Adetoro, Sheriffdeen Abayomi, Factors Associated with Quality of Academic Programs and Types of Jobs Secured by Graduates of Handcrafted Textile Design Programs of Universities and Polytechnics in Nigeria. Doctor of Philosophy (Higher Education), December, 1983, 199 pp., 19 tables, 2 illustrations, bibliography, 155 titles.

The problem with which this study is concerned is that of determining the possible differential effects of the alternative training patterns of handcrafted textile design students in universities and polytechnics in Nigeria on the scores in courses for their final-year training as well as the type of first employment that students secure after graduation.

The population of the study is 1980 textile design graduates of universities and polytechnics in Nigeria. A geographical sampling based on early regional distribution for textile design education is used to provide data on 142 students from the two types of academic institutions. The survey instrument developed is a 25-column matrix. The four related types of statistical procedures used are (1) chi square contingency analysis, (2) hierarchical forward inclusion stepwise regression, (3) multiple regression, and (4) regression discontinuity analysis.

Based on the analyses of data for this study, the following major findings are pertinent.

1. First-year training of textile design students in Nigeria appears to be the best predictor of final-year training.

2. Only minor differences appear to exist between the student training patterns of universities and polytechnics in Nigeria.

3. Examiners who hold a doctorate tend to rate students more highly than those who do not hold a doctorate.

4. It appears that type of academic institution, location of institution, and training pattern are not reliable predictors of the type of employment secured by students after graduation.

The general conclusion of this study is that many more similarities than differences exist in the training of textile design students in Nigerian universities and polytechnics.

FACTORS ASSOCIATED WITH QUALITY OF ACADEMIC PROGRAMS AND TYPES OF JOBS SECURED BY GRADUATES OF HAND-CRAFTED TEXTILE DESIGN PROGRAMS OF UNIVERSITIES AND POLYTECHNICS IN NIGERIA

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DISSERTATION

Presented to the Graduate Council of the
North Texas State University in Partial
Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

By

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Denton, Texas

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CHAPTER I

INTRODUCTION

Immediately after Nigeria's attainment of independence in 1960, there was much concern about the quality of "home-made goods," prominent among which were textile and clothing materials. Adegbile (1, p. 176) reports that, since the last decade or so, the textile industry has been beset with a number of problems, of which manpower training has been the most crucial. The urgent need for adequate training of textile designers, particularly at the higher education level, is supported by Wahlman (31, p. 9), who states that the production of Nigerian textiles is the byproduct of an indigenous technology which provides employment for the majority of Nigerians; therefore, the training of its workers at the higher level should necessarily be of good quality.

In recent years, however, many factors have been associated with the training of textile designers in Nigerian higher education institutions. At least five separate conferences and workshops (some of which did not publish proceedings) have been organized to discuss this issue. Bhattacharya (7, p. 45) observed in 1980 that textile students have been losing interest in the language of "weft

and warp"; as a result, the quality of Nigeria's textile products has been a controversial issue that tends to be reflected by the poor sales of such textile goods.

It appears that educators in this area need to do more work. As Trowell asserts, "design for textiles goes through a whole process of planning the motifs, which are not only functionally satisfactory but also pleasing to the eye and touch" (29, p. 13). At some of the conferences, the problems have been said to be associated with the lack of clear definition of goals and objectives of the programs, lack of vocational goals, and the seeming duplication of functions by different types of higher educational institutions responsible for training students in textile design. Shonuga (27, p. 1) observes that at a glance the teaching programs in textile design at institutions of higher learning reveal an identity so close that they could all pass for one institution with the same product in view.

In support of this concept Okeke (25, p. 12) reports that one unfortunate lapse in the development of textile education in Nigeria is that the objectives do not seem to be consistent with the types of jobs that students do after graduation. He believes that this problem is due partly to the absence of coordinated planning of programs at higher institutional levels as well as to a lack of national design organizations which could assess the programs

and recommend adequate research facilities with a view to regulating standards.

Apart from these concepts of Okeke (25) and Shonuga (27), Fafunwa (12, p. 175) asserts that one of the major defects of the Nigerian educational system is the low priority accorded to technical and vocational education. The literary tradition and the university degree have become indelible symbols of prestige in Nigeria; in contrast, technology and other practical subjects, particularly at the subprofessional level, have not won esteem. In agreement with this assertion, Maclennan (23, pp. 19-21) reports that white-collar jobs, which are based on academic education, have more status even in industry and are accorded greater social prestige in society than blue-collar jobs regardless of the nature of the work, level of responsibility, skills, or personal qualities involved. Parents and the public tend to encourage young people to pursue university education in preference to polytechnic training.

Adding to the confusion between the proponents of technicians and graduates of universities (as will be described in Chapter II), some people stress intellectual capacities while others insist on technical and manual skills in equal proportion. Still others maintain that even senior grade technical functions are much less intellectual than manual.

Since the inception of textile training programs in the polytechnics and universities in Nigeria in about 1952

and 1955, respectively, several questions have arisen regarding how student training should be handled. Politically, Okafor (24, pp. 93-95) reports that, in the early 1970s, the Action Group Party presented a policy paper on higher education that outlines four areas of serious defects, one of which is the relationship between a technological and a university education. Unlike the situation in Nigeria, the paper asserts that technological education should be complementary and not competitive with that offered by universities. In connection with these conflicts, the structure of the two types of institutions still presumed the university's supremacy in terms of recognition, prestige, value, and public acceptance. Although technical and vocational education is regarded as being of primary importance, the attitude of society was poor toward the government's approach to student training arrangements. Among the issues were the entry qualifications for the two types of institutions, the types of instructors, program differences, salaries paid to students after graduation (all of which are government mandated), and the general preference of society.

Ideally, the graduate of a textile design program is assumed to have studied and practiced basic skills in weaving, printing, dyeing, and designing. If such a graduate is from a university, he could be expected to have done

work up to a professional or specialist level; the polytechnic graduate may have attained a subprofessional stage. However, from investigation it appears that the type of employment positions which all graduates secure is on a monetary par, and this does not satisfy those who are looking for at least some marginal differences (24).

In order to reinforce the belief that there is a closeness in the two programs, Wangboje (32, p. 23) asserts that the difference between a polytechnic graduate and a university graduate is not necessarily in the content of the programs or the quality of teaching but surely in the area of the emphasis of each institution based on their goals and objectives. Cardew (9, p. 240), however, believes that a craftsman, who can be called a subprofessional, works by rule whereas an artist, who can be regarded as a professional, works by inspiration. In his belief, Ali states that he calls a man a technician who makes a car work and an engineer or specialist who designs and conceptualizes a car that can work (6). In another pertinent comparison, Hall (15) states that a technician needs more formal education than a craftsman but less than a professional engineer.

The Nigerian federal government's (13, p. 14) 1977 policy on education clearly states in part that a technical education should provide trained graduates who have the

necessary skills as technicians or subprofessionals. The universities, however, are aimed at producing specialists and professionals. This distinction seems to rank the university degree in textile design higher than the diploma of the polytechnic. Therefore, graduates of polytechnics who aspired to gain admission to universities in order to obtain a university degree were rejected or placed at a less equivalent grade or stage in university programs. This loss of polytechnic recognition partly brought on strong opposition by polytechnic students when the government proposed to merge the former Ordinary National Diploma (OND) and the Higher National Diploma (HND) into one single program called the Nigerian National Diploma (NND). The government temporarily resolved the issue by deploring the general public attitude which regards technical education as somewhat inferior to other types. In addition, holders of HND certificates were placed on the same salary scale as their degree counterparts from universities. Three universities of technology have since been created to alleviate some of the problems (13, p. 19).

From this stage onward the relationship between the polytechnics and the universities became a discussion issue at various levels. Based on the uncertainties that surround the matter, which provided the impetus for this study, the concern is the higher educational performance

of textile design students in Nigeria, methods of selecting them, and the type of positions that they secure after graduation. It is assumed that the information collected will help to clarify some aspects of these issues.

Statement of the Problem

This study is concerned with the quality of academic programs and the types of jobs secured by the graduates of handcrafted textile design programs of the polytechnics and the universities in Nigeria.

Purposes of the Study

The purposes of the study are as follows:

1. To determine whether the students' scores in WASC (West African School Certificate) Fine Art, their portfolio presentations, and scores in both drawing and design at the point of entry relate more to the final-year coursework scores than their first-year coursework scores;

2. To determine the possible differential effects of the alternative training patterns of handcrafted textile design students in both the polytechnics and universities in Nigeria on their coursework scores for their final year of training;

3. To determine whether the examiners' academic qualifications, age, teaching experience, place of origin, and place of work relate to their judgment of students' final-year coursework;

4. To determine the extent to which students' sex, age, state of origin, and source of financial support relate to their final-year performance;

5. To determine the degree to which students' sex, age, state of origin, and final-year coursework scores relate to the types of employment that they secure after graduation;

6. To determine whether a relationship exists between the academic institution that students attend and the employment secured after graduation;

7. To determine whether the location of the institutions or the differences in the numbers of hours allotted to specific subjects in the two programs relate to students' type of employment after graduation.

Research Questions

Based upon the statement of the problem and the purposes of the study, the following research questions guide this research.

1. Will students' scores in WASC (West African School Certificate) Fine Art, portfolio presentation, and entrance examinations in drawing and design relate more to the final-year coursework scores than their first-year coursework scores?

2. To what extent will the differences in the handcrafted textile design training patterns of Nigerian

polytechnics and universities relate to the coursework scores for students' final year of training?

3. To what extent will the examiners' academic qualifications, age, teaching experience, place of origin, and place of work relate to the judgment that they give on students' final-year coursework?

4. Will students' sex, age, state of origin, and source of financial support relate to their final-year performance?

5. To what extent will students' sex, age, state of origin, and final-year coursework scores relate to the type of employment secured after graduation?

6. Does a relationship exist between the type of academic institution that a student attends and the employment secured after graduation?

7. Will the location of the academic institutions or the differences in the number of hours allotted to specific subjects in the two programs relate to students' employment after graduation?

Background and Significance of the Study

The importance of adequate training in textile decoration and production cannot be overemphasized. Jefferson (19, pp. 8-9) recounts that man's inclination to decorate objects is deep-rooted and universal. Since prehistoric times man has embellished a wide variety of his possessions,

from his weapons and the walls of his shelter to his clothing and even his own body. Langley (20) remarks that the textile and related industries of most countries are significant factors of their economies. This concept is reinforced by the research conducted in 1980 by the Nigerian Cotton Board; Gusau (14, p. 8) states that textile industries comprised the second largest employer of labor and that, in terms of import substitution, it saves Nigeria some one billion Naira (approximately 1.5 billion dollars) in its foreign exchange account. Stanfield and others (28, pp. 40-45) further report that the greatest contribution that Nigeria made to international trade in 1960 was in the textile area, where adire cloth ranked as one of the top commodities of international trade in the world market.

Hollen and Saddler (16, p. 1) state that the word "textiles" is derived from a Latin term meaning a woven fabric or raw material suitable for weaving. It is, however, recognized today that this latter description is outdated since modern technology has created non-woven textiles. Adrosko (2, pp. 566-575) reports that the earliest known textiles were found in Egyptian tombs and Peruvian sites. This account is also assumed to support the importance and development of textile design activities in Nigeria. Moreover, de Negri (10) reports that textile manufacturing in Nigeria dates back many centuries. At present, products

of the Nigerian cottage textile industries are jealously guarded in foreign museums.

Traditionally, three important areas of textile design and fabric production have been popular. De Negri (10, pp. 95-101) believes that the art of weaving was first introduced to northern Nigeria from across the Sahara, perhaps by immigrants from the decaying empire of Mali where a large cotton industry flourished in the fourteenth century. During this period, an apprenticeship form of training was employed. This system of education consisted of trainees who served an apprenticeship in a master craftsman's workshop. The craftsman taught the various possibilities and limitations of materials, texture, design, and the combination of fitness with purpose. Similarly, Stanfield and others (28, p. 9) report that the tying and dyeing of cotton cloth probably mark the beginning of printed and surface-decorated fabric in Nigeria. In a 1982 study, Aig-Imoukhuede (4, p. 1) suggests that embroidered gowns and caps were probably introduced into the northern part of Nigeria through the same source as weaving. He estimates the annual turnover of the crafts to be over a billion Naira.

The same training system was also used in medieval Europe. Patten (26, pp. 670-683) states that, indeed, apprenticeship was the usual method of teaching and learning before the aspects of the subject-matter to be

learned were identified, isolated, and packaged as a related body of information to be taught in a group classroom situation.

The rapid growth of industries, educational progress, and technological advancement demanded the teaching of textile design and cloth production in Nigerian higher education institutions. Langley (20) supports this notion when he comments that, as the social needs for new technologies increased in Nigeria during the nineteenth century, the university became a training ground for many professional and scientific pursuits rather than an enclave for humanities. Therefore, a systematic mastering of specialties, such as skills in painting, modeling, weaving, and surface design, foreshadowed the higher education that sustains civilized living.

Iwang (18) remarks that, since the inception of Yaba College in 1945, the number of polytechnics and colleges of technology in Nigeria has risen to 27. Even with this number, technical education had a slow start and developed less quickly than other forms of education in the country. This, according to Iwang, is partly due to the fact that the voluntary agencies which pioneered western education in Nigeria were unable to increase or popularize technical and vocational education on the same scale as literary education.

Okeke (25, pp. 12-15) notes that textile design programs at the university level began at Zaria School of Art in 1953 and were influenced by the British art school tradition to train design teachers and professionals. In another report Aig-Imoukhuede (4, p. 2) states that the technical institute (later renamed Yaba College of Technology) started offering courses in art and design in 1952. An investigation conducted early in 1982 by the National Arts Council puts the number of polytechnics and universities offering textile design courses at approximately nine and seven, respectively.

Since the inception of the two types of schools for textile training, the problem of how students are supposed to be trained, as well as the kind of jobs that graduates of the training secure, has been a controversial issue that is widely discussed by all concerned with the textile trade. It is, however, notable that, despite the many discussions that have been held on the issue, the investigations made thus far reveal that very little scientific research has been conducted in Nigeria on the subject.

The records of both the universities and the polytechnics on admission requirements, as usually advertised in local and international newspapers, demand at least four credits in WASC for applicants seeking admission to a polytechnic program and at least five credits for those

aspiring to study in a university; one of the credits must be in art. The candidates who meet the minimum requirements are invited to an interview and to take an entrance examination for further screening. General drawing and design scores are very crucial in this screening examination. It is generally assumed that all of the prerequisities taken before candidates are accepted into programs have some bearing upon the entire curriculum (7).

At the first textile design workshop held at Ahmadu Bello University in 1978, Ajakaiye (5) stated that there was an urgent need to relate textile design teaching to the requirements of the industry. He further contended that there was a need for researchers to investigate the relationship of the textile design programs of polytechnics and universities in Nigeria. This expression of need had a great impact on those who participated in the workshop and is part of the basis for conducting this study.

At the 1980 conference organized by the Kaduna State Council for Arts and Culture Ikara (17) informed the audience in his keynote address that a recent investigation revealed that the root of the apparently poor quality of homemade textiles has been traced to the preparation given to the students in institutions of higher learning. Also in 1980, during the first international conference on textile education held in Kaduna and organized by the Nigerian

Section of the Textiles Institute, Eicher (11, p. 24) referred to her published statement that Nigerian textiles are too beautiful to be left unattended. She recounted that, as a result of her extensive study of Nigerian textiles across the country, there is an appreciable amount of traditional information that can be utilized by people in higher education. She felt that the polytechnics and universities would be appropriate places to do the job.

In examining factors related to the training of textile designers, several theories are considered which connect the two types of higher educational institutions in Nigeria. Tyler (20, p. 178) believes that a major step in most theories of program development is the formulation of educational objectives. Lonard and Utz (22) support this concept, stating also that any behavioral objective must concern itself with the total learning program. These two concepts are pertinent to the relationship of the programs to the performance of students.

From the various investigations and discussions cited previously, it is apparent that there is enough background to warrant a study that will examine factors relating the effects of two different types of programs on students' performance and job opportunities. This exploratory study will focus mainly on (1) examining the variability of certain attributes of college performance, (2) collecting

information regarding types of jobs available for textile design graduates, (3) factors affecting final-year students' performance, and (4) the effect of the different institutions on both achievement and job positions obtained by graduates. The study is also concerned with determining *factors associated with the types of training available to* students in the two areas of higher education in Nigeria.

Since current investigations reveal that apparently little scientific research has been conducted in the areas outlined, this study would, to some extent, pioneer a search for the true position. The study is significant in that employers, who need to know how to interpret academic grades, could give educators an indication of how relevant the programs are to the students' future. Counselors and sponsors are frequently concerned with long-range plans and thus need to know the predictive implications of both academic performance and other student characteristics. College policy-makers also could be assured of the reliability of their assumption of the value of grades. Finally, the information regarding certain aspects of the polytechnic and university textile design education programs can be made available for use by students in their selection of an institution of higher education.

Definition of Terms

The following terms are defined as they relate to this study.

Higher education institutions are those that cover post-secondary sections of Nigeria's national educational system, as offered in universities, polytechnics, and colleges of technology, including colleges of education and advanced teacher training colleges (13, p. 14).

Polytechnics or colleges of technology are technical education institutions established by the government where two types of diploma certificates are awarded: Ordinary National Diplomas (ONDs) are awarded after the first two years, and Higher National Diplomas (HNDs) are terminal diplomas awarded after four years of training (13, p. 19). This study is concerned with HND student programs.

Program and curriculum are used interchangeably, and both mean "an organized body of information, principles, and theory comprising what the institutions being investigated teach in formal courses, seminars, tutorials, or independent study" (3, pp. 40-41).

West African School Certificate (WASC) examinations are terminal common examinations used throughout West Africa to grade students' performance at the end of their high school program. The grades awarded are A = distinction, C = credit, P = pass, and F = failure (13, pp. 5-10).

External examiners are academic assessors appointed from outside a particular higher education institution to give an external opinion of students' final year examination grading (3).

Instructor is used to describe both lecturers and instructors from the two types of institutions because of the variety of local meanings attached by teaching personnel in the polytechnics and universities under study.

Universities are federally approved institutions of higher education in Nigeria which conduct research and award both academic and full professional degrees (13, p. 18). Universities award first as well as graduate degrees. This study is concerned with the first degree program.

Academic session means a whole academic year, which is usually nine months in most Nigerian universities and polytechnics.

Exhibition refers to the display of students' practical coursework, which makes the work easier for examiners to evaluate.

Coursework is confined to studio work and theoretical presentations used to describe the skills required in that work.

Delimitations of the Study

This study is confined to all polytechnics and universities in Nigeria where textile design programs are

offered. The investigation does not involve actual experimental teaching or design of a new program. The institutional types are represented by a sample of five each. Only the first degree and Higher National Diploma programs of four years' duration are considered. Students who were admitted in 1976 and completed their course of study will be included in the research. Any higher level program such as that for the Master of Arts degree is not considered in the study.

Limitations of the Study

At the time of the study there is no way of knowing whether the factors surveyed are sufficiently comprehensive to describe the relationships of the predictors to the criterion. Therefore, the findings and conclusions of this study may not necessarily apply to institutions not included in the sample.

Procedures for Collecting Data

This study is designed to determine correlation among entrance examination scores, first- and final-year scores, and the type of job positions taken by textile design graduates of some selected Nigerian universities and polytechnics who completed their course of study in 1980. In addition, the investigation focuses on possible differential effects of university versus polytechnic training on

final-year test scores. Data were collected on students who were admitted in 1976 and who took their final-year examinations at the end of the 1980 academic year. Prior to collecting data, permission was sought from the chairpersons of the randomly selected polytechnics and universities in Nigeria.

A geographical sampling was used which reflects the former regional distribution of higher educational institutions in Nigeria. In order to answer the research questions, data with respect to 142 students and 38 examiners were collected from five polytechnics and five universities. Appendix B contains a complete listing of the distribution of students in the academic institutions, as well as the examiners who evaluated the students' final-year coursework.

Since academic as well as employment records of the students were required for the study, two forms were designed that contain all the information required. These sample forms, one for the students and the other for the examiners, were taken to the various institutions included in the sample. Pertinent records from the students' and examiners' files were transferred to the sample forms (instruments). One copy of the two instruments was used for each institution.

Procedures for Analysis of Data

In order to answer the research questions, information obtained from the items on the instruments was coded onto cards for computer processing. After all computations had been made, the data were entered into tables for ease of reporting and interpretation. The three related types of analysis used are chi square contingency analysis; multiple regression; and regressional discontinuity analysis, design number 16 (8, pp. 61-64).

Summary

Chapter I introduces the study, states the problem, outlines the purposes of the study and the research questions to which answers are sought, describes the background and importance of the study, indicates the delimitations and limitations of the study, defines the special terms used, and gives a brief overview of the procedures used in the collection and analysis of data. A synthesis of related literature based upon pertinent issues about textile education in Nigeria is presented in Chapter II. Chapter III describes in detail the methods and procedures followed to organize the research study and collect the data, and it also indicates the manner in which the data were processed. The analysis, evaluation, and reporting of the data are presented in Chapter IV. A summary of the study and the findings, conclusions, implications, and

recommendations for further research based upon the investigation are included in Chapter V.

