

**TECHNIQUES FOR STIMULATING THE INTEREST AND ASPIRATION OF STUDENTS IN METAL WORK
TRADE IN TECHNICAL COLLEGES IN NIGER STATE**

BY

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2006/2572525BT

**DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY
EDUCATION**

FEDERAL UNIVERSITY OF TECHNOLOGYMINNA, NIGER STATE

OCTOBER, 2012

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**A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY
EDUCATION, SCHOOL OF**

SCIENCE AND SCIENCE EDUCATION, FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA

OCTOBER, 2012

APPROVAL PAGE

This project has been read and approved as meeting the requirement for the Award of bachelor of Technology Education (B.Tech) in Industrial and Technology Education, School of Science and Science Education, Federal University Of Technology, Minna.

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CERTIFICATION

I Ndagi, Mahmud Adamu Mat No 2006/25725BT an undergraduate student of the department of industrial and Technology Education certify that the work embodied in this project is Original and has not been submitted in part or full for any other Diploma or Degree of this or any other University.

Name

Signature

DEDICATION

This project is dedicated to my parent's Alhaji Adamu Ndagi, Hajiya Hajara Adamu Ndagi, Hajiya Hadiza A. Ndagi and Hajiya Juwahirat A. Ndagi.

ACKNOWLEDGEMENTS

First and foremost, I would like to give my sincere gratitude to God Almighty for giving me the wisdom and strength to write this research project. I am also adapted to a number of individuals and groups without whose support; this work would not have been completed.

I owe an enormous debt of gratitude to my supervisor Malam Abdulkadir Muhammad. Whose has patiently and diligently guided me through this research work. I wish to acknowledge the fatherly advice and mistaking effort of my Examiner Malam Abdukadir Muhammad. and level adviser Mall. .B. Kagara and also Malam Abdulkadir Muhammad for co-ordinating my work to the end of my staying in school.

I also wish to acknowledge the fatherly advice of Prof. G.D Momoh, during his lecture and outside his lecture, my gratitude goes to the Head of Department Dr. Ohize for working tirelessly for the department. Not forgetting Mr. Istifanus Kalat for his advice and assistance.

I am also indebted to my departmental lecturers whose through their effort, and understanding have diligently ushered me to this level.

Finally my gratitude goes to all my friends especially my Abba .Y. shehu, Malam Benbella .A. Kolo, Aishat Usman Madami may Almighty Allah reward them for their assistance throughout the course.

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ABSTRACT

This study was designed to investigate the techniques of stimulating the interest of metal work students in technical colleges in Niger state. As a result of students and teachers attitudes towards the teaching of metal technology. Data analyzed in study were gathered by means of questionnaire. Results obtained that technical colleges were not adequately staffed with qualified and professionally trained teachers that can effectively teach the trend to students. Teacher's poor condition of service and school

administrative styles were readily advancing against teaching and learning in the technical colleges in the state. A 2.5 point as taken as the cut-off mean for the respondent's responses to the questionnaire items. The teachers recommended that government should provide quality management and quality assurance techniques should used as implementation techniques control, coordination of materials and human resources should be major priority.

CHAPTER 1

INTRODUCTION

Background of the Study

Technical education can simply be defined as a systematic learning experience design to meet individual for gainful employment in recognizing occupation. Technical education is an aspect of general education designed to develop skills, knowledge, and attitude, understanding abilities, work habit appreciation needed by an individual to enter and make progress in an employment or occupation on a useful and progressive basis. Federal government of Nigeria (FGN, 1981) describes technical education as “that aspect of education which is to the acquisition of practical and applied skills as well as basic science knowledge”. The federal government of Nigeria FGN (2000) sees technical vocational education as a comprehensive learning referring to those aspects of educational progress involving in addition to general education, the study technologies and related science and the acquisition of practical skill, attitude understanding of knowledge relating to occupations in various sections economic and social life.

There are various types of technical education institution outside universities; the pre-vocational and vocational schools at post-primary learn technical colleges, the polytechnics, and colleges of technical teacher education post-secondary level, but for the purpose of this research, the study is restricted to the type of technical education offered in technical colleges. A technical college is that types of institute that offers skill based subject referred to as trades and other basic sciences. It is regarded as the principal vocational institute in Nigeria (okoro, 1993).

