 C. A.

This procedure was completed at 23:28:35

Variable	Cases	Mean	Std Dev
V 1	42	30.7381	8.5656
V 2	42	26.8857	8.6595

Variables		Cases	Cross-Prod Dev	Variance-Covar
V 1	V2	42	2263.5429	55.2084

Correlations:	V1	V2
V1	1.0000	.7443
	(42)	(42)
	P= .	P= . 000
V2	.7443	1.0000
	(42)	(42)
	P= .000	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

This procedure was completed at 23:28:35

Page 41 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN GINDIRI BY MR. DAVID N. GOFOR

This procedure was completed at 23:28:35

Page 42 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN GINDIRI BY MR. DAVID N. GOFOR

Variable	Cases	Mean	Std Dev
V 1	42	32.4048	10.7931
V 2	42	27.0476	8.4740

Page 43 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN FGGC LANTANG BY MR. DAVID N. GOFOR

Variables		Cases	Cross-Prod Dev	Variance-Covar
V 1	V2	42	3003.5905	73.2583

Page 44 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN FGGC LANTANG BY MR. DAVID N. GOFOR

Correlations:	V1	V2
V1	1.0000	.8010
	(42)	(42)
	P= .	P= . 000
V2	.8010	1.0000
	(42)	(42)
	P= .000	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

Page 45 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN FGGC LANTANG BY MR. DAVID N. GOFOR

This procedure was completed at 23:28:35

Page 46 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN FGGC LANTANG BY MR. DAVID N. GOFOR

This procedure was completed at 23:28:35

Page 47 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN GSS BETIPANKSHIN BY MR. DAVID N. GOFOR

Variable	Cases	Mean	Std Dev
V 1	42	42.4286	14.0264

V 2 42 20.4429 7.3464

Variables		Cases	Cross-Prod Dev	Variance-Covar
V 1	V2	42	2154.6286	52.5519

Correlations:	V1	V2
V1	1.0000	.5100
	(42)	(42)
	P= .	P= . 001
V2	.5100	1.0000
	(42)	(42)
	P= .000	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

This procedure was computed at 23:28:38

Independent samples of V3 SEX

Group 1: V3 EQ 1.00 Group 2: V3 EQ 2.00

t-test for: V1 C.A.

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	21	43.2381	13.711	2.992
Group 2	21	41.6190	14.627	3.192

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.14	.775	.37	40	.713	.37	39.83	.713

t-test for: V2 EXAM

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	21	23.4952	7.497	1.636
Group 2	21	17.3905	5.904	1.288

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.61	.294	2.93	40	.006	2.93	37.88	.006

Independent samples of V3 SEX

Group 1: V3 EQ 1.00 Group 2: V3 EQ 2.00

t-test for: V6 PERFORMANCE

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	21	66.7333	18.893	4.123
Group 2	21	59.0095	18.471	4.031

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.05	.920	1.34	40	.188	1.34	39.98	.188

This procedure was completed at 23:28:39

Variable	Cases	Mean	Std Dev
V 1	40	29.3500	8.8826
V 2	40	24.2250	10.4440

Variables		Cases	Cross-Prod Dev	Variance-Covar
V 1	V2	40	1732.4500	44.4218

Correlations:	V1	V2
V1	1.0000	.4788
	(40)	(40)
	P= .	P= . 002
V2	.4788	1.0000
	(40)	(40)
	P= .002	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

This procedure was completed at 23:28:39

Independent samples of V3 SEX

Group 1: V3 EQ 1.00 Group 2: V3 EQ 2.00

t-test for: V1 C.A.

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	20	30.2000	9.237	2.066
Group 2	20	28.5000	8.666	1.938

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.14	.784	60	38	.552	.60	37.85	.552

t-test for: V2 EXAM

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	20	24.4800	11.466	2.564
Group 2	20	23.9700	9.606	2.148

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.42	.448	.15	38	.880	.15	36.87	.880

Independent samples of V3 SEX

Group 1: V3 EQ 1.00 Group 2: V3 EQ 2.00

t-test for: V6 PERFORMANCE.