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CHAPTER II

REVIEW OF THE LITERATURE

A recently conducted computer search of literature relevent to this study reveals that, in technical institutes and undergraduate institutions, to date at least 341 studies and articles have been produced on academic achievement and student characteristics, 140 on admission criteria and academic achievement, and 2,807 on employment patterns. Of these, 38, 35, and 16 studies, respectively, were identified as major factors. Several other investigations, seminar discussions, and unpublished reports have presumably been documented. Even with all of these efforts, a great deal of research remains to be accomplished that directly concerns textile design education, especially as it relates to the polytechnics and universities in Nigeria.

This synthesis of literature concentrates on and includes relevant materials from books, journals, newspapers, professional organization conference reports, and government policy reports. In order to ensure that the review is consistent with both the purposes and research questions of the study, the sequence of its presentation is as follows: (1) the concept of undergraduate and polytechnic education in Nigeria, (2) admission criteria and student

academic achievement (3) examiner and student characteristics in relation to student academic achievement, and (4) relationships among students' academic achievement, type of institution, and employment after graduation. The chapter concludes with a brief summary of the related literature.

The Concept of Undergraduate and Polytechnic Education in Nigeria

Textile education in Nigeria has an unbroken tradition of skills going back to the Middle Ages when the apprenticeship system developed. No longer a private enterprise, textile education is a huge government venture that is the result of a progressive evolution of the government's complete and dynamic intervention and active participation (41). The federal government of Nigeria has now adopted education generally as an instrument par excellence for national development. In short, education has been linked with culture. Hall (49, p. 376) describes culture as the fabric of ideas, beliefs, skills, tools, aesthetic ideals, methods of thinking, customs, and institutions into which each member of any society is born. Taiwo (109) believes that education is taking place when cultural components are transferred from generation to generation.

In the contemporary age, both culture and education are referred to as technology; Hall (49, p. 378) further

states that this term was derived from the Greek word τεχνη, technē, meaning art or craft, which is the industrial process that succeeded craft operations. Krazberg and Pursell (64, pp. 4-8) support Hall's idea in their investigation into the traditional life of medieval people, and they report that the technē of the Greeks formed the basis of all forms of crafts.

At the fifth commonwealth education conference held in Nigeria in 1966, the focus was on crafts education in higher education institutions. A strong recommendation was made to the commonwealth secretariat for a reappraisal of this type of education (73). In a seminar held in 1973 in Nigeria, attended by distinguished education experts, a decision was made for all educators to approach education with a view to emphasizing career goals (40, p. 48).

The current Nigerian National Policy on Education bases its philosophy on the development of individuals into sound and effective citizens and on the opportunity for an equal education for all citizens of the nation at the primary, secondary, and tertiary levels, both inside and outside the formal school system (41, p. 4). In the *National Policy on Education*, an appreciable amount of space is devoted to discussions of both technical and undergraduate types of education (41). Section 5, Item 32 of the document clearly spells out the aims of higher

education in the Nigerian context. It is for (1) the acquisition, development, and inculcation of the proper value orientation for the survival of the individual and society; (2) the development of the intellectual capacities of individuals to understand and appreciate their environments; (3) the acquisition of both physical and intellectual skills which will enable individuals to develop into useful members of the community; and (4) the acquisition of an objective view of the local and external environments. To be pursued are teaching, research, dissemination of existing and new information, service to the community, and attempting to make higher education a storehouse of knowledge (41, pp. 14-17).

The document goes further to highlight the optimum contributions of both the polytechnic and the university to national development. Academic programs of universities are developed by committees elected by individual institutions. In the polytechnics, although academic and technical programs are initially prepared by the instructors, such programs are submitted to the National Board for Technical Education (NBTE), a body set up by the government that is responsible for evolving a common national syllabus for all polytechnics. The NBTE invites experts in different disciplines, in addition to some of those who prepared the first draft, to deliberate on a unified national syllabus.

Item 49 of the government document (41, p. 6) states the aims of technical education in Nigeria. These aims are (1) providing trained manpower in applied science, technology, and commerce, particularly at subprofessional levels; (2) providing technical knowledge and vocational skills necessary for agricultural, industrial, commercial, and economic development; (3) providing people who can apply scientific knowledge to the improvement and solution of environmental problems for the use and convenience of humanity; (4) giving an introduction to professional studies in engineering and other technologies; (5) giving training and imparting the necessary skills leading to the production of craftsmen, technicians, and other skilled personnel who will be enterprising and self-reliant; and (6) enabling young Nigerians to have an intelligent understanding of the increasing complexity of technology.

The university, on the other hand, is aimed at training professionals. The academic planning of the National Universities Commission helps in planning programs for new universities. Ashby (14, p. 2) describes a university as a mechanism for the inheritance of the western style of civilization. It preserves, transmits, encircles, and evolves learning. According to Ashby, both academic and vocational training need to be handled by universities.

Several other opinions have been expressed about training in the two kinds of institutions, especially on technical education. Arnold (13, p. 106) asserts that any technical education training should enable technicians to perform duties such as assisting in designing, testing, and modifying products and processes; production planning; writing reports; preparing estimates; and analyzing and diagnosing technical problems that involve independent decisions.

On the other hand, Okafor (87) believes that a Nigerian university must seek to increase the bounds of knowledge through instruction of students, research, and career orientation. It must allow the teacher to teach less and the student to learn more. Finally, it should act as a repository and disseminator of such knowledge.

According to Gagné (46), the most comprehensive and, in many ways, the most thoughtful review of the research on instructional sequence has been provided by Briggs (17), who asserts that, initially, sequencing of instruction may involve very different amounts of learning term. Studies vary enormously in the extent to which objectives of learning are specified. Briggs uses nine categories, ranging from those that provide maximum learner control of the objectives and content to those that involve sequences preplanned by the experimenter to test hypotheses about

particular variables. He concludes that it appears that instructional programs having rule-using and problem-solving objectives, which require successive mastery of intellectual skills, yield more efficient learning when they are regularly sequenced than do those not requiring skill attainment.

In another report, Maclennan (73) states the belief that the main purpose of technician education is industrialization and modernization, thereby strengthening and sustaining a healthy, growing national economy by helping industry to be more effective in the achievement of its main objectives of providing an adequate standard of living. Technician education, he further states, produces the man-power resources that make industry more productive, increasing the volume and improving the quality of the production of goods.

At the inception of the Art and Design Department at Yaba College of Technology, one of the areas of concentration recommended was for the various departments to provide the vocational education that supports industrial training. This concept agrees with the belief of some philosophers and educationists that people should be educated to earn money (70).

Adegbile (3) reports that there has been a scarcity of trained textile personnel in many Nigerian textile mills.

According to a survey carried out in 1980 by the Industrial Training Advisory Committee on Textiles, set up by the Industrial Training Fund, it was found that there were then 132 textile mills serving about 75 million Nigerians. Only 300 Nigerian technologists, 1,000 supervisors, and about 200 managers or assistant managers were employed. The report further claims that 2 per cent of the supervisors had a university education and 12 per cent of the technologists had graduated from the polytechnics.

Albeck (11, p. 11) contends that textile design education needs to be in line with the ever-changing world. Because of the enormous changes in fashion, the instructional methods need to be flexible in order to cope with the situation. Clement (24) says that design education is associated with man's entire life, in the beliefs that order is heaven's first law and that it is design training which may be interpreted as the foundation of all living. The study of how design permeates life, he concludes, is an unending adventure in discovery.

Okeke (88, p. 116) believes that Nigerian textile design education is peculiar and unique to the African concept of education. While patterns on wearing apparel are mostly repeated uniformly on a sheet of cloth of a typical design in European dress, traditional Nigerian textile designs on wearing apparel are treated as a single-unit

piece of art work. Leiris and Delange (68, p. 152) seem to agree with Okeke; they report that many Africans appear to love personal display and do not regard clothing as merely providing protection but as having a definite aesthetic significance which could be for purposes of prestige, religion, or any special occasion.

Wahlman (116, p. 12) appears to support these observations. He reports that Africans in general as well as Nigerians in particular wear textiles in ways that communicate a variety of messages; cloth may be worn for its prestige value or mainly for festival occasions. Therefore, he classifies textile design training in Nigeria into three basic groups: (1) design created during the weaving process, (2) pattern-dyed designs or those added to woven cloth after it has left the loom, and (3) embroidered or appliqued design.

These different types of textile production can only be derived from the type of training available. The Nigerian body responsible for polytechnic educational accreditation (86) has as the general goals and objectives of textile design courses that, on completion of the course, the student should be able to manage effectively a textile design studio, analyze and solve any pertinent problems in textile manufacturing, and understand materials and processes in the area.

Lonard and Utz (72) are of the opinion that any educational program involving behavioral objectives must concern itself with the total learning program. In order to determine the behavioral objectives, one must ascertain what skills, concepts, or mastery is required of the trainees. The skills which the instructors require students to demonstrate upon completion should be specifically identified. This makes the ideas of the instructors more related to those of the students than any external ideas.

Mehaffy (81), however, asserts that the prevailing assumption in educating students is that better teaching theory will result in better learning practices. He calls educators to pay more attention to overhauling the techniques used in teaching people, which may tend to portray the fundamental nature of knowledge.

An examination of the objectives of the two types of institutions considered in this study seems to indicate that little consideration has been given to educational objectives. The works of Mager and Beach (75) are pertinent in this area; they advocate that instructional techniques should involve detailed job descriptions followed by specific task analyses. They identify the task as "a logically related set of actions required for the completion of a job objective" (75, p. 36). In a similar way, Tuckman (112) goes a step further and describes the

technique in instruction as "structural analysis," by which ultimate objectives, stated in behavioral terms, are sequentially analyzed to identify and specify each of the competencies that students must acquire if the terminal objectives are to be achieved.

The research conducted in 1970 by the Minnesota Research Coordinating Unit for Vocational Education (102) found that (1) increasing attention has not been paid to the products of instruction, (2) education has not become more task-oriented so that the tasks have validity for students and actual relevance to out-of-school behavior, and (3) non-verbal behavior in the learning process, which has never been permitted, may provide the concrete experiences for abstract development. Maclennan (73) recalls further that, traditionally, technicians as well as designers learned their skills and technical know-how by observation and word of mouth. The traditional types were trained on the job in a father-son or master-apprentice relationship. The development of mechanization, however, brought the demand for specialist technicians in middle-level occupations between the professional, the technologist, and the craftsman. From a 1979 survey, Adeniran (4) reports that some traditional weaving and dyeing workshops still exist in most parts of the former western region of Nigeria. Interestingly, the textile design institutions set up around

these centers work closely with the workshops so that there is a constant exchange of ideas. Adeniran further confirms that a traditional weaving and loom construction workshop at Ilesha organizes weaving programs which attempt to blend traditional and contemporary ideas as well as to make a practical portrayal of the slogan "Nigerian fabric is the product of the Nigerian loom." The thrust of this study is adequately reinforced by Olufowobi (89).

Although textile design instructional programs in most parts of the world have similar basic principles, the areas of concentration appear to vary from one institution to another. In a survey conducted in 1981 to examine patterns of textile design instructional programs among higher education institutions in the United States, Fix (42) sent a questionnaire to 150 institutions, of which 50 responded. A diversified description of programs from the 50 institutions seems to indicate that there is a wide variety of options in the teaching methods and emphasis in textile design education. Fix believes that the information (42) should be able to provide prospective students and their parents with a wide range of choice of institutions for academic study.

Ozonuwe (93, p. 3) observes that, although the basic elements in craftsman and professional courses are the same everywhere, the specific subject instruction and the mix and

depth of treatment of topics may differ from one environment to another, depending on the needs of both the location and the type of training system adopted. Some of these are the identification of knowledge and skill as well as specific procedures for admitting students. The kind of employment earmarked in program objectives is also usually a factor to consider.

An examination of some textile programs and methods planned for teaching in certain British institutions is relevant. Generally, the courses are concerned with the development of creative art and design skills, the functional and aesthetic value of materials derived from past and emerging technologies, and their application to man. At Leeds University (67), the bachelor's degree course in textile design appears to be intended for those students whose interest in textiles is more artistic than scientific or managerial. The institution's 1979 prospectus indicates that highly skilled designers are produced who, by improving the aesthetic appeal of textiles, can do much to enhance the quality of everyday life. Generally, in a design course, a high level of personal attention is given to studio work and the associated practical industrial applications.

In a typical Nigerian textile design program, students tend to be exposed to a wide variety of ideas and concepts

in examining, analyzing, selecting, and executing various problems in the discipline area. The goal of most of the courses, if condensed, appears to be the production of hand-made textile designers in the areas of printed fabrics, dyeing, woven fabric, and embroidered works, mainly for commercial and household use. For instance, the program of Ahmadu Bello University (32) includes the use of traditional craftsmen who are employed as tutorial assistants for a period of two years. An industrial attachment program is also included as part of students' learning procedure. This program seems to share in common with like programs at other universities and polytechnics an openness of expression, a spontaneity of content, an emphasis on self-direction and individualization, and a certain submersion with the community. Additionally, while their needs differed drastically, the seemingly identical programs of the polytechnics and universities may have resulted from the type of training received by the first generation of instructors.

In addition, a study conducted in 1979 (98) by two final-year students of the Industrial Design Program of Ahmadu Bello University in Zaria, Nigeria, on the instructional programs of some selected Nigerian polytechnics and universities reveals that the textile programs of the two types of institutions appear to be similar both in subject content and methods of learning. Although each school

appears to value design as a legitimate learning mode and each implemental approach was probably creative and sound, it was found that actual practices fell short of expected intent. Furthermore, there was a noted discrepancy between objectives of individual institutional programs and their realization, between a resource-room approach and a true option for on-site learning through designing, and between what is intended to be taught in the two types of institutions. It was also discovered that, although the goals of the institutions, the expressed intents of their programs, and the properties of anti-structure were one and the same--to communicate openly, freely, and creatively with self and others--differences were noted in each of the instructional techniques. Such differences were found to be attributable not to conceptual, philosophical designs but rather to the ability of the individual to act upon options generated by the exchange of previously assigned models.

Ajakaiye (9), however, reports that textile education in many parts of western Nigerian has concentrated mainly on weaving and dyeing techniques. He further notes that, with the increase in the number of commercial institutions springing up in some of the major cities and the faculty development programs established in almost all of the institutions, instructional training for many handcrafted products, including textiles, has taken a new and apparently

improved dimension. In Ajakaiye's view, there are eight major subject areas currently available to textile design students in some higher education institutions in western Nigeria. He concludes that, apart from creating designs, the textile design students of today are also exposed to the whole process of cloth decoration and construction.

Around the background of training concepts expressed so far, apparently there remain some problems regarding the type and extent of training of the professionals and technicians from the two types of institutions. Many observers attribute these problems to various factors such as students' educational background before admission, lack of vocational goals in instruction, and certain other characteristics of both the students and the programs.

At the international seminar on the teaching of textiles held in Nigeria in July of 1977, the concern was with employment needs. Adegbile and Ndadok (2) presented a joint report of their recent study of some textile industries in Kaduna which shows that the problem seemed to be one of quality control of made-in-Nigerian textiles. This problem, which affects the sale of the products, is associated with the lack of a training program in this area of quality control at higher institutions of learning.

Part of this problem also has been associated with the training of university students. In a special comment on

the occasion of the establishment of Ogun State University in Nigeria, Bisi Onabanjo, the governor of that state (90), observed that the role of a university should be to solve the socioeconomic and technical problems of the country. He attributed some of the problems being experienced in higher education to a lack of effective integrating liaison between colleges and industry.

The observations of Ashby (14) are pertinent in this regard. According to him, three major forces are pushing higher education toward vocationalism while the internal heredity of universities retains its non-vocational aim. The mass system of higher education can offer excellence in both vocational and non-vocational programs to be used by employers as screening devices for jobs. Today the universities as well as the technical institutes have been diverted from the true of goal education to one that is false; trainees are not only uneducated for jobs but may also become uneducated for living. Ashby recommends that teacher-student relationships should involve both the vocational and non-vocational aspects of higher education.

Alcorn and Linley (12, p. 84) reinforce the vocational requirement in higher education when they argue that, since human progress depends on techniques as much as upon intellectual stimulation, vocational training adds to the enlightenment of mankind. Without vocational skills and

technological efficiency, education tends to be an exercise in contemplation and abstraction.

As observed in various studies and particularly by Carrick (22), the instructional programs of most textile design departments in Nigeria appear to show that the instructor is the planner, thinker, and organizer of the students' learning activities. However, in some selected situations, certain students emerge as the key figures and wander aimlessly through a series of frustrations in search of problems to solve. They have no skills, no knowledge, no interest. These are the two sides of the coin of textile design education in Nigeria.

The concept of undergraduate and polytechnic education in Nigeria as implied in the literature review appears to indicate that there is a duplication of objectives and goals as well as functions in the two types of institutions. It is also observed that employment objectives are not clearly pursued in the instructional programs. Generally, it appears that not enough difference is created between the two types of education.

Admission Criteria and Student Academic Achievement

When reference is made to admission of students into a particular parogram, the focus is usually on the selection of applicants who perhaps will be able to fulfill the goals

of the course of study. The following discussion attempts to explore and identify various factors, variables, methods, and opinions expressed in the literature on the issue of admission criteria and student academic achievement.

Although there has been much discussion on the issue of admissions, the varied nature of courses, different department and faculty policies, and environmental influences are some of the factors that often appear to produce confusing and inconclusive findings. Wentworth and Lewis (121) suggest that these contradictory findings may be due to the inadequate research techniques that are employed in many of the studies. Therefore, it is important to examine several studies and opinions in connection with short explanations in regard to the directions taken by the findings.

Ajayi (10, pp. 2024-2025) reports that admission to first degree courses in Nigeria is centrally arranged by the Joint Admission and Matriculation Board, which is a government body. The entrance requirements for direct entry are somewhat uniform; they include WASC five credits or equivalents, including two at the advanced level in relevant subjects. Some departments, however, have special or supplementary requirements. A study (10) of admission patterns in most schools of textile design in Nigeria indicates that the latter option is adopted. The trend among universities offering textile design courses is similar.

An example of this is the admission requirements of Ahmadu Bello University (5); these requirements are (1) a minimum of five credits in the WASC or equivalent, one of which must be in art and design, and (2) entrance examination and interview, comprising an evaluation of the candidate's recent portfolio as well as an aptitude test in English composition, drawing, and design.

Ajayi (10) further observes that, apart from the requirements stated above, other criteria are examined. He notes that the course is scheduled for four years and that the pattern of teaching now follows either British or American models. Although the issue of the relationship of the WASC and entrance examination results to the admission of candidates into higher educational institutions has been vigorously debated, Ajayi notes that there has been no consensus on what combination of criteria is probably most effective as a predictor of students' academic achievement in various disciplines.

Several pertinent studies have been conducted on this issue, but certainly not much at the undergraduate level in textile design. Westland (122, pp. 344-352) examined various factors associated with admission criteria and success, and he questions the idea of deciding on what merits selection and success, as it is usually measured. He argues that selection must be clearly related to some

kind of expected performance, but he is skeptical of the measure commonly used in the universities and technical institutes. He contends that what is being done is to select those who are capable of profiting from the least experience of higher education, regardless of the nature of profit. This attitude, he believes, shows higher education as providing an opportunity only for study and intellectual growth but not necessarily to produce graduates.

One of the most recent and very relevant studies is that conducted by Cunningham (27, pp. 27-34). She noted that admission decisions at the undergraduate level are complicated by both the youth and the grade point average range of applicants, yet little research has been done on the relationship between pre-admission variables and outcome. Her study relates college junior-level grade point average, student age, assertion inventory scores, previous organization leadership and membership roles, volunteer experience, and work experience to later performance ratings in an undergraduate field-work program for 83 Bachelor of Social Work (B.S.W.) students. Cunningham reports that undergraduate-level studies on any aspects of admissions are scarce.

Three studies (27, 79, 84) survey schools about their admissions policies; one article (25) discusses the use of admission interviews for new career students, and the other

two studies (79, 84) test the reliability of a rating scale for admissions procedures. Among others cited in this literature review, Duder and Aronson (33, pp. 56-73) have conducted a study that correlates admission variables and educational outcome on the undergraduate level. Their dependent variable is limited to performance in three social science classroom courses. As might be expected, they found a positive relationship between previous GPA and later performance in classwork.

Cunningham (27), however, used a stepwise multiple regression analysis procedure in her study and found that only grade point average and age are significant success predictors. Sex was another factor; younger students with higher grade point averages performed better in the program. These results may have been discovered because the faculty had access to students' previous academic records.

From a similar study, Judy (59) asserts that there are some indications of success in secondary school training that are fairly good predictors of achievement in college. Judy used high school records as a source of information for predicting performance in air force technical training, and he suggests the need for a new look at these records as a source of information for identifying persons who can do well in other post-secondary programs. The findings from this study are strongly supported by Deboer's investigation (31).

From one of the reviews of college admission selection studies, Judy (59) arrived at a mean correlation of .50 between high school rank or grade point average and grades obtained in the first year of college. Using correlation techniques to analyze 13,811 individuals, he found that there is need to expand the predictive role of high school records on air force technical training. However, Wankowski and Cox (118) found that, although the correlation between admission grade and degree was .05 for both males and females, the significance disappeared for students when other personality characteristics were used. In their study Hollen and Saddler (55) discovered that mathematics achievement tests correlate more highly with academic achievement than other entrance measures; they used hierarchical forward inclusion stepwise regression with about six variables. In addition, the use of freshman year grade point average as a predictor improved prediction of students' success in the program in comparison to the college entry prediction alone. This agrees with the findings of an earlier study conducted by Burnham and Hewitt (20), whose research, however, further found that the GPA in any one year of the student's higher education is about as good a predictor as another. Additionally, Belcastro (15) arrived at the same conclusion in his investigation of the selection of prospective candidates for teacher education.

As part of the preliminary work required for the upgrading of fine arts courses at the Ibadan Polytechnic from GCE advanced levels to Higher National Diploma, Afamaefuna (6) used the admission of students within three years as the study period. The WASC, entrance examinations, age, sex, state of origin, and financial assistance were used as predictors for performance at the GCE advanced level. The rationale behind the study was to convince the college authorities that there was a need to start a diploma program based on the performance and consistency of students recruited within the span of three years. Although Afamaefuna found that only the WASC correlated with the GCE results, his report produced information that helped the polytechnic to decide on the establishment of the program.

An extensive study conducted by Sexton and Goldman (101) used categories as well as average grades in each category as dependent variables to compare male and female college students in different major fields. While earlier studies investigated values, attitudes, and personalities of students in major fields, such studies did not investigate the relationship of high school preparation to academic career choice. The use of high school achievement to correlate with academic career appears to agree with the belief of Cunningham (27, pp. 27-34).

Sexton and Goldman's (101) investigation is based on the extent to which grades in high school courses relate to choice of college major and the relationship of the number of high school courses and the choice of college field. The authors argue that high school transcripts should provide unique "non-reactive" information about career choice. One assumption made is that, if there were a relationship between high school grades and major field choice, it might appear that college major field choice is partly determined by the pattern of high school success. By the same inference, one may be tempted to argue that students' high school grades may relate to their achievement in their chosen major field. If, however, the choice of college major field were, instead, related to the number of high school classes in different areas, the choice of a college major might reflect something else. This agrees with the findings of Forrest and Kim (43), who studied a combination of high school and college entrance examination scores as predictors of college performance. Both high school grades and ACT scores were found to be significant predictors of college performance.

This is in further agreement with Ramsey and Schultz's (94) study. They investigated 14 four-year and 14 two-year state-controlled institutions and discovered that a combination of students' SAT scores and the secondary school

record seemed to be the best predictor of academic success in most of the institutions, although the secondary school record was the best single predictor.

A more directly related study was made by Uzuoagba (114), who used the high school internal mock WASC results in art alone from 50 students of 10 secondary schools in Imo State in Nigeria as predictors of how they would perform in various art subjects in higher education institutions. He found that more students who made higher scores in art were admitted to the polytechnic than to the university. He also discovered that, at the end of their various courses, very few of those who were admitted with high scores in art made good grades in their various fields. Sexton and Goldman (101) appear to be correct in their assumption, which may account for the seemingly poor prediction in Uzuoagba's study, that, while the patterns of high school preparation can be used as a predictor of college major, the interaction of sex by college indicates that patterns are different for males and females. A combination of more variables as predictors should improve the association.

It is possible, however, to employ multivariate techniques to analyze data by considering specific categories of high school courses as dependent variables. Cronbach (26, pp. 173-193) points out problems of interpretation

that are likely to arise from an index which combines results from heterogeneous items. When a series of univariate compositions is employed, the differences between groups are likely to be magnified since dependent variables often are intercorrelated. Lambert's (66) 1981 research is pertinent here. He found that family and friend references significantly influenced the decision on whether an applicant was completely qualified for admission.

Two other different investigations record negative results on the relationship of high school grades, gender, and all other entrance measures used as predictors of academic success. These studies conducted by Hoyt (56) and Burnham and Hewitt (20) point out that most of the investigations made so far have been limited to an almost exclusive reliance on academic data. The negative correlations were accounted for by many factors.

In Nigerian higher education institutions (and perhaps in many other parts of the world) some of the factors that are consistently responsible for admission criteria, which have not been extensively researched, are financial and physical capabilities of the institution, availability of qualified staff, quota allocation system, and a number of other non-academic factors. In a study organized by the academic department of the registry (100) at Ahmadu Bello University early in 1979, it was found that, because of some

of the factors outlined above, some qualified students of certain categories in the Federation may not be able to secure admission into the School of Basic Studies in that year. A similar reason was given by the admissions department (5) of the Ibadan Polytechnic, where, because of the state's government policy, a certain percentage of the positions in the School of Basic Studies has to be reserved for development needs in certain areas. Reports from many more institutions across the country indicate that the pattern is perhaps almost consistent.

It is important to explore other relevant studies on the issue of admission so as to develop an approximate reason for the outcome of this study, based on the variables used, the type of statistical procedure, and the conditions under which the study was conducted. An institutional research study by the University of Illinois (82) was aimed at selecting students who are most likely to succeed. The procedure developed was to use high school percentile rank and the American College Test composite score (ACT:C), weighted to predict first-term grade point average. The purpose of the study was to determine whether the policy of determining admission priority contained an anomaly that allowed students to obtain a qualifying score for admission. The results of the study suggest that students who rank in the lowest quarter of a high school class and

who have ACT:C scores of 15 and below can be identified as having a very poor chance of academic success.

A different dimension of the issue of admissions was experienced by the Fine Art Department of Ahmadu Bello University in 1964. Taylor (110) conducted an investigation on the effect of internal and external centers on the admission possibilities of candidates. As the admissions officer of the department, Taylor organized one center in Zaria, where the university is based, and another in Ibadan, which is roughly 600 miles away. Surprisingly, Taylor found that candidates from the Ibadan center, apart from the shortcomings associated with their entrance examination procedures, performed much better than those located at the Zaria center. He concludes that the results seem to suggest that distances experienced in locating admission centers away from the environment where the institution is located appear to have no effect on the performance of eligible candidates for admission to the Fine Art Department.

The research conducted by Burdick and Schwartz (19, pp. 117-123) on economics students is different in that it cuts across reports of other disciplines. The researchers aimed at analyzing various methods connected with enrollment of students based on past academic performance as well as demographic variables. A model was developed which could be used to aid revision of admission standards or the counseling of students and further predict their success

or failure. Furthermore, in order to interpret the model, student profiles were created. The findings are that the students' pre-enrollment academic achievement and characteristics can be used to predict their success in college.

This research is in line with studies by Stake and others (105) as well as Holder (53, p. 166). These two studies, in addition to other factors, agree that students' pre-admission intellectual potential as well as sex tend to be more related to academic performance than any other student characteristic. However, a different dimension of interrelationship of paper qualifications of applicants and the judgment made about them by the interviewers are both the independent and dependent variables used in a study by Abercrombie and others (1) in selecting students of the Bartlett School of Architecture at University College in London. Interestingly, a very high correlation coefficient was found.

Statistically, Weitzman (120) examined both the effect of the selection process on the validity of the Scholastic Aptitude Test and what such validity might be if all colleges were to use a common standard of academic achievement. The result indicates that, (1) for this criterion, the SAT may have a predictive validity of .64 and an incremental validity over the high school record of .16 and, (2) for the usual criterion, the selection process may have a profound

effect on the relative predictive validity of the SAT and the high school record. The conclusion is that the SAT may indeed be, as intended by its developers, a highly valid instrument of selection. Hackman and Thomas (48), however, discovered in their investigation that the traditional admissions criteria being used by most researchers (such as those previously reviewed) may predict success only for certain types of students and that course grades may have different meanings for different groups.

Finally, the study conducted by Kinsel (62) on freshmen student profiles administered instruments such as a reading test, omnibus personality inventory, and the new college entrance questionnaire to 50 freshmen. A negative correlation was found when the results of these test batteries were matched with SAT achievement scores. This finding is contrary to most of the previous research on the use of the SAT as an academic predictor. Kinsel concludes that several explanations responsible for this finding could be deduced from the non-academic effect as well as the data collection methods. The major factor seems to be the systematic method of selecting subjects for the study.

Examiner and Student Characteristics in Relation to Student Academic Achievement

No doubt the issue of examiner and student characteristics in relation to student academic achievement has been

vigorously discussed in recent years. Yet, there are discrepancies among the significant relationships of the three variables. The deviation of correlation coefficients from one study to the next gives evidence that further research is required. This is especially true in view of the need to utilize educational resources more effectively (39).

An important problem for the educator is reconciling the discrepancy between students who do not evidence markedly different levels of scholastic aptitude but do display marked performance differences in the classroom. Knight and others (63) state that the discrepancy could be a result of several factors: (1) it may reflect a fallacious tendency among educators to assign grades defined by predetermined normal letter grade distribution, irrespective of differences between classes, and (2) it may also be due to the ordinal level of measurement achieved by most testing techniques and the subjective aspects of grading in general. Knight and others further contend that, although these difficulties can be partially circumvented in graduate courses because classes are usually smaller and personal interaction with the student is possible, student achievement and motivation remain a formidable problem at the undergraduate level.

Wilson (124) found that, from the point of view of developing a viable institutional rationale for defining

and evaluating grading standards, it is useful to recognize that maintenance of existing grading practices does not necessarily connote stability in grading standards. It is relative to class norms and therefore there is a useful distinction between a planned and an unplanned grading standard. It is because of institutional practices, with respect to the evaluation of student performance, and their serious personal and institutional ramifications that Wilson suggests that it is difficult to find a common basis for the appropriateness of such evaluations among several institutions.

In their study of the pattern of examiners' evaluation of students' work, Swarz and others (107) found that cognitive achievement does not possess strong explanatory power, and they further argue that a good measure of cognitive achievement must consist of items that effectively discriminate among students. Trowell (111), however, believes that one of the most salient proposals for reform of the method of judging students' design and crafts work is to look at the work in terms of a whole process of planning the shape of an object in a way which is not only functionally satisfactory but also pleasing to the eye and touch; this satisfaction, she contends, coupled with the evaluators' characteristics, tends to produce some significant results.

Carrick (22) performed an experiment aimed at examining the reliability of the grades she awarded to her final-year textile design students as perceived by guests at the students' final-year exhibition. A visitor's book was placed at the door of the exhibition hall, and an attendant reminded visitors to comment on the standards of the works. Three categories were used to evaluate the 11 students; 62 per cent of the visitors who signed the book also evaluated the students' standards of achievement. The order in which 52 per cent of these visitors ranked the students' works agreed with Carrick's evaluation. To an extent, the result seems to indicate that there is an agreement between the perception of some members of the community and the instructor's grading of students' work. Obviously, the degree to which the work pleases the observer controls the response.

A related problem is found in the attempt to assess learning through examinations, which, according to Knight (63), are crude measures at best. A multitude of factors other than learning effect tend to test performance, e.g., motivational variables that are reflected in test grades. Knight (63) further asserts that success may then be conceived of as "learning how to learn as well as learning course material. Conversely, failure is often the result of inadequate study and performance skills and not lack of

aptitude" (63, p. 12). Consequently, one may infer that failure could be attributed to the structure of the course rather than to the student. Trowell (111) contends that some students remain disinterested and unaffected regardless of the course structure employed; such resultant failure obviously can be appropriately attributed to the student.

Oru (91) believes that a person schooled in a given orientation (such as the behaviorist or psychoanalytical) will tend to view design phenomena from the purview most palatable with the preferred orientation. Margolis (77), however, asserts that no single logical difference exists among scientific, moral, and aesthetic judgments. He further contends that statements about aesthetic values are actually subjective interpretations of any information provided. Eicher (35) is of the opinion that the degrees to which textile design works express the emotions and skills of their makers are the criteria used to judge the works. Design theories used by examiners may be subject to different interpretations (29).

In further research, Knight and others (63) conducted an experiment to determine whether the programmed student achievement (PA) effect is replicable and analogous to avoidance conditioning. They also wanted to know whether the effect of PA contingency could be generalized to

performance in other courses taken concurrently. They assumed that a student failure in a classroom situation was a result of inadequate performance skills rather than lack of ability; therefore, they employed the PA procedure, which requires student evidence of 100 per cent mastery of discrete units of material. The performance of PA students was found to be significantly superior to that of control students. The implication of the experiment tends to be that, if achievement contingencies are utilized to improve performance of students, a negative skewed letter grade distribution is both expected and desirable.

From a different standpoint to some of the discussion reviewed thus far, three different opinions have been expressed. In a critique of the grading system at the University of California at Santa Cruz (113) it is argued that pass-fail grading coupled with written evaluations by the instructors and evaluators appears to make the educational experience more realistic to the students' needs than a single pseudo-qualitative letter grade.

A more recent review of literature on student characteristics and their predictive potential for academic achievement was conducted by Margrain (78). She discovered that the results are not optimistic, often contradictory, and on the whole account for little variance beyond that accounted for by tests of intellectual ability. According

to Margrain, since researchers often use different performance criteria, the findings are not comparable. Although there has been much complex, diverse, and unique work done on personality and motivational factors, no clear trends have emerged. Other factors investigated are home and class background, study habits, previous withdrawal, and expectations. The review concludes by demonstrating the usefulness of the cluster analysis approach, which indicates groups of students with similar patterns of characteristics.

A'hearn (7) reports that research covering the past 40 to 50 years has demonstrated correlations of approximately 5 per cent between intellectual predictors and academic achievement. When researchers incorporate non-intellectual characteristics in these studies, their addition has contributed little to the prediction and explanations already demonstrated by intellectual criteria. However, more recent research by Entwistle and others (38) using similar independent variables resulted in increased prediction and explanation of academic achievement. Furthermore, in his study A'hearn (7) found that the best predictor of future achievement is a measure of previous achievement.

In the last five years there has obviously been a preponderance of research on this issue. Wilson (123)

asserts that, in the prediction of student performance, research efforts have produced rather unexciting conclusions. Entwistle, Entwistle, and Cowell (38), using students from universities, polytechnics, and colleges of education, found that, although the correlation between advanced level General Certificate of Education (A-level) and academic performance was .32, the addition of other characteristics only boosted the value by .06 (.38); this finding is in agreement with most studies conducted in America. Smithers (103), using more sophisticated statistical methods, was able to account for 25 per cent of the variation in student performance. Miller (83), however, summarized research results prior to 1970 that show that most studies have not been found to provide reasons for much variance not accounted for by tests of intellectual ability. In a conclusion as far back as 1968, Hamilton (50) stated that prior academic performance was unreliably correlated with achievement compared to non-scholastic variables. This conclusion is quite opposite to most of the earlier research findings on the subject reported in this literature review. Yet, Entwistle (37) found that prior academic performance was the best predictor of academic achievement, especially in undergraduate study.

Miller (83) summarizes that the comparison arises because different performance criteria are used--e.g., in

one case, degree class or mark; in another, first-year grades--and some researchers use less academic estimates of success such as withdrawals or dropouts. Also, the universal comparability of marks and failure rates is illusory, the range of marks used depending on subject, faculty, and institution. Another factor, Miller says, in research comparisons is the variability associated with different student groups, which appears to hold the key to more meaningful prediction of academic performance.

In Nigeria, many researchers have used non-scholastic predictors for the academic achievement of students. Adegbile and Ndandok (2) recall that, in 1979, half of the polytechnic students in the south lived off campus whereas 20 per cent of their counterparts in the north lived on campus. This was assumed to have accounted for the discrepancies between student achievement observed in the two areas.

Ryle (97) found that excessive parental pressure, a poor early relationship with parents, or divorce influenced students' grades. Yet, Dale and Miller (28), in comparing the influence of an urban and rural background on academic performance, found that urban arts students from single-sex or coeducational schools did better than their rural counterparts. Overall, the city students did better at the first-year level, and students from intermediate sized towns did less well than city or rural students.

Other factors relating to academic performance include study habits and methods. Wankowski and Cox (118) found that these factors correlate with success more highly at polytechnics than at universities, but hours spent studying do not correlate with success. Attendance at lecturers' tutorials had no relationship to success. Smithers (103), however, found that good study habits seem to facilitate performance.

In order to determine the relationship among various measures of ability, achievement, and personality, data from 76 volunteer subjects were factor analyzed by Eno, Woehlke, and Deichmann (36). Among the measures used is the Level of Aspiration measure developed by Warrell (119, pp. 47-54), which is similar to part of the instrument used in this study.

The analysis yielded two factors, one representing the general intelligence factor and the other an achievement factor. No support was found for the notion that certain personality variables are related to achievement, nor for the independence of fluid and crystallized intelligence at the college undergraduate level. The implication of this study coincides with that of Tabbron (108) and Entwistle and others (38).

Ostberg (92) used non-academic criteria to determine whether these would relate to academic achievement. His

problem was to discover whether a statistically significant relationship existed between the manner in which academically and socially similar students pay their college expenses and their collegiate academic performance. Ostberg found that no statistically significant relationship existed between how students finance their education and their academic achievement, if they came from academically and socially similar backgrounds. This tends to agree with a study recently conducted at North Texas State University (104).

These two studies are closely related to that conducted by Cheng and others (23). They define streaming as the placement of pupils in groupings according to a criterion such as ability, achievement, interest, need, or a combination of these factors. In regard to the influence of students' backgrounds on educational achievement, these researchers tried to find the relationship among streaming and academic achievement, ethnic background, social origin, and future placement of students. They found that streaming has some remote relationship with academic achievement.

Two separate studies were conducted in Nigeria within the last five years that are pertinent to the literature on student and examiner characteristics in relation to student achievement. The Department of Fine Art at Ibadan Polytechnic in Nigeria wanted to know the extent to which

some personal interest of instructors contributes to the pattern of marks which they give to students. Daramola (30) designed a 10-item questionnaire based on most of the aspects of crafts that are usually assessed by examiners. This was distributed to all of the 15 instructors and 94 students in the department so that they could rate their opinions. At the end of the year, when instructors had evaluated the students' course work, the scores of the instructors were matched with the opinions expressed by both instructors and students at the beginning of the year. No relationship was found between the patterns of marks and the earlier opinions of the instructors and students. Nevertheless, Edmiston (34) found a slight significant correlation when he correlated teachers' self-concept with students' academic grades.

In the second study, Jenkins (57) supervised a group project assigned to second-year ordinary diploma ceramic students at the Yaba College of Technology. Selected student background characteristics were analyzed in order to determine their effectiveness as predictors of the students' end-of-year success. A group of 14 students was involved in the project. The student background factors that proved to be most effective as predictors of student success are sex, race, WASC grade in art, and place of origin. This study is reasonably in agreement with similar

ones conducted by Burton (21, p. 10) and Jensen (58), both of which also found that the race of the examiners has no influence on the marks that they give students.

Finally, one of the exploratory studies that used student characteristics, intelligence, and type and size of institutions as descriptors for academic achievement was conducted by Mallinson (76). He found that student IQ and family background relate most significantly to academic achievement. Success was not related to either type or size of institution attended. Students of the same IQ had similarities in grade attainment irrespective of the type of school attended. This study is very crucial to certain aspects of the present study because, interestingly enough, 10 years after Mallinson's study, Hackman and Taber (48), who used a different statistical procedure, arrived at the same statistically significant results.

The literature reviewed thus far in this chapter attempts to show the variability of results among researchers. The large amount of variance unaccounted for in student performance suggests that different statistical techniques, choice of predictors, and location (as well as specific situations that warrant a study) have different effects on the outcome. Several inferences are made to the probability that students may not be the role arbiters of their success. Their teachers' ability, personality, bias,

methods, and numerous variables associated with the institution also make statistically significant contributions to a more complete and accurate prediction of academic performance.

Relationships among Students' Academic Achievement, Type of Institution, and Employment after Graduation

Although several studies have been conducted on graduates' employment alone, a recent computer search disclosed only seven studies using factors that combine academic achievement, technical education or undergraduate study, and the labor market, employment opportunities, or employment patterns. Further investigation, however, revealed the existence of some related comments, discussions, and research reports.

As more and more students enter institutions of higher education and as higher education becomes increasingly important to the maintenance and advancement of society, more studies have been carried out regarding academic achievement as related to employment. Only recently, however, have other factors been investigated that tend to affect employment.

Most of the works on the effects of higher education focus on changes in student values and attitudes which occur during college, which can be attributed to the college experience, and which tend to affect students' lives. In

regard to student occupational choice, colleges may make their most significant and measurable impact.

Within the last eight years, Karmel (60) conducted a research study that investigated the relationship between education and employment expectations of students as well as certain easily obtained bibliographical information. Although Karmel found that high grade point averages are significantly associated with high expectations for employment among secondary school students, no such correlation was found for college students. The report is congruent with the suggestion of Livingston (71) and the evaluation of Wingard and Williamson (125).

Brazziel (16) conducted a study to identify differences that might be attributed to basic education experiences in the post-training performance of two groups of a program's graduates. Ninety men--45 in each group (combined general and technical education, Group A; technical education alone, Group B)--completed Manpower Development and Training Act courses in Norfolk, Virginia. Those who enrolled in Group A spent half of each day receiving systematic instruction in reading improvement, language arts, number skills, occupational information, and human relations skills and half of each day learning a technical skill. Group B spent half of each day in technical classes plus an hour a day in supervised (but not guided) study. Two control groups

were also provided. In a follow-up interview a year after training, Group A trainees were found to have surpassed those in Group B in terms of employment, average weekly wages, and promotions on the job. The implications of this study are that both academic and technical aspects of training appear to be required in order to obtain a better employment situation.