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	20	54.6800	18.732	4.189
Group 2	20	52.4700	14.655	3.277

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.63	.293	.42	38	.680	.42	35.92	.680

This procedure was completed at 23:28:40

Page 61 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN G C. PANKSHIN BY MR. DAVID N. GOFO

Variable	Cases	Mean	Std Dev
V 1	42	27.7619	11.2289
V 2	42	26.6381	11.1982

Page 62 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN G C. PANKSHIN BY MR. DAVID N. GOFOR

Variables		Cases	Cross-Prod Dev	Variance-Covar
V 1	V2	42	3769.7810	91.9459

Page 63 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN G C. PANKSHIN BY MR. DAVID N. GOFOR

Correlations:	V1	V2
V1	1.0000	.7312
	(42)	(42)
	P= .	P= . 000
V2	.731288	1.0000
	(42)	(42)
	P= .000	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

Page 64 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN GSS MAINGO BY MR. DAVID N. GOFO

This procedure was completed at 23:28:41

Page 65 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN GSS MAINGO BY MR. DAVID N. GOFO

This procedure was completed at 23:28:41

Page 66 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN G.C BOKKOS BY MR. DAVID N. GOFO

Variable	Cases	Mean	Std Dev
V 1	42	31.6667	9.4808

V 2	42	24.6476	9.6723

Page 67 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES AND EXAMS IN G.C BOKKOS BY MR. DAVID N. GOFOR 5/6/2000

Variables		Cases	Cross-Prod Dev	Variance-Covar
V 1	V2	42	2685.6667	65.5041

Page 68 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES AND EXAMS IN G.C BOKKOS BY MR. DAVID N. GOFOR 5/6/2000

Correlations:	V1	V2
V1	1.0000	.7143
	(42)	(42)
	P= .	P= . 000
V2	.7143	1.0000
	(42)	(42)
	P= .000	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

Page 69 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES AND EXAMS IN G.C BOKKOS BY MR. DAVID N. GOFO 5/6/2000

This procedure was completed at 23:28:42

Page 70 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES AND EXAMS IN G.C BOKKOS BY MR. DAVID N. GOFO 5/6/2000

Page 71 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES AND EXAMS IN G.C BOKKOS BY MR. DAVID N. GOFO 5/6/2000

This procedure was completed at 23:28:42

Page 72 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES AND EXAMS IN G.C AMPER BY MR. DAVID N. GOFO 5/6/2000

Variable	Cases	Mean	Std Dev
V 1	42	37.0952	9.9922
V 2	42	13.1000	6.5976

Page 73 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES AND EXAMS IN G.C AMPER BY MR. DAVID N. GOFOR 5/6/2000

Variables	Cases	Cross-Prod Dev	Variance-Covar

V 1 V2 42 335.0000 8.1707

Correlations:	V1	V2
V1	1.0000	.1239
	(42)	(42)
	P= .	P= . 434
V2	.1239	1.0000
	(42)	(42)
	P= .434	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

This procedure was completed at 23:28:42

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
3.40	.009	.80	40	.429	.80	30.83	.430

Page 78 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN G.C AMPER BY MR. DAVID N. GOFOR

This procedure was completed at 23:28:43

Page 79 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN GSS AMPANG BY MR. DAVID N. GOFOR

Variable	Cases	Mean	Std Dev
V 1	42	31.8571	7.8230
V 2	42	19.4262	17.2969

Page 80 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN GSS AMPANY BY MR. DAVID N. GOFOR

Variables		Cases	Cross-Prod Dev	Variance-Covar
V 1	V2	42	915.7571	22.3355

Page 81 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN GSS AMPANY BY MR. DAVID N. GOFOR

Correlations:	V1	V2
V1	1.0000	.1651
	(42)	(42)
	P= .	P= . 296
V2	.1651	1.0000
	(42)	(42)
	P= .296	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

Page 82 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN GSS AMPANY BY MR. DAVID N. GOFOR

This procedure was completed at 23:28:44

Page 83 ANALYSIS OF THE RELATIONSHIP BETWEEN C.A. SCORES 5/6/2000
AND EXAMS IN GSS AMPANY BY MR. DAVID N. GOFOR

Independent samples of V3 SEX

APPENDIX

PILOT STUDY

Page 2 RELATIONSHIP BETWEEN C.A. & EXAMINATION SCORES 4/20/2000
PILOT STUDY BY MR. DAVID N. GOFOR

Variable	Cases	Mean	Std Dev
V 1	120	27.6833	8.8915
V 2	120	26.4867	12.4986

Variables		Cases	Cross-Prod Dev	Variance-Covar
V 1	V2	120	5675.6933	47.6949

Correlations:	V1	V2
V1	1.0000	.4292
	(120)	(120)
	P= .	P= . 000
V2	.5292	1.0000
	(120)	(120)
	P= .000	P= .

Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

This procedure was completed at 18:05:09

****** METHOD 1(SPACE SAVER) WILL BE USED FOR THIS ANALYSIS ******
****** 128 BYTES OF SPACE REQUIRED FOR RELIABILITY

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L L)

1. V1 C.A.
2. V2 EXAM

RELIABILITY COEFFICIENT

N OF CASES = 120.0 N OF ITEMS = 2

ALPHA = .5770

This procedure was completed at 18:05:09

Independent samples of V3 SEX

Group 1: V3 EQ 1.00 Group 2: V3 EQ 2.00

t-test for: V1 C.A.

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	60	28.0500	9.045	1.168
Group 2	60	27.3167	8.796	1.136

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.06	.831	.45	118	.653	.45	117.91	.653

t-test for: V2 EXAM

	Number of Cases	Mean	Standard Deviation	Standard Error
Group 1	60	27.7233	12.894	1.665
Group 2	60	25.2500	12.071	1.558

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.14	.614	1.08	118	.280	1.08	117.49	.280

This procedure was completed at 18:05:10

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Variable V1 C.A.

By Variable V4 LOCATION

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	2	320.0972	160.0486	2.0605	.1320
Within Groups	117	9087.8694	77.6741		
Total	119	9407.9667			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf	Int for Mean
Grp 1	62	27.7903	8.5525	1.0862	25.6183 To	29.9624
Grp 2	28	25.1429	7.5460	1.4261	22.2168 To	28.0689
Grp 3	30	29.8333	10.3193	1.8840	25.9800 To	33.6866
Total	120	27.6833	8.8915	.8117	26.0761 To	29.2905
	Fixed Effects Mode 1		8.8133	.8045	26.0900 To	29.2767
	Random Effects Model 1			1.2259	22.4088 To	32.9578

Random Effects Mode 1 – Estimate of Between Component Variance 2.2283

Group	Minimum	Maximum
Grp 1	10.0000	49.0000
Grp 2	10.0000	36.0000
Grp 3	8.0000	50.0000
Total	8.0000	50.0000

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .4501 , P = .098 (Approx.)

Barlett-Box F = 1.427 , P = .240

Maximum Variance / Minimum Variance 1.870

Variable V1 C.A.
By Variable V2 LOCATION

Multiple Range Test

Scheffe Procedure
Ranges for the .050 level -

3.51 3.51

The ranges above are table ranges.
The value actually compared with Mean (J) – Mean (I) is ..
6.2319 * Range * Sqrt (I/N(I) + I/N (J))

No two groups are significantly different at the .050 level

Variable V2 EXAM

By Variable V4 LOCATION

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	2	5359.9518	2679.9759	23.7013	.0000
Within Groups	117	13229.5268	113.0729		
Total	119	18589.4787			

Group	Count	Mean	Standard Deviation	Standard Error	95 Pct Conf	Int for Mean
Grp 1	62	32.5371	11.4616	1.4556	29.6264 To	35.4478
Grp 2	28	23.5214	10.8912	2.0582	19.2983 To	27.7446
Grp 3	30	16.7500	8.3324	1.5213	13.6386 To	19.8614
Total	120	26.4867	12.4986	1.1410	24.2275 To	28.7459
	Fixed Effects Mode 1		10.6336	.9707	24.5642 To	28.4091
	Random Effects Model 1			5.2535	3.8826 To	49.0907

Random Effects Mode 1 – Estimate of Between Component Variance 69.4383

Group	Minimum	Maximum
Grp 1	7.8000	53.4000
Grp 2	6.6000	42.6000
Grp 3	3.2000	34.8000
Total	3.2000	53.4000

Tests for Homogeneity of Variances

Cochrans C = Max. Variance/Sum(Variances) = .4113 , P = .316 (Approx.)

Barlett-Box F = 1.828 , P = .161

Maximum Variance / Minimum Variance 1.892

- - - - - - - - - - -- - - - - - O N E W A Y - - - - - - - - - - - - - - - - - - -

Variable V2 EXAM
By Variable V4 LOCATION

Multiple Range Test

Scheffe Procedure
Ranges for the .050 level -

3.51 3.51

The ranges above are table ranges.
The value actually compared with Mean (J) – Mean (I) is ..
7.5191 * Range * Sqrt (I/N(I) + 1/N (J))

(*) Denotes pairs of groups significantly different a the .050 level

		G G G r r r p p p
Mean	Group	3 2 1
16.7500	Grp 3	
23.5214	Grp 2	*
32.5371	Grp 1	**

This procedure was completed at 18:05:10

Variable	Cases	Mean	Std Dev
V 1	173	34.0867	8.2693
V 2	173	29.4902	9.3530