A slightly different investigation was conducted by Stewart (106), who focused on the effect of institutional reputation, location, and the executive employer's alma mater on the employment of baccalaureate graduates. He sought evidence in order to determine whether employers were likely to be influenced in their employee selection by institutional prestige, accreditation and location, or by the alma mater of the corporate president or personnel officer. Using a bivariate t test, response frequencies, and chi-square analysis, the data revealed that the accreditation status of the baccalaurate degree-granting institution of a job applicant is a very significant factor in employee selection, although institutional prestige and location were found to have no major influence in hiring decisions. Similarly, the prestige of the employer's alma mater was not a major factor in employee selection in relation to prestige, accreditation, or location of the candidate's alma mater. Fuehrer (45), however, found that

no statistically significant relationship exists between academic enrollment or performance and employment.

In another study aimed at identifying criteria necessary to ensure successful employment of fashion merchandising students in management positions, Hartman (51) used chi-square analysis to find that employers want to hire graduates who require only small investments (on-the-job training or money) to incorporate them into the producing work force. Although adequate practical training and limited earning capacity have been found to be factors considered for employment of graduates, Sexton and Goldman (101) found from their study that academic achievement is not a good predictor of salary grade.

Salihu (99) conducted a survey study of eight textile mills in Kaduna and Kano, Nigeria, to determine the number of both university textile design graduates and polytechnic graduates who were employed during a three-year period and to relate employment to institutional training. He, however, found that there was no consistency in the way the graduates of these institutions were employed. He could not draw any inference regarding the educational background of the students as an employment factor. He therefore concludes that other non-academic predictors may have a greater effect on graduate employment. In contemporary research reported by the Industrial Research Institute in

Oshodi, Nigeria (96), family background, age, and referees' recommendations were found to affect employment of textile students. A similar finding was recorded recently by the Vocational Skills Improvement Unit of the Ibadan Polytechnic (115).

Three related types of assessment studies were conducted on appraisal of instructional program effectiveness, factors associated with high job placement, and the relationship of family status on student employment. In the first study, Kuznik (65) first analyzed the result of 1966-1972 graduates and of 1972 graduates in particular. It was found that 92 per cent of the graduates were employed; of these, 82 per cent were employed in the fields for which they had prepared in college, and 88 per cent were employed at the mid-management or semi-professional level. Most of the graduates remained in the rural area. The report clearly shows that the academic instructional program as well as the achievement of the students positively relates to their chances for employment. The report further states that employers have higher opinions of the program.

Gaude and Hotard (47) correlated post-high school occupational level and job success with variables such as sex, race, school achievement, further educational training, and parental educational-occupational levels for 265 urban slow learners (IQ range 70-90) who graduated in either 1969 or

1972. Data on academic achievement, demographic factors, and students' interests were obtained from cumulative school records and supplemented by occupational information obtained during personal interviews with students. The results indicate that slow learners were able to obtain employment, although occupational levels and earning capacity were limited. More males, whites, and higher IQ slow learners found jobs immediately after high school graduation. It was also found that academic achievement, school interests, and pre-graduation vocational interests are not long-term predictors of employment success or occupational level. Finally, parents' educational and occupational levels appear to be directly related to the employment success and occupational levels of slow learning high school graduates.

McKinney and Salster (80) synthesized a comprehensive literature review and case studies of three community colleges and one technical institute with the aim of determining the economic and educational factors that relate positively or negatively to the successful placement of students who have completed post-secondary vocational programs. Data gathered through interviews, on-site observations, and an examination of documents at each institution were used to characterize the colleges in terms of service district population, area employment rate, facilities, enrollment,

and program offerings. The aim was to rank order the colleges in terms of student placement rates in jobs related to their fields of study and to determine the relationship of the colleges' institutional and contextual characteristics with their placement rates. Selected findings revealed that the community and labor force factors associated with high placement rates include area employment, availability, the level of the community's economic development, and the absence of other post-secondary institutions in the service district. However, institutional factors which were associated with high job placement rates include commitment to job placement and being responsive to present and future labor needs.

As an immediate support of the view that academic qualification does not seem to influence obtaining a program-related job, Freeman (44) conducted a study comparing academic achievements, demographics, and employment characteristics of a random sample of co-op (academic and industry) graduates. It was found that graduation from technical programs, either co-op or not co-op, had little influence on students' ability to secure a program-related job; however, participation in the co-op option had a great impact on quick employment of graduates.

An investigation conducted by Madugwu (74) on the type of employment that students of textile design obtain

after graduation reveals that about 58 per cent of those who graduated from Ahmadu Bello University's program between 1968 and 1970 found teaching appointments. Because Madugwu observes that this figure does not reflect the objectives of the program used in training students, he calls for further investigation of other factors which may tend to explain the findings.

This need seems to be partially answered by the study of Hind and Wirth (52, pp. 50-70), who hypothesized that graduates of selected universities tend to use more demographic as well as academic factors to secure employment rather than academic achievement alone. While the correlation of the academic factor was 32 per cent, it was increased by 20 per cent when the demographic factors were included. It was also noted that the students' choices and their attitudes toward academic subjects account immensely for this difference. This result is in line with the indication of the study by Reiche and others (95), who conclude that student self-descriptions on a typology test of academic orientations are associated with different profiles of both achievement motives and work values.

Three related studies, using fairly large populations, were undertaken by Brush and Schoenfeldt (18), Kelso (61), and Lewis (69). The first part of all three studies concentrates on and explores the relationship between measures

of vocational interest, life history data, and two major educational criteria: performance and number of courses taken by area.

A university sample of 1,900 students was the population of Brush and Schoenfeldt's study (18). Canonical correlation analysis was used to uncover and to describe the major relationships between the variable sets. The largest and most important dimension that emerged is a general academic achievement dimension. The overlap of indices of variance suggests that background data rather than vocational interests exhibit a stronger relationship with educational criteria.

In the second study, Kelso (61) used data provided by 1,695 Australian primary and high school male students to examine the extent to which school grades relate to stages in vocational development. The result partially suggests that scores obtained in college by students and stages in vocational educational development could slightly contribute to employment choice. Walsh and Hanle (117) agree with this finding.

Lewis (69), however, tries to relate admission grades to academic achievement and employment. Data that include academic aptitude at the time of admission, the record (GPA) during the course of study, and the level of occupation were collected for 619 male college graduates. The

statistically significant relationship indicates that the graduates who have higher aptitude scores (as compared to those with lower scores) are more likely to report higher levels of occupation. Lewis concludes that the implication is that the ability to achieve high scores on a typical college admissions test and graduation examinations appears to have a strong relationship with occupational success.

Adeniran (4) reports that there appear to be poor training facilities and employment opportunities for textile design students in Oyo State, Nigeria. Her investigation suggests that the type of training given to students bears little relevance to what is required in employment situations.

A further search into the literature tends to confirm what has been earlier identified, but from another angle. Muchinsky and Hoyt (85) note that, unfortunately, it is commonly assumed that there is a direct relationship between academic achievement in college and occupational success. In addition, they maintain, employers frequently use grades to judge the desirability of applicants without necessarily considering the relationship of grades to work requirements. Muchinsky and Hoyt, like some other researchers, found that academic grades have a low relationship with occupational success. They summarized their study by saying that preparing students for occupations will need to be verified

further in regard to textile design education. Kelso's (61) investigation, however, supports some views that vocational development, as reflected in vocational choice, is a positive function of scores obtained by students.

Further still, Holland (54) is convinced from his research that vocational commitment is linked to the success of college students in terms of academic accomplishment and general happiness with their academic pursuits. He argues that the student's choice of a major in a specific course of study and the actual pursuit of that course should be related to some measures of achievement and satisfaction in the academic pursuit, the related vocational training, and the subsequent career.

Holland's study may have some validity if one considers the fact that many factors affect vocational choice. As Hoyt (56) contends, intellectual accomplishment as reflected by grades may be a worthy goal to be valued in its own right, but grades should not be used seriously as a forecaster of professional success. Hoyt believes that both academic and non-academic factors should have a proportional relationship with student employment. He concludes that, as a general belief, the best predictor of future behavior should be similar past behavior, but it may be erroneous to believe that there is a substantial relationship between academic performance and subsequent occupational performance.

Summary

The issues of a textile education within higher education as presented in this literature review tend to suggest that behavioral research symposia, seminars, and academic publications will have to continue exploring various aspects of it for some years. In particular, it has been revealed that textile education at the polytechnics and universities in Nigeria seems to lack separately defined objectives and goals. Additionally, most of the findings on admission criteria, student achievement, student and examiner characteristics, and student employment after graduation often appear to be inconsistent, inconclusive, and confusing.

However, the review of the literature has been able to associate this confusion with several factors, such as inadequate as well as inconsistent research techniques used by many researchers, different locations of research, variability of subjects treated, and content validity factors. What this review seems to suggest is that, inasmuch as there is an enormous need to pursue more investigation of many aspects of textile education, particularly in Nigeria, one would still expect that the findings of such studies are not likely to be absolutely the same.

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CHAPTER III

PROCEDURES FOR COLLECTION AND TREATMENT OF DATA

Introduction

This chapter of the study presents the methods and procedures used in the selection, collection, and treatment of data. The institutions from which the students were selected, the variables, and the instrument used are described. Areas discussed are population of the study, the survey instrument, procedures for the collection of data, and the steps taken in treatment of the data.

The study was designed to determine the possible differential effects of the alternative training patterns of handcrafted textile design students in the polytechnics and universities in Nigeria on the scores in courses for their final-year training as well as the type of first employment that the students secure after graduation. No experimental design was necessary since the criterion measures were both textile design final-year scores of students who graduated in 1980 from some randomly sampled polytechnics and universities in Nigeria as well as the types of first employment which such students secured after graduation. The predictors are West African School Certificate (WASC) scores in fine art, scores obtained

during the entrance examination procedures at the point of entry in the 1976-1977 academic year, first-year examination scores, and certain student and examiner characteristics.

Population of the Study

The population is textile design students in all the polytechnics and universities in Nigeria that offer courses of study in that discipline. The sample is first degree and HND graduates of both types of institutions who completed their study in 1980. A geographic sampling is used based on the former regional distribution of Nigerian society into the North, West, East, Midwest, and Lagos (the federal capital). The 13 originally well-established universities (see Appendix A) and 24 polytechnics or colleges of technology in 1980 (see Appendix A) are also divided into these five regional areas. Those educational institutions that offer courses in textile design were randomly selected from each region. The technique used is to give separate numbers to each of the polytechnics and universities in the selected regions. These numbers were written on separate pieces of paper which were mixed in a container, and one polytechnic and one university were drawn for each region, resulting in a total of five universities and five polytechnics, as follows: (1) East--one polytechnic and one university, (2) Lagos--one

polytechnic and one university, (3) Midwest--one polytechnic and one university, (4) North--one polytechnic and one university, and (5) West--one polytechnic and one university.

From each of the above institutions, all final-year textile design students who were admitted in 1976 and who took final-year examinations at the end of the 1980 academic year are used as subjects. All others outside this category were eliminated. In addition, information concerning the examiners who evaluated the students' work in the final year was collected. Scores of 142 students who sat for the final-year examinations in the two types of institutions were collected. These two groups of subjects were selected on the assumption that they are the valid source from which adequate information required for the study could be collected.

The Survey Instrument

Since the types of data required were directly dictated by the contents in the official files of the subjects for the study, a sample form was developed that incorporates all aspects of information needed. This form was distributed to members of the candidate's dissertation committee for improvement. After their comments were received, a factor analysis was performed in order to group variables that were either moderately or highly correlated

with one another. According to Borg and Gall, "factor analysis helps the researcher to get rid of unwieldy numbers of variables by providing an empirical basis for reducing the variables to a few factors. These become manageable for data analysis"(1, p. 504).

After conducting the analysis, a final instrument (Appendix B) was formulated. The instrument, which is a 25-column matrix, comprises information on the students' scores and characteristics, the types of institutions, examiners' characteristics, hour allocations to certain subjects, and the types of first employment secured by the students after graduation. This complete table of the data could be useful to future researchers who may be interested in using the data in an alternative way.

Originally, it was thought that validity, stability, and reliability would be verified; after the data were collected, however, it was discovered that this exercise was unnecessary because the stability, reliability, and validity of the information required had already been very well established. According to Borg and Gall (1, p. 557), this situation is not unusual with randomly selected quasi-experimental research.

Procedures for the Collection of Data

At the early stage of this study, a letter seeking approval and financial support from the federal government

of Nigeria to conduct the study was mailed to the Permanent Secretary of the Federal Ministry of Education, Scholarship Division, in Lagos (Appendix C). This request was strongly supported by two separate letters from the researcher's major advisor (Appendix C), the second being a reminder. Official approval was eventually received (Appendix C), and a trip to Nigeria was made to collect the data.

Prior to the actual collection of data, an advance letter (Appendix D) was mailed to each chairperson of the various educational institutions explaining the purposes of the study and seeking their permission and cooperation for the release of the information required. The content of this letter did not request a reply from the chairpersons but only informed them that the researcher would visit them within a specified period of time. However, one of the chairpersons wrote a verification letter (Appendix D) commenting on the perceived usefulness of the study as it related to his own institution. The collection of data was accomplished within the specified period stated in the transmittal letter.

In addition, a list of various categories of employment that are available to students after graduation was compiled, and the information about student employment was collected from the "Manual of Textile Workers" (10),

follow-up lists from various academic institutions selected for the study, the Federal Ministry of Establishment, and the membership lists of the Secretary of the Industrial Designers' Association (6) and the Secretary of the Textiles Institute, Nigerian Section (7).

Apart from the instrument, a copy of which was used to collect data from each institution, the research questions prepared to guide the study were constantly referred to so as to establish a reassurance that adequate information required to answer the questions was being collected from all of the institutions.

Information concerning 142 students and 38 examiners was collected. In addition, a synopsis of the programs of each institution, including the number of hours allocated to individual subjects, was collected. Finally, the place where each student secured his or her first job was obtained from the sources cited previously. The complete list of information was collated and taken to North Texas State University in Denton for analysis. The Statistical Package for the Social Sciences (4) was run on a Release 9 computer system.

Treatment of the Data

As stated earlier, the design of this study is aimed at finding correlations among certain variables. In a situation where there are many of these variables, a multiple

regression analysis is considered to be the most appropriate statistical procedure.

Several authors have commented on the relevance of this type of procedure, especially where a phenomenon of less perfect correlation occurs. Borg and Gall (1, p. 438) assert that multiple regression is chosen by researchers who aim at identifying variables that forecast academic and vocational success. They further state that the prediction studies provide researchers with three types of information: the extent to which a criterion behavior pattern can be predicted, data for theory-building about possible determinants of the criterion behavior pattern, and evidence regarding the predictive validity of the test that is correlated with the criterion.

Roscoe (5, p. 21) notes that regression analysis permits prediction with a special degree of precision. He further states that the techniques of multiple regression enable the behavioral scientist to use his knowledge of two or more independent variables to predict scores on a single dependent variable with greater success than is possible with a knowledge of a single independent variable (5, p. 362).

Cunningham (3, p. 30) concludes that multiple regression is generally used when there is an attempt to predict outcome with lineal independent variables. This procedure

identifies those independent variables that are the most strongly related to the dependent variable while holding the effect of other independent variables constant. This ensures avoidance of contamination by interrelationships between independent variables. The concept is absolutely in compliance with the study conducted by Sexton and Goldman (8, p. 36).

Tatsuoka (9, p. 280) reinforces the various researchers' beliefs when he reports that the most widely used of multivariate procedures in educational research is multiple regression analysis. He concludes that the stepwise procedure is probably the best, explaining that a stepwise regression analysis is normally used to determine the independent strength of each predictor variable. All of the previous comments on the technique of multiple regression, which seems to be appropriate for various types of research designs, appear to support the decision to use the selected methodology for this study.

A complete distribution of the students, examiners, and academic institutions used for the study is contained in Appendix B. As stated in the section on definition of terms, universities in Nigeria award full professional degrees while the polytechnics award Higher National Diplomas. The two types of institutions operate separate programs, but they use similar procedures to select and evaluate the students. Table I contains the complete list

TABLE I

STUDY VARIABLES, MEASUREMENT MODES, AND CODINGS

Variable	Abbre-viation	Meaning	Measurement Mode	Coding
1	Age 1	Student age below 21 years	Nominal	1=21 yrs or less 0=Other
2	Age 2	Student age between 22-26 years	Nominal	1=22-26 yrs 0=Other
3	Age 3	Student age above 26 years	Nominal	1=Above 26 yrs 0=Other
4	Sex	Gender of student	Nominal	1=Male 0=Female
5	Finsup 1	Student on scholar-ship	Nominal	1=Student on scholarship 0=Other
6	Finsup 2	Student on loan	Nominal	1=Student on loan 0=Other
7	Finsup 3	Student privately supported	Nominal	1=Private sup-port 0=Other
8	State 1	Student from North-ern Nigeria	Nominal	1=Student from North 0=Other
9	State 2	Student from West-ern Nigeria	Nominal	1=Student from West 0=Other
10	State 3	Student from Mid-western Nigeria	Nominal	1=Student from Midwest 0=Other
11	State 4	Student from East-ern Nigeria	Nominal	1=Student from East 0=Other

TABLE I--Continued

Variable	Abbre-viation	Meaning	Measurement Mode	Coding
12	State 5	Student from Lagos	Nominal	1=Student from Lagos 0=Other
13	WASC	West African exam score in fine art	Ratio	NA (not applicable)
14	PORTF	Score on portfolio presentation	Ratio	NA
15	ENTRAN	Entrance exam score	Ratio	NA
16	FYRCW	Student's first year score	Ratio	NA
17	LYRENT	Student's last year score by external examiner	Ratio	NA
18	LYRINT	Student's last year score by internal examiner	Ratio	NA
19	Employ 1	Student employed in industry	Nominal	1=Industry 0=Other
20	Employ 2	Student employed in civil service	Nominal	1=Civil service 0=Other
21	Employ 3	Student employed in private sector	Nominal	1=Private sector 0=Other
22	Employ 4	Student employed as teacher	Nominal	1=Teaching 0=Other
23	Loc 1	Academic institution in the North	Nominal	1=North 0=Other
24	Loc 2	Academic institution in the West	Nominal	1=West 0=Other

TABLE I--Continued

Variable	Abbre-viation	Meaning	Measurement Mode	Coding
25	Loc 3	Academic institution in the Midwest	Nominal	1=Midwest 0=Other
26	Loc 4	Academic institution in the East	Nominal	1=East 0=Other
27	Loc 5	Academic institution in Lagos	Nominal	1=Lagos 0=Other
28	TYPE	Either university or polytechnic	Nominal	1=University 0=Polytechnic
29	Weave	Hours required for weaving	Ratio	NA
30	Paper	Hours required for paper design	Ratio	NA
31	Fabric	Hours required for fabric printing	Ratio	NA
32	Dyeing	Hours required for resist dyeing	Ratio	NA
33	Special	Hours required for special projects	Ratio	NA
34	EAGE 1	External examiner age above 35 years	Nominal	1=Above 35 yrs 0=Other
35	EAGE 2	External examiner age between 30-35 years	Nominal	1=30-35 yrs 0=Other
36	EAGE 3	External examiner age below 30 years	Nominal	1=Below 30 yrs 0=Other
37	EQUAL 1	External examiner has Ph.D.	Nominal	1=Ph.D. 0=Other
38	EQUAL 2	External examiner has professional degree	Nominal	1=Professional 0=Other

TABLE I--Continued

Variable	Abbre-viation	Meaning	Measurement Mode	Coding
39	EQUAL 3	External examiner has master's degree	Nominal	1=Master's 0=Other
40	EQUAL 4	External examiner has HND	Nominal	1=HND 0=Other
41	EQUAL 5	External examiner has BA/BS degree	Nominal	1= BA/BS 0=Other
42	EEXP 1	External examiner has 1-3 years of experience	Nominal	1=1-3 yrs 0=Other
43	EEXP 2	External examiner has 4-10 years of experience	Nominal	1=4=10 yrs 0=Other
44	EEXP 3	External examiner has more than 10 years of exper-ience	Nominal	1=Above 10 yrs 0=Other
45	ESTAT	External examiner status as senior instructor and above or not	Nominal	1=Sr instructor and above 0=Below sr in-structor
46	ENation	External examiner's nationality	Nominal	1=Nigerian 0=Non-Nigerian
47	EREP	Institution which external examiner represents	Nominal	1=University 0=Polytechnic
48	IAGE 1	Internal examiner age above 35 years	Nominal	1=Above 35 yrs 0=Other
49	IAGE 2	Internal examiner age between 30-35 years	Nominal	1=30-35 yrs 0=Other

TABLE I--Continued

Variable	Abbre-viation	Meaning	Measurement Mode	Coding
50	IAGE 3	Internal examiner age below 30 years	Nominal	1=Below 30 yrs 0=Other
51	ISEX	Gender of internal examiner	Nominal	1=Male 2=Female
52	IQUAL 1	Internal examiner has Ph.D.	Nominal	1=Ph.D. 0=Other
53	IQUAL 2	Internal examiner has professional degree	Nominal	1=Professional 0=Other
54	IQUAL 3	Internal examiner has master's degree	Nominal	1=Master's 0=Other
55	IQUAL 4	Internal examiner has HND	Nominal	1=HND 0=Other
56	IQUAL 5	Internal examiner has BA/BS degree	Nominal	1=BA/BS 0=Other
57	IEXP 1	Internal examiner has 1-3 years of experience	Nominal	1=1-3 yrs 0=Other
58	IEXP 2	Internal examiner has 4-10 years of experience	Nominal	1=4-10 yrs 0=Other
59	IEXP 3	Internal examiner has more than 10 years of exper-ience	Nominal	1=Above 10 yrs 0=Other
60	ISTAT	Internal examiner status as senior instructor and above or not	Nominal	1=Sr instructor and above 0=Below sr in-structor

TABLE I--Continued

Variable	Abbre-viation	Meaning	Measurement Mode	Coding
61	INation	Internal examiner's nationality	Nominal	1=Nigerian 2=Non-Nigerian
62	IREP	Institution which internal examiner represents	Nominal	1=University 0=Polytechnic

of variables in the study, the abbreviations used for the variables in computer analysis, measurement modes, and the appropriate coding used for each of the variables.

The data collected for the study were carefully entered on IBM sheets and later keypunched for computer processing. The study embodies seven research questions, so seven hypotheses were composed. A model was designed for each hypothesis which allows an appropriate analysis. The four types of statistical procedures utilized are (1) the chi square contingency analysis, (2) hierarchical forward inclusion stepwise regression, (3) multiple regression, and (4) regression discontinuity analysis, design number 16 (2, pp. 61-64).

Summary

This chapter describes the population used to provide the data for this study. Also discussed are the survey

instrument, procedures for the selection and collection of data, and the techniques used in the treatment of data. The details of the analyses and reporting of the data are presented in Chapter IV.

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CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

The central purpose of this study is to determine the relationships of the training patterns for textile design students in the universities and polytechnics of Nigeria by the final-year scores as well as by the types of employment that students secure after graduation. This chapter contains the presentation, analysis, and discussion of the data collected for the study, based on the research questions.

Hypotheses

Although hypotheses were not originally proposed during the early stages of this study, they were found to be necessary at this stage in order to test the data adequately. The following seven hypotheses are listed by order and relationship to the research questions.

1. The first-year scores of training will be a more efficient predictor of final-year scores than inclusive WASC scores, entrance examination scores, and portfolio scores.

2. Differences in the training patterns for students in textile design programs in the polytechnics and universities in Nigeria will be significantly related to the scores in the courses for their final year of training.

3. The examiners' academic qualifications, age, teaching experience, state of origin, or location of employment will be significantly related to the students' scores in the final year of training as evaluated by the examiners.

4. The students' sex, age, state of origin, and source of financial support will be significantly related to their final year of performance.

5. The students' sex, age, state of origin, or scores in the courses for the final year will be significantly related to their type of employment after graduation.

6. The type of academic institution that a student attends will be significantly related to his employment after graduation.

7. Location of academic institutions or differences in the number of hours allotted to specific subjects in the two programs will be significantly related to the type of employment that students secure after graduation.

Specific models were designed based on the nature of each hypothesis. These determined the types of statistical treatments used in the analyses.

Statistical Treatments

Two different routines of the North Texas State University Release 9 computer system were used to analyze the data. One of these routines is chi square contingency analysis, and the other is hierarchical forward inclusion stepwise regression. Model one is used to test hypothesis one; models two and three are used to test hypotheses two, three, and four; and models four, five, six, and seven are used to test hypotheses five, six, and seven. A summary of the means, standard deviations, and sample sizes of each of the variables included in this study appears in Appendix B.

Hypothesis One

Hypothesis one states that first-year scores of training will be a more efficient predictor of final-year scores than inclusive WASC scores, entrance examination scores, and portfolio scores. The analyses for this hypothesis are presented by the data in Tables II (regression table) and III (summary table). In Table II, variables 1, 2, and 4 (Entran, WASC, and FYRCW) are significantly related to final-year scores (the significance level is fixed at .05; therefore, 0.0000 is highly significant). Variable 1, entrance examination scores, incrementally explains approximately 42 per cent of the variance in final-year scores. West African School Certificate scores in Fine

TABLE II

REGRESSION ANALYSIS OF DATA ON ENTRAN, WASC, PORTF, AND FYRCW:
Y_1 = FINAL-YEAR COURSEWORK SCORES (LYREXT)

Variable°	ΔB	Δ Beta	Δt	ΔP	ΔR^2	Simul B	Simul Beta	Simul t	Simul P
1. Entran*	0.76750	0.64667	10.031	0.0000*	0.41818	0.27491	0.23163	2.871	0.0047
2. WASC*	0.47717	0.45373	4.955	0.0000*	0.08739	0.23184	0.22045	2.046	0.0427
3. Portf	-0.00110	-0.98003	-0.008	0.9935	0.00000	-0.07290	-0.06501	-0.644	0.5208
4. FYRCW*	0.44576	0.52112	7.728	0.0000*	0.15012	0.44576	0.52112	7.728	0.0000

*Highly significant. At the selected significance level of .05, any item in the P column at .05 or below is significant.

°See Appendix B.

TABLE III

SUMMARY OF TABLE II REGRESSION RESULTS

Sources	DF	Sum of Squares	Mean Squares
Regression	4	4237.65023	1059.41256
Residuals	137	2225.59625	16.24523
Totals	141	6463.24648	

Multiple R square = 0.80972
F score = 62.21377
$p < 0.0000$

Art (WASC) and first-year coursework scores (FYRCW) together incrementally explain about 23 per cent of the total variance in final-year coursework scores. However, the fully partialled t scores show that first-year coursework scores have approximately twice the predictive power of the entrance examination and WASC scores taken together.

Hypotheses, Two, Three, and Four

The data for hypotheses two, three, and four are shown in Tables IV, V, and VI. Hypothesis two states that differences in the training patterns for students in textile design programs in the polytechnics and universities in Nigeria will be significantly related to the scores in the courses for their final year of training; hypothesis three states that the examiners' academic

TABLE IV

CHI SQUARE CONTINGENCY ANALYSIS OF PATTERNS OF TRAINING BETWEEN THE UNIVERSITY AND THE POLYTECHNIC

Institution	Weaving		Paper Design		Fabric Design		Resist Dyeing		Special Projects	
	O	E	O	E	O	E	O	E	O	E
University	40	47.1	49	43.4	36	30.5	24	23.6	18	22.5
Polytechnic	48	40.9	32	37.6	21	26.5	20	20.4	24	19.5

O = observed frequency; E = expected frequency.
$\chi^2 = 7.952$
DF = 4
Significance level = 0.09337
$p < .1$; $p > .05$

qualifications, age, teaching experience, state of origin, or location of employment will be significantly related to the students' scores in the final year of training; and hypothesis four states that the students' sex, age, state of origin, and source of financial support will be significantly related to their final year of performance. The analyses of these hypotheses are contained in the chi square contingency table (Table IV) presented above and the regression table (Table V) and summary table (Table VI) that follow.

In Table IV, a significant relationship at the .1 level is explained between the university and polytechnic textile design training patterns. The analysis indicates

TABLE V

REGRESSION ANALYSIS OF VARIABLES PREDICTING FINAL-YEAR SCORES:
Y_2 = FINAL-YEAR SCORES (LYRENT)

Variable†	ΔB	Δ Beta	Δt	ΔP	ΔR^2	Simul B	Simul Beta	Simul t	Simul P
1. Entran°	0.76750	0.64667	10.031	0.0000°	0.41818	0.35434	0.29855	2.585	0.0109
2. WASC°	0.47717	0.45373	4.955	0.0000°	0.08735	0.35973	0.34260	3.896	0.0002
3. AGE 1	0.68185	0.05051	0.834	0.4059	0.00247	-0.54537	-0.04040	-0.487	0.6270
4. AGE 2	-0.40940	-0.02935	-0.320	0.7497	0.00037	-0.28574	-0.02048	-0.245	0.8067
5. FINSUP 1	-1.25020	-0.08204	-1.330	0.1857	0.00631	0.05349	0.00351	0.059	0.9528
6. FINSUP 2	-0.29544	-0.01869	-0.290	0.7724	0.00031	-0.00135	-0.85204	-0.002	0.9988
7. State 1°	2.74977	0.16837	2.767	0.0064°	0.02622	1.69302	0.10367	1.216	0.2264
8. State 2	0.37536	0.02325	0.363	0.7175	0.00045	1.12592	0.06973	0.857	0.3930
9. State 3	0.21600	0.01338	0.187	0.8516	0.00012	1.41838	0.08784	0.995	0.3216
10. State 4	-0.60006	-0.03539	-0.409	0.6829	0.00059	0.01452	0.85603	0.011	0.9916
11. EAGE 1	1.08035	0.04774	0.756	0.4507	0.002	9.03186	0.39910	3.300	0.0013
12. EAGE 2	*	*	*	*	*	*	*	*	*
13. ESEX	-0.62261	-0.02467	-0.397	0.6918	0.00056	-13.85777	-0.54911	-3.768	0.0003
14. EQUAL 1°	9.35395	0.51081	6.613	0.0000°	0.11588	21.71377	1.18578	2.172	0.0318
15. EQUAL 2	-1.38158	-0.08460	-1.434	0.1540	0.00541	9.64335	0.59047	1.100	0.2735
16. EQUAL 3	*	*	*	*	*	*	*	*	*
17. EQUAL 4	*	*	*	*	*	*	*	*	*
18. EEXP 1	1.54733	0.09474	1.424	0.1570	0.00529	*	*	*	*
19. EEXP 2	-1.54733	-0.09474	-1.424	0.1570	0.0	-1.35067	-0.08270	-0.293	0.7703
20. Nation	-0.06073	-0.00399	-0.42	0.9662	0.0	1.12968	0.07413	0.641	0.5226
21. ESTAT	*	*	*	*	*	*	*	*	*
22. IREP 1	1.80740	0.13390	1.111	0.2687	0.00324	*	*	*	*
23. IERP 2	*	*	*	*	*	*	*	*	*

TABLE V--Continued

Variable†	Δ B	Δ Beta	Δt	ΔP	ΔR^2	Simul B	Simul Beta	Simul t	Simul P
24. Weave°	0.92354	0.54994	2.481	0.0145*	0.01549	0.93671	0.55778	2.816	0.0057
25. Paper	-0.53712	-0.23150	-1.665	0.0985	0.00689	-0.39058	-0.16834	-1.119	0.2654
26. Fabric	*	*	*	*	*	*	*	*	*
27. Dyeing	*	*	*	*	*	*	*	*	0.6158
28. Special	*	*	*	*	*	*	*	*	*
29. Type	*	*	*	*	*	*	*	*	*
30. X_{21}	-1.00205	-0.69813	-4.875	0.0000	0.08556	*	*	*	*
31. X_{22}	*	*	*	*	*	*	*	*	*
32. X_{23}	*	*	*	*	*	*	*	*	*
33. X_{24}	*	*	*	*	*	*	*	*	*
34. X_{25}	*	*	*	*	*	*	*	*	*
35. X_{26}	0.15866	0.69107	1.165	0.2462	0.00336	0.15866	0.69107	1.165	0.2462

*These variables are redundant, and the SPSS program did not enter them; therefore, their differential effect is zero.

°Significant at .05 level.

†See Appendix B.

that there is a significant difference in the pattern of hour allocation at the .1 level of significance. The university requires, on the average, more hours than the polytechnic in paper design and fabric printing, while the polytechnic requires, on the average, more hours in weaving and special projects. The number of hours required for resist dyeing in the two institutions is not significantly different.

TABLE VI

SUMMARY OF TABLE V REGRESSION RESULTS

Sources	DF	Sum of Squares	Mean Squares
Regression	20	4527.41210	226.37061
Residuals	121	1935.83438	15.99863
Totals	141	6463.24648	

Multiple R square = 0.83695
F score = 14.14937
$p < 0.0000$

The regression analysis in Tables V and VI also addresses hypothesis two as well as hypotheses three and four. In Table V, the variables for entrance examination scores, WASC Fine Art scores, students' state of origin (northern Nigeria), external examiners' qualifications (possession of a doctorate), patterns of coursework in weaving, and the

interaction between the university versus polytechnic variable and patterns of coursework in weaving are significantly related to final-year coursework scores. These significant variables are listed in Table V as numbers 1, 2, 7, 14, 24, and 30.

Hypotheses Five, Six, and Seven

Data on hypotheses five, six, and seven are shown in Tables VII, VIII, IX, X, XI, XII, XIII, and XIV, the dependent variables in which are four categories of employment. Hypothesis five states that the students' sex, age, state of origin, or scores in the courses for the final year will be significantly related to their type of employment after graduation; hypothesis six states that the type of academic institution that a student attends will be significantly related to his employment after graduation; and hypothesis seven states that the location of academic institutions or the differences in the number of hours allotted to specific subjects in the two programs will be significantly related to the type of employment that the student secures after graduation. The analyses of these hypotheses are contained in the regression tables (Tables VII, IX, XI, and XIII) and summary tables (Tables VIII, X, XII, and XIV) shown below.

The data in Table VII indicate that none of the listed variables is a predictor of students' chances of

TABLE VII

REGRESSION ANALYSIS OF THE RELATIONSHIP BETWEEN STUDENT CHARACTERISTICS AND FINAL-YEAR PERFORMANCE AND STUDENT EMPLOYMENT IN THE INDUSTRY: Y_3 = EMPLOYMENT 1 (INDUSTRY)

Variable	ΔB	Δ Beta	Δt	ΔP°	ΔR^2	Simul B	Simul Beta	Simul t	Simul P
1. SEX	0.03803	0.04043	0.479	0.6329	0.00163	0.04212	0.04478	0.497	0.6198
2. AGE 1	-0.01431	-0.01644	-0.194	0.8465	0.00027	0.10281	0.11811	0.830	0.4079
3. AGE 2	0.15271	0.16979	1.328	0.1863	0.00019	0.17044	0.18950	1.321	0.1890
4. State 1	0.10410	0.09885	1.145	0.2542	0.00935	0.17022	0.16164	1.105	0.2714
5. State 2	0.10124	0.09724	1.098	0.2741	0.00858	0.10042	0.09644	0.682	0.4964
6. State 3	0.12584	0.12086	1.251	0.2132	0.00108	0.09318	0.08449	0.595	0.5531
7. State 4	-0.23531	-0.11460	-0.956	0.3407	0.00648	-0.11633	-0.10639	-0.781	0.4362
8. LOC 1	-0.08429	-0.07494	-0.844	0.4002	0.00506	-0.33601	-0.29872	-0.683	0.4960
9. LOC 2	-0.05907	-0.05543	-0.614	0.5401	0.00269	-0.17691	-0.16601	-0.534	0.5945
10. LOC 3	-0.04125	-0.03612	-0.359	0.7205	0.00093	-0.24961	-0.21854	-0.421	0.6742
11. LOC 4	-0.00338	-0.00317	-0.028	0.9778	0.00000	-0.23003	-0.21585	-0.346	0.7298
12. Weave	-0.66741	-0.00626	-0.047	0.9628	0.00002	-0.01072	-0.09901	-0.180	0.8572
13. Paper	-0.01685	-0.11266	-0.843	0.4010	0.00519	*	*	*	*
14. Fabric	0.07336	0.39400	0.939	0.3496	0.00645	0.04322	0.23213	0.705	0.4821
15. Dyeing	0.00296	0.01234	0.067	0.9469	0.00004	-0.05306	-0.22103	-0.380	0.7048
16. Special	0.02033	0.12620	0.188	0.8513	0.00026	*	*	*	*
17. LYREXT	-0.00402	-0.06240	-0.574	0.5673	0.00246	-0.00402	-0.06240	-0.574	0.5673
18. TYPE	-0.12638	-0.14520	-0.807	0.4215	-0.00147	*	*	*	*
19. X_{21}	-0.01935	-0.02905	-0.852	0.3961	0.00147	-0.01380	-0.14910	-0.221	-.8255
20. X_{22}	-0.00530	-0.6273	-0.114	0.9092	0.00000	*	*	*	*

TABLE VII--Continued

Variable†	ΔB	Δ Beta	Δt	ΔP°	ΔR^2	Simul B	Simul Beta	Simul t	Simul P
21. X_{23}	-0.00829	-0.07259	0.114	0.9092	0.00000	*	*	*	*
22. X_{24}	0.03017	0.02190	0.482	0.6309	0.00000	*	*	*	*
23. X_{25}	-0.02108	-0.08858	-0.114	0.9092	0.00000	-0.02108	-0.08858	-0.114	0.9092

*These variables are redundant, and the SPSS program did not enter them; therefore, their differential effect is zero.

°None of the variables in this column is significant at the .05 level.

†See Appendix B.

TABLE VIII

SUMMARY OF TABLE VII REGRESSION RESULTS

Sources	DF	Sum of Squares	Mean Squares
Regression	17	1.96414	0.11554
Residuals	124	24.90910	0.20088
Totals	141	26.87324	

Multiple R square = 0.27035
F score = 0.57516
p < 0.9049

being employed in the industry. Of the 23 variables listed in Table IX, only being from midwestern Nigeria (State 3) has a significant relationship with employment in the civil service. Data in Table XI show that sex and final-year coursework scores are significant predictors of the student's being employed in the private sector. Males are more than 15 per cent more likely to be employed in the private sector than are females.

TABLE IX

REGRESSION ANALYSIS OF THE RELATIONSHIP BETWEEN STUDENT CHARACTERISTICS, ACADEMIC INSTITUTION, AND FINAL-YEAR PERFORMANCE AND STUDENT EMPLOYMENT IN THE CIVIL SERVICE: Y_4 = EMPLOYMENT 2 (CIVIL SERVICE)

Variable†	ΔB	Δ Beta	Δt	ΔP	ΔR^2	Simul B	Simul Beta	Simul t	Simul P
1. SEX	-0.06401	-0.07653	-0.908	0.3653	0.00586	-0.06368	-0.07615	-0.870	0.3858
2. AGE 1	-0.04538	-0.05864	-0.695	0.4885	0.00344	-0.02640	-0.03412	-0.247	0.8054
3. AGE 2	0.00623	0.00779	0.061	0.9516	0.00002	-0.00533	-0.00667	-0.048	0.9619
4. State 1	-0.01291	-0.01379	-0.159	0.8743	0.08817	0.01091	0.01166	0.082	0.9348
5. State 2	-0.04748	-0.05130	-0.573	0.5674	0.00239	-0.04340	-0.04689	-0.341	0.7335
6. State 3°	-0.23642	-0.25541	-2.668	0.0086°	0.04949	-0.16547	-0.17876	-1.222	0.2238
7. State 4	0.13995	0.14397	1.215	0.2265	0.01023	0.12064	0.12411	0.938	0.3503
8. LOC 1	-0.09738	-0.09738	-1.112	0.2683	0.00855	0.37378	0.37378	0.879	0.3811
9. LOC 2	-0.03175	-0.03352	-0.376	0.7074	0.00098	0.30502	0.32195	1.065	0.2889
10. LOC 3	0.03163	0.03115	0.313	0.7547	0.00069	0.50077	0.49316	0.979	0.3297
11. LOC 4	0.16296	0.17201	1.548	0.1241	0.01662	0.57069	0.60236	0.994	0.3221
12. Weave	0.01422	0.14767	1.132	0.2596	0.00887	0.05492	0.50748	1.069	0.2870
13. Paper	0.00126	0.00948	0.073	0.9422	0.00004	*	*	*	*
14. Fabric	0.04151	0.25077	0.611	0.5425	0.00261	-0.00859	-0.05191	-0.162	0.8714
15. Dyeing	-0.02054	-0.09672	-0.535	0.5934	0.00202	0.07349	0.34437	0.609	0.5438
16. Special	-0.08729	-0.60962	-0.931	0.3534	0.00612	*	*	*	*
17. LYREXT	-0.00577	-0.10062	-0.952	0.3432	0.00639	-0.00577	-0.10062	-0.952	0.3432
18. TYPE	-0.00232	-0.00300	-0.017	0.9864	-0.00273	*	*	*	*
19. X_{21}	-0.00967	-0.11754	-0.493	0.6231	0.00273	-0.04460	-0.54206	-0.827	0.4101
20. X_{22}	0.03339	0.44421	0.833	0.4064	0.00000	*	*	*	*

TABLE IX--Continued

Variable†	ΔB	Δ Beta	Δt	ΔP	ΔR^2	Simul B	Simul Beta	Simul t	Simul P
21. X_{23}	0.05220	0.51405	0.833	0.4064	0.00000	*	*	*	*
22. X_{24}	0.02195	0.16524	0.406	0.6858	0.00000	*	*	*	*
23. X_{25}	0.13269	0.62722	0.833	0.4064	0.00000	0.13269	0.62722	0.833	0.4064

*These variables are redundant, and the SPSS program did not enter them; therefore, their differential effect is zero.

°Significant variable.

†See Appendix B.

TABLE X

SUMMARY OF TABLE IX REGRESSION RESULTS

Sources	DF	Sum of Squares	Mean Squares
Regression	17	2.64436	0.15555
Residuals	124	18.59508	0.14996
Totals	141	21.23944	

Multiple R square = 0.35258
F score = 1.03728
p < 0.4235

TABLE XI

REGRESSION ANALYSIS OF THE RELATIONSHIP BETWEEN STUDENT CHARACTERISTICS, INSTITUTION TYPE AND LOCATION, AND FINAL-YEAR PERFORMANCE AND STUDENT EMPLOYMENT IN THE PRIVATE SECTOR: Y_5 = EMPLOYMENT 3 (PRIVATE SECTOR)

Variable†	ΔB	Δ Beta	Δt	ΔP	ΔR^2	Simul B	Simul Beta	Simul t	Simul P
1. SEX°	0.15955	0.17121	2.056	0.0416°	0.02931	0.18868	0.20246	2.348	0.0205
2. AGE 1	-0.05830	-0.06761	-0.811	0.4188	0.00457	-0.16018	-0.19577	-1.364	0.1751
3. AGE 2	-0.03253	-0.03651	-0.289	0.7734	0.00059	-0.15196	-0.17054	-1.241	0.2169
4. State 1	-0.04858	-0.04657	-0.543	0.5880	0.00207	0.06782	0.06501	0.464	0.6435
5. State 2	0.09956	0.09653	1.097	0.2744	0.00845	0.19164	0.18579	1.372	0.1725
6. State 3	0.05130	0.04973	0.516	0.6070	0.00188	0.15074	0.14614	1.014	0.3125
7. State 4	0.17758	0.16395	1.375	0.1714	0.01327	0.16072	0.14838	1.137	0.2575
8. LOC 1	0.00871	0.00781	0.088	0.9298	0.00005	-0.13345	-0.11976	-0.286	0.7755
9. LOC 2	0.12180	0.11537	1.288	0.1999	0.01167	-0.03736	-0.3539	-0.119	0.9056
10. LOC 3	0.07676	0.06784	0.679	0.4981	0.00326	-0.93039	-0.34501	-0.695	0.4886
11. LOC 4	-0.03791	-0.03591	-0.319	0.7501	0.00072	-0.57821	-0.54768	-0.917	0.3609
12. Weave	-0.02127	-0.19830	-1.507	0.1342	0.016	-0.04790	-0.44655	-0.849	0.3974
13. Paper	0.03134	0.21146	1.622	0.1072	0.01829	*	*	*	*
14. Fabric	-0.00635	-0.03445	-0.084	0.9333	0.00005	0.05239	0.28403	0.901	0.3695
15. Dyeing	0.00349	0.01467	0.081	0.9355	0.00005	-0.08932	-0.37559	-0.674	0.5017
16. Special	0.07281	0.45634	0.695	0.4881	0.0343	*	*	*	*
17. LYREXT°	-0.01525	-0.23873	-2.291	0.0237°	0.03599	-0.01525	-0.23873	-2.291	0.0237
18. TYPE	-0.04070	-0.04720	-0.272	0.7862	-0.01359	*	*	*	*
19. X_{21}	0.01981	0.21610	0.919	0.3598	0.01359	0.6852	0.74731	1.156	0.2398
20. X_{22}	-0.04656	-0.55584	-1.058	0.2923	0.00000	*	*	*	*

TABLE XI--Continued

Variable†	Δ B	Δ Beta	Δt	ΔP	ΔR^2	Simul B	Simul Beta	Simul t	Simul P
21. X_{23}	-0.07278	-0.64322	-1.058	0.2923	0.00000	*	*	*	*
22. X_{24}	-0.07778	-0.52543	-1.309	0.1931	0.00000	*	*	*	*
23. X_{25}	-0.18501	-0.78484	-1.058	0.2923	0.00000	-0.18501	-0.78484	-1.508	0.2923

*These variables are redundant, and the SPSS program did not enter them; therefore, their differential effect is zero.

°Significant variables.

†See Appendix B.

TABLE XII

SUMMARY OF TABLE XI REGRESSION RESULTS

Sources	DF	Sum of Squares	Mean Squares
Regression	17	3.94675	0.23216
Residuals	124	22.42649	0.18086
Totals	141	26.37324	

Multiple R square= 0.38685
F score = 1.28366
p < 0.2138

The data in Table XIII show that final-year course-work scores are the only significant predictor of the student's being employed in the teaching sector. Students who performed very well in the final year coursework evaluations are more likely to be employed in the teaching sector.

TABLE XIII

REGRESSION ANALYSIS OF THE RELATIONSHIP BETWEEN LOCATION OF INSTITUTION, DIFFERENCES IN TRAINING PATTERNS, AND FINAL-YEAR PERFORMANCE AND STUDENT EMPLOYMENT IN THE TEACHING SECTOR: Y_6 = EMPLOYMENT 4 (TEACHING)

Variable†	ΔB	Δ Beta	Δt	ΔP	ΔR^2	Simul B	Simul Beta	Simul t	Simul P
1. SEX	-0.13358	-0.13277	-1.585	0.1152	0.01763	-0.16712	-0.16610	-1.992	0.0485
2. AGE 1	0.17799	0.12674	1.520	0.1308	0.01606	0.08378	0.09000	0.683	0.4957
3. AGE 2	-0.12641	-0.13141	-1.042	0.2991	0.00755	-0.01315	-0.01367	-0.103	0.9182
4. State 1	-0.04261	-0.03783	-0.442	0.6588	0.00136	-0.24895	-0.22104	-1.632	0.1053
5. State 2	-0.15332	-0.13769	-1.577	0.1170	0.01721	-0.24865	-2.33239	-1.706	0.0906
6. State 3	0.05928	0.05324	0.556	0.5789	0.00215	-0.07845	-0.07045	-0.506	0.6140
7. State 4	-0.19222	-0.16438	-1.390	0.1668	0.02333	-0.16503	-0.14113	-1.119	0.2653
8. LOC 1	0.17297	0.14378	1.654	0.1006	0.01863	0.09557	0.07953	0.196	0.8447
9. LOC 2	-0.03097	-0.02718	-0.307	0.7592	0.00065	-0.09075	-0.07962	-0.276	0.7827
10. LOC 3	-0.06713	-0.05495	-0.557	0.5786	0.00213	0.13923	0.11397	0.237	0.8128
11. LOC 4	-0.12167	-0.10675	-0.963	0.3373	0.0064	0.23754	0.28041	0.361	0.7187
12. Weave	0.00773	0.06677	0.511	0.6100	0.00182	0.00371	0.03200	0.063	0.9499
13. Paper	-0.01575	-0.09841	-0.754	0.4519	0.00396	*	*	*	*
14. Fabric	-0.10852	-0.54493	-1.336	0.1841	0.01234	-0.08702	-0.43698	-1.433	0.1543
15. Dyeing	0.01419	0.05527	0.308	0.7589	0.00066	0.06888	0.26830	0.498	0.6195
16. Special	-0.00585	-0.03396	-0.052	0.9586	0.00002	*	*	*	*
17. LYREXT°	0.02504	0.36311	3.604	0.0005°	0.08362	0.02504	0.36311	3.604	0.0005
18. TYPE	0.16941	0.18198	1.092	0.2770	-0.00082	*	*	*	*
19. X_{21}	0.00921	0.09300	0.409	0.6832	0.00082	-0.01012	-0.10221	-0.164	0.8703
20. X_{22}	0.01847	0.20426	0.402	0.6884	0.00000	*	*	*	*

TABLE XIII--Continued

Variable†	ΔB	Δ Beta	Δt	ΔP	ΔR^2	Simul B	Simul Beta	Simul t	Simul P
21. X_{23}	0.2888	0.23637	0.402	0.6884	0.00000	*	*	*	*
22. X_{24}	0.02566	0.16056	0.414	0.6799	0.00000	*	*	*	*
23. X_{25}	0.07340	0.28841	0.402	0.6884	0.00000	0.7340	0.28841	0.402	0.6884

*These variables are redundant, and the SPSS program did not enter them; therefore, their differential effect is zero.

°Significant variable.

†See Appendix B.

TABLE XIV

SUMMARY OF TABLE XIII REGRESSION RESULTS

Sources	DF	Sum of Squares	Mean Squares
Regression	17	6.30665	0.37098
Residuals	124	24.43279	0.19704
Totals	141	30.73944	

Multiple R square = 0.45295
F score = 1.88277
$p < 0.0253$

Summary of Data Findings

This chapter has examined and analyzed all of the data that were collected for the study. The seven proposed hypotheses were tested by two different statistical routines of the North Texas State University Release 9 computer system in order to establish the statistical relationships of the training patterns for textile design graduates of polytechnics and universities in Nigeria.

In order to test hypothesis one, a hierarchical forward inclusion stepwise regression technique was used. The data results show that first-year coursework scores, entrance examination scores, and West African School Certiricate scores in Fine Art are significant predictors of final-year coursework scores for textile design students

in the two types of academic institutions under study. Hypothesis one is therefore accepted; it was found that first-year scores are a better predictor than the other three variables combined.

The data for hypotheses two, three, and four are shown in Tables IV, V, and VI. The findings indicate that there is a significant difference between the patterns of student training in the two institutions. It is further shown that the university requires, on the average, more hours than the polytechnic in paper design and fabric printing, while the polytechnic requires, on the average, more hours in weaving and special projects. Furthermore, external examiners' qualifications (possessing a doctorate), students' state of origin (northern Nigeria), and interaction between weaving and the university versus polytechnic variable are significantly related to final-year coursework scores.

The data for hypotheses five, six, and seven are shown in Tables VII, VIII, IX, X, XI, XII, XIII, and XIV, the independent variables in which are four categories of employment. It was found that being a student from the midwestern state, student's gender, and final-year coursework are good predictors of some employment alternatives.

Therefore, based on the seven hypotheses, the data analyses produced the following findings.

1. First-year training of textile design students appears to be a better predictor of final-year training than the other three predictors combined.

2. There are differences in the training patterns in the polytechnic and university which are related to the final year of training. The polytechnic-university interactions with the training patterns indicate that the polytechnics' programs in weaving are of better quality. The assumption is, of course, that there are no other plausible explanations which are not considered in this study.

3. Examiners who hold a doctorate tend to rate students more highly than those who do not hold a doctorate. However, age, training, experience, state of origin, or location of examiner's employment appears to have no significant relationship with students' final-year scores.

4. Students' characteristics, especially age, sex, and financial support, have no relationship to predicting their performance in final-year coursework. However, being a student from the northern part of Nigeria seems to be related to scores obtained in the final year; these students tend to score, on the average, 2.7 points higher than students from other regions.

5. Data findings indicate that students from the midwestern region appear to have better chances of being employed in the civil service than those from other regions,

male students are more likely to be employed in the private sector than females, and students who perform well in final-year coursework are most likely to be employed either in the private sector or in the teaching field.

6. Apparently, the type of academic institution which a student attends is not a predictor of the type of employment secured after graduation.

7. Location of academic institution and differences in training patterns are not good predictors of students' type of employment after graduation.

CHAPTER V

SUMMARY AND DISCUSSION OF FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Introduction

This chapter is composed of a summary of the study that includes the purposes, problems, procedures, and methodology of the study, followed by a summary of the data findings as they pertain to the data-collecting instrument, research questions, and hypotheses. Based on the findings, conclusions and implications are drawn. Finally, recommendations for future research consistent with the findings are presented.

The main purpose of this study is to determine the possible relationships between the alternative training patterns of handcrafted textile design students in the polytechnics and universities in Nigeria by the scores in the courses for their final-year training as well as the type of first employment that the students secure after graduation. Therefore, the concern of the study is with the quality of programs and types of jobs secured by handcrafted textile design graduates of the polytechnics and universities in Nigeria.

The population for this study is the textile design students of the polytechnics and universities in Nigeria. A sample of 142 students was randomly selected from a regional distribution of five universities and five polytechnics.

Prior to the collection of data on the selected subjects, an instrument (Appendix B) was designed which was used for the exercise. On completion of data collection, the information was punched into cards for computer processing. Before running the analysis, different models were designed to test the hypotheses. Having completed all the preliminaries, the cards were run on the SPSS computer system Release 9 at North Texas State University. Two different routines of the system were utilized for the data analysis. They were the chi square contingency analysis and hierarchical forward inclusion regression analysis.

Summary of Data Findings

Based on the analyses of data contained in Chapter IV of this study, the following data findings are pertinent.

1. Fine Art scores in the West African School Certificate examinations, first-year coursework scores, and entrance examination scores appear to be good predictors of final-year scores.

2. Evidently, there are differences in the training patterns in Nigerian university and polytechnic textile

design programs. Students from the polytechnics tend to perform better in weaving.

3. Examiners who hold a doctorate tend to rate students much higher than those examiners with other types of qualifications. However, examiners' age, training, experience, state of origin, and location of employment appear to have no significant relationship with students' final-year scores.

4. Students' characteristics, especially age, sex, and financial support, appear to have no relationship with their performance in final-year coursework. However, being a student from the northern part of Nigeria seems to be related to the scores obtained in the final year; such students tend to score, on the average, 2.7 points higher than students from other regions.

5. Data findings indicate that students from the midwestern region appear to have better chances of being employed in the civil service than those from other regions, male students are more likely to be employed in the private sector than females, and students who produce a good performance in final-year coursework are most likely to be employed either in the teaching area or in the private sector.

6. The academic institution which a student attends appears to have no influence on the type of first employment secured after graduation.

7. Location of academic institution as well as differences in the training patterns of textile design students in Nigeria's higher education institutions does not appear to be related to the kind of job secured after graduation.

Discussion of Data Findings

This discussion section contains two subsections. The first covers the findings regarding the hypotheses and other statistical data, and the second relates the data findings from this study to findings from previous research.

Hypotheses Findings

The following is based on the summary of data findings in this study. Hypothesis one--that first-year scores of training are more efficient predictors of final-year scores than inclusive WASC scores, entrance examination scores, and portfolio scores--is confirmed. The fully partialled *t* value and the fully-partialled beta value of the first-year scores are approximately twice as large as the sum of the *t* values and beta values of the three other variables together. This is conclusive evidence that the first-year coursework scores are the best predictors of the final-year performance out of all the variables utilized in this model. In addition, when the three variables are fully partialled from the first-year scores, there is

a residual positive effect. This means that first-year scores are measuring elements of performance in the final-year scores that are not measured by the three other variables.

Based upon the findings presented in Chapter IV, hypothesis two--that differences in the training patterns for students in textile design programs in the polytechnics and universities in Nigeria will be significantly related to the scores in the courses for their final year of training--is confirmed. Hypothesis three--that the examiners' academic qualifications, age, teaching experience, state of origin, or location of employment will be significantly related to the students' scores in the final year of training--is partially accepted. The fourth hypothesis--that the students' sex, age, state of origin, and source of financial support will be significantly related to their final year of performance--is also partially confirmed. In other words, the variable which represents the examiner's possession of a doctorate is a significant predictor of students' final-year scores, whereas an examiner's age, teaching experience, state of origin, and location of employment are not significant. In the same context, the variables of age, sex, and source of financial support used in hypothesis four are not good predictors of students' final-year performance, but

state of origin for northern Nigerian students is a significant predictor of performance in the final year.

The data in Table IV show that there is a significant differential effect of the pattern for course offerings between the university and the polytechnic. There are also significant interaction effects on the final-year test scores between the polytechnic versus university variables and the patterns of training, as depicted by data in Tables V and VI. Additional information provided in these tables indicates that, everything else being equal, the greater the number of hours taken in weaving, the better the student performs on the final-year scores. That is, for each additional hour taken in weaving, students, on the average, increase their final scores by .92 of one point.

The interaction scores show that, on the average, students in polytechnics perform better than students in universities on the weaving practical coursework aspects of textile design training examined in this study. It appears that, when the university-polytechnic variable interacts with the patterns of coursework in weaving, the results show that, for each additional hour of weaving taken in the polytechnic, students, on the average, score about .13 of one point higher on the final examination.

Furthermore, the data in Tables V and VI show that there is no relationship between examiners' age, teaching experience, location of employment, or nationality and students' final-year scores. There is, however, a relationship between examiners' qualifications and the students' final-year performance. Examiners who have doctorates tend to score students about 9.35 points higher on their final-year coursework than other examiners. This further partially confirms hypothesis three.

Hypotheses five, six, and seven are respectively stated as follows: the students' sex, age, state of origin, or scores in the courses for the final year will be significantly related to their type of employment after graduation; the type of academic institution a student attends will be significantly related to employment after graduation; and the location of academic institutions or the differences in the numbers of hours allotted to specific subjects in the two programs will be significantly related to the type of employment that students secure after graduation. These hypotheses were tested by data shown in Tables VII, VIII, IX, X, XI XII, XIII, and XIV in Chapter IV. Based upon these data, hypothesis five is partially confirmed. There is adequate evidence that the variable for the midwestern region has a significant relationship with employment in the civil service; that

is, students from the midwestern region in Nigeria are more likely to find employment in the civil service than in any of the other three employment categories. It is also evident that good performance in final-year course-work has a significant relationship with both teaching appointments and employment in the private sector. Male students are more likely to be employed in the private sector than females. In the same context, hypotheses six and seven are rejected. There is no significant relationship detected, in any of the data, between either the location or type of academic institution that a student attends or differences in the programs and any of the employment categories.

Findings in Relation to Previous Research

From the review of related literature, summary of data findings, and conclusions, the following inferences are notable. This study found that first-year scores are better predictors of final-year performance than any other measurement, and this is in line with several studies. Deboer (5), Duder and Aronson (6, pp. 56-73), and Judy (15) found similar results in their investigation. Hollen and Saddler (13) also report that first-year grade point average in mathematics correlates more highly with academic achievement than any entrance measures. Furthermore, several other studies cited in the literature review

arrive at similar results. These appear to reinforce the reliability of this finding in the current study.

In regard to the difference in the weaving programs observed between the polytechnic and the university, this appears to be in line with Item 49 of the 1977 Nigerian government's policy in higher education (9), but it partially disagrees with Shonuga's (21) conclusion as well as the results of an investigation conducted in 1980 by the Federal Research Institute (8), Oshodi, Nigeria. In addition, Uzuoagba (24) tends to infer that good performance in WASC Fine Art is an indication of success in the polytechnic. He found that about 55 per cent of students who performed well in design on the 1979 West African School Certificate examinations were admitted to the polytechnics. The general goals statement for polytechnic education (19) also appears to emphasize weaving programs.

The inconsistency observed in the evaluation of students' works may have been causal, but this relates partially to Edmiston's (7) findings. It, however, differs from Daramola's (4) conclusions. An inference can be further drawn from the way evaluation procedures are being conducted in the two institutions, which tends to combine the opinions of both external and internal examiners. There is, however, a scarcity of comparative research in this area.

This study found that students' and examiners' characteristics do not appear to affect students' academic performance. Several studies cited in Chapter II tend to find approximately the same results. For instance, Adegbile and Ndandok (1), Burnham and Hewitt (2), Dale and Miller (3), Hoyt (14), and Ostberg (20) obtained similar findings which show that personal characteristics do not often influence academic achievement. However, Mallinson (18) concludes that certain characteristics of students are highly significant to their academic achievement.

It can be inferred from this study that students from northern Nigeria more often work in industry, perhaps because of the influence of large numbers of textile industries in that region. Also, it is observed that students from the midwest seem to work more as civil servants. These findings tend to agree partially with Karmel's (16) report that the environmental factors may influence the employment that students obtain. He further confirms male dominance in the textile design area. Livingston (17) and Wingard and Williamson (24) support this idea of environmental influences in employment choice.

Research is scarce in Nigeria on the issue of the fact that students who perform highly in their final year of study often go into teaching or the private sector. However, Adegbile and Ndandok (1) report that academically

highly placed students are often not employed in the industry, perhaps because the salary that must be offered to such qualified graduates may be utilized to pay about two or three less qualified ones. Freeman (10) also concluded in 1978 that high performance in technical program-related jobs does not necessarily provide industry employment. However, Hind and Wirth (12) believe that an addition of demographic factors to those of academics may be responsible for the apparent choice of students to work in the private sector.

Several studies cited in the literature review tend to infer that location or type of academic institutions does not predict the kind of jobs that students obtain. This is clearly demonstrated in Mallinson's (18) research. He concludes that employment success is not necessarily related to either the type or size of academic institution which a student attends. This conclusion is congruent with Fuehrer's (11) investigation results, but it is surprisingly different from the views of Stewart (22).

Conclusions

Based on the data from this study, the following conclusions appear to be warranted.

1. This study suggests that there are many more similarities in the training of textile design students in the polytechnics and universities than there are differences.

In addition, both institutions seem to train students for no specific type of employment.

2. It appears that the first-year performance of textile design students in the polytechnics and universities in Nigeria is more crucial to predicting their performance in the final year than any other measure.

3. Although there is apparently no clear distinction between patterns of training textile design students in the polytechnics and universities in Nigeria, there is a particular difference in weaving, possibly caused by the large proportion of time allotted to this course in the polytechnics.

4. There appears to be an inconsistency in the way in which students are evaluated by examiners.

5. It appears that students' and examiners' personal characteristics do not affect textile design students' final-year performance in Nigeria's higher educational institutions.

6. Because of the predominance of textile industries in the northern part of Nigeria (as cited in the literature review), students from that region appear to be influenced to work in the industry. In the same context, since there are many government departments that employ textile designers in the midwestern region, students in this region are more likely to work as civil servants.

7. Textile design appears to be a male-dominated area in Nigeria.

8. It appears that textile design instructors are likely to be of high quality because students who have high performance in their final-year coursework more often go into the teaching field or the private sector.

9. There is no evidence to indicate that the way in which textile graduates secure employment appears to have any bearing with either the location or type of academic institution that they attend.

Implications

The findings and conclusions of this study suggest the following implications.

1. Admission requirements and procedures are not as related to the standard of performance expected of textile students at the end of the course of study as they should be.

2. It may be possible to suggest that an information source is provided in this study for potential students in weaving to decide on which of the two types of Nigerian institutions to attend. Similarly, it is appropriate to suggest that textile design programs be taught by people who performed highly during their training.

3. It is implied that Nigerian textile design is dominated by males and that personal characteristics seem not to affect program completion.

4. It appears that the way in which textile design students are being evaluated suggests that there is no consistency in the current approach.

5. There is an implication in this study that employers' needs and how college evaluations are to be interpreted by employers appear not to be considered in the preparation of textile design students in Nigeria.

6. It is implied that, to a certain extent, students from areas in which certain types of employment predominate often take advantage of such situations.

Recommendations for the Polytechnics and Universities in Nigeria

As a result of this study, the following recommendations for modifications are suggested to Nigerian polytechnics and universities.

1. Administrative and academic officers in the polytechnics and universities in Nigeria need to reexamine their admission requirements so that there will be a greater relationship to the expected standard of performance of the students upon completion of their course of study. One area of experiment to consider may be for the admissions officers in the institutions to admit conditionally those candidates who have marginal entrance results for only the first year of study. If such students perform well in the first-year program, this may be a predictor

for their success in the final year of study; otherwise such students may be classified as being unsuitable for the program and withdrawn. The skills that are lacking for this category of students in relation to the first year of training could provide useful information for the admissions officers to examine during revision of admission procedures.

The findings of this study may be useful also to the West African Examination Council (WAEC), a government body responsible for the administration of the West African School Certificate (WASC), and to high schools. The WAEC could incorporate the suggestions into the students' examinations at the end of their high school attendance, while the administrators of the high schools may include certain ideas in their art curricula.

2. Differences in the training patterns from the two academic institutions, as well as the findings concerning the performance of students in the two institutions, provide some modest information for counselors and sponsors regarding the predictive implications of academic achievement and other student characteristics. If other things are constant, the information from this study might enlighten students on their preferences between the two types of institutions. Additional information derived from interacting WASC and entrance examination scores,

as well as interactions between weaving and the polytechnic versus university variable, tends to predict for certain categories of students how well they are likely to perform in either of the two programs. Based on the performance of such students in WASC Fine Art scores and entrance examinations, the counselors, sponsors, and even the students themselves can be provided with information adequate for their choice of academic institution.

3. The academic institutions' policy-makers may need to study with care their decisions on both evaluation criteria and selection of evaluators for the students' final-year coursework. The study proved that apparently there is a problem of reliability in the way that examiners score students. Significantly, the examiners who have doctorates tend to rate students much higher in their final year than do examiners with lesser qualifications. The reasons responsible for this anomaly need attention and action.

4. Since the review of the literature indicates that students' and examiners' characteristics are not reliable predictors of students' performance and this study confirms such findings but also indicates that there are apparently other contributing factors that may be plausible but not considered, academic administrators need to exercise care in any actions related to such characteristics.

5. Studies show that there has been much reliance on academic grades as predictors of obtaining certain types of employment. Although this study partially indicates that the concept may be true, other student characteristics have been found to be equally related to different types of graduate employment. There is obviously a need for action, both academically and administratively, to explore other student characteristics which may tend to be related to securing employment. In attempting to do this, employers need to be given adequate information on how to interpret the students' evaluations, as this may be relevant to job requirements. The outcome of this exercise may provide students with better preparation that will enable them to secure jobs more related to their pattern of training, such as in industry. The instructors also need to reevaluate the content as well as the teaching methods of the patterns of training students so that more predictive information about certain jobs related to the students' training may be available.

6. Since part of the findings of the study seem to indicate that, in many areas, there appear to be similarities in the training of students in the two types of academic institutions, there is need for both administrative and curricular decisions which should redefine the goals and objectives as well as the content of the two programs.

Evidently, student career goals have not been defined for the two types of institutions. Academic policy-makers, therefore, need to create a liaison with employers of labor in order to coordinate production and employment of graduates. It may, however, be noted that the literary aspects of the programs are only partially examined in this study since they are not usually included in the textile design students' coursework exhibition. This may affect some of the findings of this study. Perhaps the university tends to place greater emphasis on literary as opposed to handcrafts aspects.

Recommendations for Future Research

On the basis of the findings, conclusions, and implications of this study, the following recommendations for future research are made.

1. An investigation should be made that uses the perceptions of the deans, instructors, heads of departments, students, workers, and employers to examine the issue of the programs in the two types of Nigerian academic institutions. Such an investigation could be used to compare the results of individuals' perceptions with the quasi-experimental type of results obtained in this study.

2. A follow-up investigation should be conducted which will replicate data collection procedures used in this study and possibly add others. Such data should be

analyzed with different statistical procedures. The findings can be examined to determine whether there are differences in relation to the findings from this study and also to establish factors that may have been responsible for such differences.

3. During the next five and ten years, respectively, follow-up studies, using the data in this study, may be pertinent. Such further research may show what becomes of the graduates during this time period in or out of their field of study. It may also provide information in relation to the academic programs and subsequent employment.

4. Since first-year scores have been found to be significantly related to final-year scores to a greater extent than any other preparation that the students might have had before admission, research will be pertinent that investigates second- and third-year scores in addition to those of the first year. It will enable one to determine whether students' performances are incrementally improving or not according to the years that they spend in academic institutions.

5. Further investigations should be made with respect to the relevance of instructors' and examiners' qualifications and experience to the evaluation of the students' work.

6. In view of the increasing number of universities now being created by states and private organizations in

Nigeria, an investigation should be carried out using an alternative selected population technique and perhaps involving an increased number in the samples. This may affect the significance level and provide reasons for any possible difference observed.

7. This study has tried to examine the statistical reliability of the variables used; additional research is required to investigate the practical impact of the findings on individuals and programs.

8. A comprehensive investigation, using both literary and studio aspects of students' programs as a case study in the two types of institutions, will need to be carried out in order to establish the areas where individual institutions lay more emphasis.

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APPENDIX A

LOCATION OF NIGERIAN UNIVERSITIES AND POLYTECHNICS UNDER STUDY



Fig. 1--The universities of Nigeria (1--Ahmadu Bello University,* 2--University of Benin,* 3--University of Calabar, 4--University of Ibadan, 5--University of Ife,* 6--University College of Ilorin, 7--University of Jos, 8--University College of Kano (Bayero University College), 9--University of Lagos,* 10--University of Maiduguri, 11--University of Nigeria,* 12--University College of Port Harcourt, 13--University of Sokoto).

*Universities included in the sample for the study.



Fig. 2--The polytechnics of Nigeria (1--Yaba College of Technology, Yaba, Lagos;* 2--Auchi Polytechnic, Auchi;* 3--Kaduna Polytechnic, Kaduna;* 4--The Polytechnic Ibadan, Ibadan;* 5--College of Science and Technology, Port Harcourt; 6--College of Technology, Calabar; 7--Kwara State College of Technology, Ilorin; 8--Institute of Management and Technology, Enugu;* 9--Katsina College of Arts, Science, and Technology, Kaduna; 10--Ramat Polytechnic, Maiduguri; 11--Sokoto State College of Technology, Birinin Kebbi; 12--Federal Polytechnic, Akure; 13--Federal Polytechnic, Bida; 14--Federal Polytechnic, Ida; 15--Lagos State College of Science and Technology, Lagos; 16--Institute for Higher Education, Kano; 17--Murtala College of Arts, Science, and Technology, Makurdi; 18--College of Technology, Owerri; 19--Ogun State Polytechnic, Abeokuta; 20--Plateau State Polytechnic, Bukuru; 21--Federal Polytechnic, Yola; 22--Federal Polytechnic, Buchi; 23--Federal Polytechnic, Ilaro; 24--The Polytechnic Owo, Owo), 1980.

*Polytechnics included in the sample for the study.

APPENDIX B

DATA GATHERED BY STUDY INSTRUMENT AND SUPPLEMENTARY INFORMATION

TABLE XV

COMPLETE DATA ASSEMBLED FROM FIVE UNIVERSITIES AND FIVE POLYTECHNICS IN NIGERIA

Student No.	Students											
	Age	Sex	Finsup	State	WASC	PORTF	ENTRAN	FYRCW	LYRENT	LYRINT	Employ	Loc	TYPE
1	1	1	3	4	74	70	72	69	66	68	1	4	1
2	1	0	1	4	69	68	70	71	69	72	1	4	1
3	2	0	2	4	70	69	66	65	63	66	1	4	1
4	2	1	1	2	64	62	61	59	58	59	2	4	1
5	2	1	2	4	59	60	62	57	57	58	2	4	1
6	1	1	1	4	56	55	54	55	52	50	4	4	1
7	2	0	3	4	63	61	60	58	57	56	1	4	1
8	3	1	1	5	52	53	52	50	51	53	4	4	1
9	3	1	1	2	49	50	51	49	50	50	2	4	1
10	2	1	3	4	60	58	56	57	54	53	3	4	1
11	2	1	2	4	53	54	53	52	51	53	4	4	1
12	1	0	1	3	51	50	52	51	50	49	3	4	1
13	2	1	1	3	62	60	61	60	59	57	1	4	1
14	2	1	1	4	55	52	53	50	49	50	4	4	1
15	1	1	3	1	64	60	65	67	63	68	1	5	1
16	2	1	1	2	63	59	63	64	65	65	4	5	1
17	2	1	3	2	60	63	58	66	61	63	1	5	1
18	3	0	2	2	58	60	63	61	59	60	2	5	1
19	3	0	2	3	53	52	50	53	50	55	2	5	1
20	2	1	3	4	61	58	60	62	62	67	2	5	1
21	1	1	2	3	49	53	48	51	49	50	3	5	1
22	2	1	3	4	70	69	73	67	63	65	3	5	1
23	3	1	1	5	65	66	67	64	62	62	3	5	1
24	1	1	3	5	71	70	69	70	68	72	3	5	1
25	1	0	1	5	56	58	57	55	53	55	3	5	1
26	2	1	1	4	55	59	58	57	50	52	3	5	1
27	3	0	1	5	58	56	57	54	49	51	1	5	1
28	3	1	1	5	60	63	62	60	53	60	2	5	1
29	2	1	2	3	51	55	56	53	51	53	4	5	1
30	1	0	3	5	60	63	61	59	59	59	4	5	1
31	2	0	1	2	56	58	60	58	59	61	2	2	1
32	1	1	4	2	54	56	57	56	59	63	4	2	1
33	1	1	1	3	61	62	59	54	50	53	4	2	1
34	2	1	2	4	64	63	65	61	52	51	2	2	1
35	2	1	1	2	63	66	67	63	53	53	2	2	1
36	3	0	4	2	58	57	59	52	57	58	1	2	1
37	3	1	2	5	59	58	56	54	59	60	4	2	1
38	1	1	1	5	65	61	59	62	63	62	4	2	1
39	2	0	1	4	71	75	69	69	61	61	1	2	1

TABLE XV--Continued

					External/Internal Examiners						
Weave	Paper	Fabric	Dyeing	Special	E/IAGE	E/ISEX	E/IEXP	E/INat.	E/IREP	E/IQUAL	E/ISTAT
9	8	6	4	3	1	1	3	N	1	1	1
9	8	6	4	3	1	1	3	N	1	1	1
9	8	6	4	3	1	1	3	N	1	1	1
9	8	6	4	3	1	1	3	N	1	1	1
9	8	6	4	3	1	1	3	N	1	1	1
9	8	6	4	3	1	1	3	N	1	1	1
9	8	6	4	3	1	1	3	N	1	1	1
9	8	6	4	3	1	1	3	N	1	1	1
9	8	6	4	3	1	1	3	N	1	1	1
9	8	6	4	3	1	1	3	N	1	1	1
9	8	6	4	3	1	1	3	N	1	1	1
9	8	6	4	3	1	1	3	N	1	1	1
9	8	6	4	3	1	1	3	N	1	1	1
12	12	9	3	4	2	1	3	N	0	1	1
12	12	9	3	4	2	1	3	N	0	1	1
12	12	9	3	4	2	1	3	N	0	1	1
12	12	9	3	4	2	1	3	N	0	1	1
12	12	9	3	4	2	1	3	N	0	1	1
12	12	9	3	4	2	1	3	N	0	1	1
12	12	9	3	4	2	1	3	N	0	1	1
12	12	9	3	4	2	1	3	N	0	1	1
12	12	9	3	4	2	1	3	N	0	1	1
12	12	9	3	4	2	1	3	N	0	1	1
12	12	9	3	4	2	1	3	N	0	1	1
12	12	9	3	4	2	1	3	N	0	1	1
2	9	6	4	4	1	1	2	N	1	1	1
2	9	6	4	4	1	1	2	N	1	1	1
2	9	6	4	4	1	1	2	N	1	1	1
2	9	6	4	4	1	1	2	N	1	1	1
2	9	6	4	4	1	1	2	N	1	1	1
2	9	6	4	4	1	1	2	N	1	1	1
2	9	6	4	4	1	1	2	N	1	1	1
2	9	6	4	4	1	1	2	N	1	1	1

TABLE XV--Continued

Student No.	Students												
	Age	Sex	Finsup	State	WASC	PORTF	ENTRAN	FYRGW	LYRENT	LYRINT	Emplov	Loc	TYPE
40	2	0	2	1	58	59	57	49	53	52	3	2	1
41	2	1	3	2	63	62	60	58	58	57	3	2	1
42	3	1	2	2	61	60	59	57	56	58	2	2	1
43	3	1	3	3	66	63	60	60	61	60	4	2	1
44	2	0	3	5	59	58	57	56	57	57	4	2	1
45	1	1	1	3	64	60	59	57	60	63	2	3	1
46	2	1	2	3	66	59	61	58	62	65	4	3	1
47	1	1	1	2	59	57	58	56	61	64	4	3	1
48	1	0	2	3	63	60	62	61	58	59	2	3	1
49	1	1	1	4	61	58	59	55	57	52	2	3	1
50	2	0	1	3	58	56	53	50	60	59	1	3	1
51	3	1	2	1	53	50	54	54	53	60	1	3	1
52	3	0	1	1	55	52	50	53	50	55	1	3	1
53	2	1	3	3	62	59	57	58	56	54	3	3	1
54	3	1	1	3	56	52	50	51	53	56	2	3	1
55	2	1	3	4	65	61	59	58	57	59	1	3	1
56	2	0	3	3	54	53	51	50	51	50	4	3	1
57	3	1	3	5	61	58	57	53	52	53	4	3	1
58	3	1	1	1	55	52	51	58	50	57	1	1	1
59	2	1	1	2	58	60	60	56	62	64	2	1	1
60	1	1	2	1	59	64	65	62	65	68	1	1	1
61	3	0	1	3	61	51	52	58	54	53	2	1	1
62	2	1	3	1	63	50	58	60	59	61	2	1	1
63	2	1	3	2	52	43	52	49	51	54	1	1	1
64	3	1	2	1	48	52	49	50	49	54	3	1	1
65	2	1	1	1	59	60	51	50	53	53	1	1	1
66	2	0	1	3	58	68	55	55	57	58	3	1	1
67	2	0	2	2	55	53	60	59	65	60	1	1	1
68	3	1	1	4	58	51	56	53	57	59	4	1	1
69	1	1	2	4	56	48	53	51	52	55	4	1	1
70	2	1	1	2	60	59	50	52	49	53	1	1	1
71	3	1	1	4	55	49	56	57	58	60	4	1	1
72	2	0	1	1	58	68	46	50	47	49	4	1	1
73	3	1	2	1	67	63	69	67	76	68	1	1	1
74	2	0	1	2	58	57	59	60	55	59	1	2	0
75	2	1	1	2	53	53	55	55	70	74	1	2	0
76	3	0	1	5	52	54	56	60	53	57	4	2	0
77	2	1	3	5	50	52	54	60	54	56	1	1	0
78	2	0	3	2	54	51	52	60	58	59	3	2	0
79	3	0	3	5	52	50	51	59	65	67	1	2	0
80	1	1	1	2	70	69	68	70	72	76	4	2	0
81	1	1	1	2	71	68	66	81	74	82	4	2	0

TABLE XV--Continued

					External/Internal Examiners						
Weave	Paper	Fabric	Dyeing	Special	E/IAGE	E/ISEX	E/IEXP	E/INat.	E/IREP	E/IQUAL	E/ISTAT
2	9	6	4	4	1	1	2	NN	1	1	1
2	9	6	4	4	1	1	2	NN	1	1	1
2	9	6	4	4	1	1	2	NN	1	1	1
2	9	6	4	4	1	1	2	NN	1	1	1
2	9	6	4	4	1	1	2	NN	1	1	1
8	8	6	4	4	1	1	1	N	1	2	1
8	8	6	4	4	1	1	1	N	1	2	1
8	8	6	4	4	1	1	1	N	1	2	1
8	8	6	4	4	1	1	1	N	1	2	1
8	8	6	4	4	1	1	1	N	1	2	1
8	8	6	4	4	1	1	1	N	1	2	1
8	8	6	4	4	1	1	1	N	1	2	1
8	8	6	4	4	1	1	1	N	1	2	1
8	8	6	4	4	1	1	1	N	1	2	1
8	8	6	4	4	1	1	1	N	1	2	1
8	8	6	4	4	1	1	1	N	1	2	1
8	8	6	4	4	1	1	1	N	1	2	1
8	8	6	4	4	1	1	1	N	1	2	1
9	12	9	9	3	1	1	1	N	0	1	1
9	12	9	9	3	1	1	1	N	0	1	1
9	12	9	9	3	1	1	1	N	0	1	1
9	12	9	9	3	1	1	1	N	0	1	1
9	12	9	9	3	1	1	1	N	0	1	1
9	12	9	9	3	1	1	1	N	0	1	1
9	12	9	9	3	1	1	1	N	0	1	1
9	12	9	9	3	1	1	1	N	0	1	1
9	12	9	9	3	1	1	1	N	0	1	1
9	12	9	9	3	1	1	1	N	0	1	1
9	12	9	9	3	1	1	1	N	0	1	1
9	12	9	9	3	1	1	1	N	0	1	1
9	12	9	9	3	1	1	1	N	0	1	1
9	12	9	9	3	1	1	1	N	0	1	1
6	9	6	6	4	1	1	1	N	0	2	1
6	9	6	6	4	1	1	1	N	0	2	1
6	9	6	6	4	1	1	1	N	0	2	1
6	9	6	6	4	1	1	1	N	0	2	1
6	9	6	6	4	1	1	1	N	0	2	1
6	9	6	6	4	1	1	1	N	0	2	1
6	9	6	6	4	1	1	1	N	0	2	1

TABLE XV--Continued

Student No.	Students												
	Age	Sex	Finsup	Scare	WASC	PORTF	ENTRAN	FYRCW	LYRENT	LYRINT	Employ	Loc	TYPE
82	2	1	1	2	65	60	59	76	73	78	1	2	0
83	2	1	2	2	65	61	60	83	80	85	1	2	0
84	2	1	1	2	76	68	69	73	70	76	2	2	0
85	2	1	1	2	62	59	59	79	73	79	2	2	0
86	2	1	2	2	48	53	51	54	53	55	1	1	0
87	3	0	1	1	53	56	52	56	55	52	3	1	0
88	3	1	1	1	51	54	50	53	58	61	1	1	0
89	1	0	2	3	61	59	53	60	56	58	2	1	0
90	2	0	1	3	59	48	49	46	48	51	1	1	0
91	2	1	1	1	53	51	50	49	51	50	3	1	0
92	3	0	3	1	52	50	55	48	52	52	1	1	0
93	3	1	2	3	66	65	61	64	66	68	1	1	0
94	2	1	3	1	49	51	53	52	56	56	2	1	0
95	2	1	3	5	61	60	59	61	58	59	3	1	0
96	1	0	1	5	52	50	53	55	50	51	3	1	0
97	1	1	1	1	55	53	58	53	51	51	2	1	0
98	1	0	2	1	54	51	52	51	49	53	1	1	0
99	2	1	1	2	51	50	49	50	51	52	1	1	0
100	3	1	1	2	47	49	51	46	47	49	2	1	0
101	1	0	1	2	53	52	67	49	54	50	1	5	0
102	1	1	1	2	64	60	60	53	55	53	2	5	0
103	2	1	2	2	53	49	53	51	45	40	4	5	0
104	1	0	2	4	54	50	55	49	53	52	1	5	0
105	2	1	2	3	66	59	50	55	56	56	2	5	0
106	3	0	2	4	55	56	62	54	52	51	2	5	0
107	3	1	2	5	63	58	53	55	54	54	4	5	0
108	3	1	1	5	53	51	58	51	49	49	2	5	0
109	1	1	3	1	43	48	56	51	54	53	1	5	0
110	3	0	3	5	55	51	49	56	46	45	3	5	0
111	2	1	1	3	53	52	57	51	47	42	4	5	0
112	3	1	2	5	44	49	54	53	50	48	3	5	0
113	1	1	2	2	43	47	53	48	45	43	3	5	0
114	1	1	1	5	65	60	61	57	52	52	1	5	0
115	2	1	1	3	64	61	59	63	65	70	1	3	0
116	2	1	2	3	61	59	62	65	63	65	4	3	0
117	2	1	1	4	68	64	63	60	61	68	1	3	0
118	3	0	2	3	59	56	58	59	57	59	2	3	0
119	3	0	1	4	57	58	53	56	53	55	2	3	0
120	2	1	2	3	49	51	50	53	50	52	4	3	0
121	2	0	1	3	62	63	65	66	62	66	1	3	0
122	1	1	3	5	53	55	52	52	51	53	3	3	0
123	2	1	1	5	55	60	61	58	58	63	4	3	0

TABLE XV--Continued

					External/Internal Examiners						
Weave	Paper	Fabric	Dyeing	Special	E/IAGE	E/ISEX	E/IEXP	E/INat.	E/IREP	E/IQUAL	E/ISTAT
6	9	6	6	4	1	1	1	N	0	2	1
6	9	6	6	4	1	1	1	N	0	2	1
6	9	6	6	4	1	1	1	N	0	2	1
6	9	6	6	4	1	1	1	N	0	2	1
18	2	1	3	12	1	1	1	N	1	1	1
18	2	1	3	12	1	1	1	N	1	1	1
18	2	1	3	12	1	1	1	N	1	1	1
18	2	1	3	12	1	1	1	N	1	1	1
18	2	1	3	12	1	1	1	N	1	1	1
18	2	1	3	12	1	1	1	N	1	1	1
18	2	1	3	12	1	1	1	N	1	1	1
18	2	1	3	12	1	1	1	N	1	1	1
18	2	1	3	12	1	1	1	N	1	1	1
18	2	1	3	12	1	1	1	N	1	1	1
18	2	1	3	12	1	1	1	N	1	1	1
18	2	1	3	12	1	1	1	N	1	1	1
18	2	1	3	12	1	1	1	N	1	1	1
6	9	4	4	4	1	1	1	N	1	3	1
6	9	4	4	4	1	1	1	N	1	3	1
6	9	4	4	4	1	1	1	N	1	3	1
6	9	4	4	4	1	1	1	N	1	3	1
6	9	4	4	4	1	1	1	N	1	3	1
6	9	4	4	4	1	1	1	N	1	3	1
6	9	4	4	4	1	1	1	N	1	3	1
6	9	4	4	4	1	1	1	N	1	3	1
6	9	4	4	4	1	1	1	N	1	3	1
6	9	4	4	4	1	1	1	N	1	3	1
6	9	4	4	4	1	1	1	N	1	3	1
6	9	4	4	4	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1

TABLE XV--Continued

Student No.	Students												
	Age	Sex	Finsup	State	WASC	PORTF	ENTRAN	FYRCW	LYRENT	LYRINT	Employ	Loc	TYPE
124	2	1	3	3	60	58	63	61	56	59	3	3	0
125	3	0	3	3	58	55	56	57	53	58	2	3	0
126	2	1	1	1	65	62	64	62	61	66	1	3	0
127	2	1	3	3	68	66	65	64	68	71	1	3	0
128	2	1	2	2	58	59	61	60	57	59	2	3	0
129	2	1	1	2	61	60	64	63	60	64	3	3	0
130	2	1	2	3	53	52	50	51	50	54	4	3	0
131	2	0	1	3	49	48	50	49	48	51	4	3	0
132	2	0	1	4	63	60	61	64	62	64	1	4	0
133	2	1	1	4	58	56	55	52	51	55	4	4	0
134	3	1	2	3	55	53	52	53	52	52	4	4	0
135	2	1	3	4	60	59	61	58	57	59	1	4	0
136	3	1	3	3	52	50	54	51	51	53	2	4	0
137	2	0	1	4	49	48	50	53	52	32	2	4	0
138	3	0	2	5	54	52	56	51	50	54	3	4	0
139	2	1	1	4	66	67	68	66	64	60	1	4	0
140	1	1	1	3	61	59	58	60	56	54	3	4	0
141	3	1	1	4	53	52	55	53	53	56	2	4	0
142	2	1	3	2	50	50	53	52	51	50	4	4	0

Students' age (Age)
1 = Below 25
2 = 26-30
3 = Over 30

Sex (Sex)
1 = Male
0 = Female

Financial support (Finsup)
1 = Scholarship
2 = Loan
3 = Private

State of origin/ Location (State/Loc)
1 = North
2 = West
3 = Midwest
4 = East
5 = Lagos

West African School Certificate score/Score on portfolio presentation/Entrance examination score/First-year coursework score/Final-year coursework score--external examiner/ Final-year coursework score--internal examiner (WASC/PORTF/ENTRAN/ FYRCW/LYRENT/LYRINT)
75-100= First class or distinction (A)
60-74 = Second class upper or credit (B)
50-59 = Second class lower or merit (C)
40-49 = Third class or pass (D)

Employment (Employ)
1 = Industry
2 = Civil service
3 = Private
4 = Teaching

Type of institution
1 = University
0 = Polytechnic

Hours allotted to weaving (Weave)
Number of hours

Hours allotted to paper design (Paper)
Number of hours

Hours allotted to fabric printing (Fabric)
Number of hours

Hours allotted to resist dyeing (Dyeing)
Number of hours

TABLE XV--Continued

					External/Internal Examiners						
Weave	Paper	Fabric	Dyeing	Special	E/IAGE	E/ISEX	E/IEXP	E/INat.	E/IREP	E/IQUAL	E/ISTAT
9	6	4	6	2	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1
9	6	4	6	2	1	1	1	N	1	3	1
9	6	6	4	4	2	2	1	NN	0	2	1
9	6	6	4	4	2	2	1	NN	0	2	1
9	6	6	4	4	2	2	1	NN	0	2	1
9	6	6	4	4	2	2	1	NN	0	2	1
9	6	6	4	4	2	2	1	NN	0	2	1
9	6	6	4	4	2	2	1	NN	0	2	1
9	6	6	4	4	2	2	1	NN	0	2	1
9	6	6	4	4	2	2	1	NN	0	2	1
9	6	6	4	4	2	2	1	NN	0	2	1
9	6	6	4	4	2	2	1	NN	0	2	1

Hours allotted to special projects (Special)
Number of hours

External/internal examiners' age (E/IAGE)
1 = 36 and over
2 = 31-35
3 = 30 and below

External/internal examiners' sex (E/ISEX)
1 = Male
2 = Female

External/internal examiners' experience
1 = 1-3 years
2 = 4-10 years
3 = Over 10 years

External/internal examiners' nationality (E/INat.)
N = Nigerian
NN = Non-Nigerian

Type of institution represented by external/internal examiners (E/IREP)
1 = University
0 = Polytechnic

External/internal examiners' qualifications (E/IEQUAL
1 = Ph.D.
2 = Professional
3 = M.A., M.S.
4 = HND
5 = B.A., B.S.

External/internal examiners' status (E/ISTAT)
1 = Senior lecturer and above
2 = Below senior lecturer

TABLE XVI

COMPLETE DISTRIBUTION OF SUBJECTS AND ACADEMIC INSTITUTIONS SELECTED AS SAMPLES FOR THE STUDY

Institution	Students	Examiners
Universities		
University of Nigeria	14	4
University of Lagos	16	4
Ahmadu Bello University	16	4
University of Ife	14	4
University of Benin	13	4
Total	73	20
Polytechnics		
Ibadan Polytechnic	12	5
Kaduna Polytechnic	15	4
Yaba College of Technology	14	3
Auchi Polytechnic	17	3
Institute of Management and Technology, Enugu	11	3
Total	69	18
Grand total	142	38

Total subjects = 180.

TABLE XVII

TYPICAL MARKING SCHEME FOR TEXTILE DESIGN IN NIGERIAN UNIVERSITIES AND POLYTECHNICS

Coursework Areas Examined	Marks Obtainable
Woven fabrics	100
Printed fabrics	100
Paper design	100
Resist dyeing	100
Special projects	100

TABLE XVIII

DISTRIBUTION OF MARKS IN EACH AREA

Component	Marks Obtainable
Drawing	20
Color	20
Suitability/subject matter	20
Organization	20
Originality	20
Total	100

TABLE XIX

MEAN, STANDARD DEVIATION, AND SAMPLE SIZE FOR ALL STUDY VARIABLES

Variable	Mean	Standard Deviation	Sample Size
Age 1	0.486	0.502	142
Age 2	0.373	0.485	142
Sex	0.690	0.464	142
Finsup 1	0.268	0.444	142
Finsup 2	0.239	0.428	142
State 1	0.218	0.415	142
State 2	0.225	0.419	142
State 3	0.225	0.419	142
State 4	0.197	0.399	142
WASC	58.190	6.438	142
ENTRAN	57.592	5.704	142
LYRENT	56.458	6.770	142
Employ 1	0.254	0.437	142
Employ 2	0.183	0.388	142
Employ 3	0.246	0.432	142
Loc 1	0.183	0.388	142
Loc 2	0.211	0.410	142
Loc 3	0.176	0.382	142
Loc 4	0.211	0.410	142
TYPE	0.514	0.502	142
Weave	8.958	4.032	142
Paper	8.155	2.918	142
Fabric	5.711	2.345	142
Dyeing	4.754	1.819	142
Special	4.394	2.711	142
EAGE 1	0.099	0.299	142
EAGE 2	0.0	0.0	142
ESEX	1.077	0.268	142
EEXP 1	0.218	0.415	142
EEXP 2	0.782	0.415	142
ENation	1.268	0.444	142
EREP 1	0.197	0.399	142
EREP 2	0.077	0.268	142
EQUAL 1	0.162	0.370	142
EQUAL 2	0.218	0.415	142
EQUAL 3	0.0	0.0	142
EQUAL 4	0.0	0.0	142
ESTAT	1.000	0.0	142
IAGE 1	0.472	0.501	142

TABLE XIX--Continued

Variable	Mean	Standard Deviation	Sample Size
IAGE 2	0.077	0.268	142
ISEX	1.380	0.487	142
IEXP 1	0.296	0.458	142
IEXP 2	0.127	0.334	142
INation	1.310	0.464	142
IREP 1	0.486	0.502	142
IREP 2	0.0	0.0	142
IQUAL 1	0.197	0.399	142
IQUAL 2	0.331	0.472	142
IQUAL 3	0.092	0.289	142
IQUAL 4	0.310	0.464	142
ISTAT	1.711	0.455	142
PORTF	53.280	5.042	142
FYRCW	58.762	7.432	142
LYRINT	54.363	6.201	142
X_{21}	4.183	4.717	142
X_{22}	5.113	5.163	142
X_{23}	3.761	3.822	142
X_{24}	2.507	2.922	142
X_{25}	1.845	1.835	142
X_{26}	29.908	29.489	142

APPENDIX C

CORRESPONDENCE WITH THE NIGERIAN FEDERAL MINISTRY OF EDUCATION AND INDIVIDUAL INSTITUTIONS OF HIGHER EDUCATION

Sheriffdeen Abayomi Adetoro
P.O. BOX 9919 NTSU
Denton, Tx 76203
January 24, 1983
Your Ref. ED/SC/80/0213/44 of
22 July 1981

Permanent Secretary Federal
Ministry of Education
Scholarship Division
Lagos Nigeria.

Dear Madam:

This letter is to request an airplane ticket to enable me travel to Nigeria, collect data for my dissertation, and return to the U.S. to complete the study in compliance with the requirements regarding my scholarship award. I am seeking your approval to enable the Consulate General of Nigeria in New York to issue me a plane ticket to Nigeria and back.

The proposed title of my doctoral dissertation is: "Factors Affecting the Quality of Programes and the Types of Jobs Secured by Textiles Design Graduates of the Polytechnics and Universities in Nigeria" and requires my collecting data from five Nigerian Polytechnics and five universities. This means that my information sources are based in ZARIA, KADUNA, NSUKKA, ENUGU, BENNIN, AUCHI, LAGOS, IBADAN and ILE-IFE.

Apparently no study has been conducted in this area before. Therefore, I shall appreciate your early response in support of this pioneering research. At the completion of the study it is hoped that a useful contribution will have been made to textile education in Nigeria.

I plan to defend my dissertation proposal early enough to enable me travel by the end of March or early April, 1983. My major professor, Dr. Dwane Kingery, will be writing a separate letter to you in support of this request.

I shall appreciate your early response so that I can

embark on the trip as scheduled. Thank you for the opportunity given to me to conduct the research.

Your Sincerely

S.A. Adetoro.

February 11, 1983

Permanent Secretary Federal
Ministry of Education
Scholarship Division
Lagos Nigeria

Re: Sheriffdeen Abavomi Adetoro
ED/SC/80/0213/44

Dear Madam:

This letter is in support of the request of Sheriff Adetoro for financial support for a trip to Nigeria and return. Mr. Adetoro needs to visit Nigeria to gather data for his doctoral dissertation.

The proposed title of his dissertation is "Factors Affecting the Quality of Programs and Types of Positions Secured by Textile Design Graduates of the Polytechnics and Universities in Nigeria." This study would require his collecting data from a number of institutions in Nigeria.

Current investigation reveals little research in this area. Mr. Adetoro, therefore, will be somewhat of a pioneer and will need to actually be in Nigeria to complete the data collection.

His progress toward the Ph.D. degree is quite satisfactory. This step, of course, is needed to complete degree requirements.

Sincerely,

Dwane Kingery

Dwane Kingery
Major Professor

/lk

March 22, 1983

Permanent Secretary Federal
Ministry of Education
Scholarship Division
Lagos Nigeria

Re: Sheriffdeen Abavomi Adetoro
ED/SC/80/0213/44

Dear Madam:

On February 11, 1983, I wrote the attached letter supporting the request of Sheriffdeen Adetoro for financial assistance for returning to Nigeria to collect data for his doctoral dissertation. Mr. Adetoro informs me that the request did not reach you in time to be processed.

Today, his dissertation proposal was officially accepted in the College of Education, and he tells me he has purchased a one-way ticket to Nigeria and is scheduled to leave March 31, 1983. Please accept this as a request that your office do everything possible to provide him with reimbursement for his ticket to Nigeria and with a return ticket to the United States.

Your country should be proud of Mr. Adetoro. He is an excellent representative of your people.

Sincerely,

Dwane Kingery

Dwane Kingery
Major Professor

/lk

Attachment

FEDERAL MINISTRY OF EDUCATION

_____ DIVISION

_____

P.M.B. No. 12373

Telegrams _____

Telephone _____

Ref. No. FD/ /S/ /9/0213/37

Date 11th [illegible], 1983

The Consulate General of Nigeria,
575 Lexington Avenue,
New York, N.Y. 10022,
U.S.A.

re: Federal Scholar
Sheriffdeen Abayomi Adetoro
Field Trip to Nigeria

I am directed to refer to my letter EC/SC/PG/30/0213/44 dated 22nd July, 1982, introducing the above-named scholar to your office, and to convey approval for his field research trip to Nigeria for one month and five days from the 31st of March to the 4th of May, 1983 inclusive which entitles him to a return air fare (U.S.A. - Nigeria - U.S.A.), or refund on his surrendering to your office of the air ticket stumps. Copies of this letter have been forwarded to the scholar and the school.

I. O. Iya-Nya,
for Permanent Secretary.

CC.

Mr. Sheriffdeen Abayomi Adetoro,
P. O. Box 9919 NTSU,
Denton Tx 76203.

Above for your information. You are also entitled to a research allowance of ₦100 a month and pro rata for five days payable locally by the Accounts Unit here when you call with an application for it.

I. O. Iya-Nya,
for Permanent Secretary.

PERMANENT SECRETARY
SCHOLARSHIP SECTION
Date 13 04 83
LAGOS.
FEDERAL MINISTRY OF EDUCATION

DEPARTMENT OF FINE ART
THE POLYTECHNIC
IBADAN, NIGERIA

Telegrams & Cablegrams: POLYTECHNIC IBADAN
Telephone: 410151-4

YOUR REF:
OUR REF: DFA/1b/97

15th June, 83
19...

Mr. S. A. Adetoro,
Box 9919 NTSU,
Denton Texas 76203

Dear Sir,

RE: MR. YOMI ADETORO, RESEARCH STUDENT
VERIFICATION FOR FIELD WORK, DATA COLLATION

Following your letter dated 20th January, 1983 in which you had indicated your desire to arrive in this institution to carry out field work and data collation in the Department of Fine Art in relation to Textile Education, the department had got every data ready for your arri val.

You did arrive on the 17th April, 1983 and the Coordinator of Textile in my department assisted by a few lecturers, and together with myself, you had conducted the field work, collation of data on aspects related to Textile Design/Technology Education, specifically inthe Polytechnic, Ibadan. My staff here did really gain a lot from the exercise which lasted for four days.

It is my opinion that the theme of your research is long overdue - bearing in mind the crucial place and high premium placed on that aspect of education in the development of technology in this country.

It is needless to say that the institution and this department in particular is eargerly awaiting the outcome of this interesting investigation which we know will yeild great dividents to both students, lecturers and scholars who will be using the proceeds.

The development of textile education has not before now received any impetus and this your research is the one that will raise its status and make our Nigerian education/ technology policy makers aware of the areas that had hitherto been neglected.

Our regards.

Yours faithfully,

R. C. E. ADAMAIYE,
HEAD OF DEPARTMENT
DEPARTMENT OF FINE ART
THE POLYTECHNIC, IBADAN

DEPARTMENT OF INDUSTRIAL DESIGN
HEAD OF DEPARTMENT: Y. D. HASSAN
Telephone 31581/3 Direct. 31231 Telegr. Unibello Zaria

Your Ref:

Our Ref: F. ID/01/83

6th July, 1983

Alh. S. A. Adetoro,
NTSU Box 9919
Denton TX 76203

Dear Alh. S.A. Adetoro,

We wish to thank you for your letter with regards your research at the North Texas State University - it is a welcome idea particularly considering the significance of the topic you have chosen. In view of this the Department was pleased to render all the necessary help in collecting data during your sojourn. We were specifically happy that you got all the information you wanted as required from our institution. We hope that the findings will serve as a resource for the government as well as individuals in institutions of learning.

We look forward to your return on completion of the program.

Yours sincerely,

Y. D. Hassan
HEAD OF DEPARTMENT.

YDH/ga

AHMADU BELLO UNIVERSITY ... ZIA NIGER

APPENDIX D

COVERING LETTER TO CHAIRPERSONS IN ACADEMIC INSTITUTIONS SURVEYED IN THE STUDY

Sheriff Abayomi Adetoro
P.O. Box 9919, NT Station
Denton, Texas 76203 U.S.A.
March 15, 1983

[Addressed to each chairperson
on the attached list]

Dear Sir:

Considerable efforts have been made by social scientists and educators through research to determine the factors that relate to students' academic achievement and vocational security. Recent investigations have also shown that some studies have been conducted in determining programs of two types of academic institutions. The same search revealed that very little work has been done in the area of textile design education in Nigeria.

As a doctoral candidate at North Texas State University, I am conducting a study under the supervison of Dr. Dwane Kingery. The study is to investigate "Factors which Will Most Likely Be Associated with the Quality of Programs and the Types of Jobs Secured by Handcrafted Textile Design Graduates of Polytechnics and Universities in Nigeria." In order to complete the study, the investigator needs your assistance in making information about your students who graduated in 1980 available to him. The investigator will personally collect the information in your institution within the next two months.

You are assured that the information will be kept strictly confidential and will not in any way be directly associated with the reported data. We believe that a study of this nature for textile education in Nigeria is unique and timely.

Thank you in advance for your cooperation.

Sincerely,

Sheriff A. Adetoro
Doctoral Candidate
North Texas State University
Denton, Texas 76203 U.S.A.

Mallam Yakubu Hassan
Head of Industrial Design Department
Ahmadu Bello University
Zaria, NIGERIA

Head of Textiles Technology Department
Kaduna Polytechnic
Kaduna, NIGERIA

Head of Art Department
Institute of Management and Technology
Abakaliki Road
Enugu, Anambra State, NIGERIA

Head of Department
Fine Arts Department
University of Ife
Ile-Ife, Oyo State, NIGERIA

Head of Department
Fine Art Department
The Polytechnic
Ibadan, Oyo State, NIGERIA

Head of Department
Creative Arts Department
University of Benin
Benin, Bendel State, NIGERIA

Head of Department
Department of Fine and Applied Arts
Auchi Polytechnic
Auchi, NIGERIA

Head of Department
Department of Fine and Applied Arts
University of Nigeria
Nsukka, NIGERIA

Dean of Faculty
Faculty of Environmental Design
Art and Design Section
University of Lagos
Lagos, NIGERIA

Head of Department
Department of Art and Printing
Yaba College of Technology
Yaba, Lagos, NIGERIA

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