Technical colleges provide technical and vocational training for quite a number of occupations including; metalwork, woodwork, building, auto-mechanics, electrical installation, shoe making, printing, sign writing, agricultural mechanics, radio and television serving, tailoring and other. Technical colleges is equivalent to senior secondary school but specially designed to prepare individual to acquirer practical skills, scientific knowledge, and attitude required as craftsmen and technical at sub-professional level.

Technical colleges as one the educational programme offered in the post-primary school is designed for student with special talents, dexterity in practical work or skill which form their interest and choice for such educational career.

However, the development and substances of these interests are being activated national council of colleges of education (NCCE) (1994) sees motivation as an abstract psychological term related to the arousal, control and sustenance of behavior necessary to satisfy a need of achieving a goal. According to Ajibola (1989) motivation is the process of stimulating people to action in achieving a desired goal. Motivation is considered as the force that energized divests and reinforces behavior that is effective in the attainment of desired goals.

Despite all the benefit of technical education to a developing national like Nigeria, the interest of students in this level of technical education are not aroused in achieving their goals which is the acquisition of skills for self reliance and national development. Technical college education has not gained its rightful position of popularity in Nigeria education system. It has an s age long tradition of being the last respected type of education by the generality of the society. This includes the parents who in effect demoralize rather than motivation of the interest of the students in technical colleges.

Magaji (1989) stated that the low interest of student in metal work is due in popularization to technical education. Absence of technical schools, tools and equipments little or no concern about technical education by government and general public. They produce goods for local use and for export. Based on these facts, the state the potentials to have largest number of technical colleges, the best with high motivation students in various trades. Technology is the key that open the door to development of any nation and technical college, education is the foundation upon which this technology is to be butte. Therefore, federal and state governments should come up with such education policies and programme that will help to motivate the interest of students in technical colleges in Niger State.

Statement Of The Problem

There are proofs of Students lack of interest in enrolling for metal work in technical colleges in Niger State. Some educational administrators in technical colleges complain of Students minimum enrolment in metal work unlike other trades like Electrical Electronics trade, building trade and automobile trade which have great influx of enrolment. This Observation could mean that Students lack interest in metal work trade due to inadequate job opportunity in field of metal work after graduation, inadequate orientation on the careers in metal work, the prestige people acclaim of other trades unlike that of metal work, peer pressure, and societal stigmatization to graduates of metal work trade.

Purpose of the Study

The main purpose of this study is to find out the techniques of stimulating the interest of technical college students in metal work practice in Niger State.

- i. To determine the level of students interest tin metal work
- ii. Identify techniques technical that can be used to stimulate metal work students interest in technical colleges.
- iii. To examine the attitude of teachers toward the teaching of metal work

Significance of the Study

It is hope that the finding of the study will benefit. Student, teachers and in techniques of stimulating the interest of technical colleges student I metal work practice in Niger State which is a big problem this study will be important to the technical and engineers in construction industries as it provide techniques that can be used to stimulate the metal work student interest in technical college.

The student will benefit from the facilities provided by the techniques of improving student interest in technical college.

The teacher as well benefit from the practical skills they posses and they can transfer if to the student as well.

Scope of the Study

The scope of the study is delimited to the determined the level of student interest in metal work, examine the teacher attitude towards metal work in technical colleges.

Research Questions.

To study sought to answer the following research questions

1. What are the techniques that can be used to stimulate metal work student interest in technical college?
2. What are the levels of student's interest in metal work practice?
3. What are the techniques to examine the teacher's attitude towards metal work?

Research Hypothesis

The following hypotheses were formulated to guide the research study. And tested at 0.05 level of significance.

H₀₁ there is no significant different in mean responses of students and teachers on techniques of examining the teachers attitude towards metal work.

H₀₂ there is no significant different in mean response of student and teachers on the level of student interest in metal work.

H₀₃ There is no significant different between the level of student and teachers in relation to techniques of stimulating the interest of technical colleges in metal work practice.

CHAPTER II

Literature Review

This chapter reviewed the related literature under the following sub-headings.

- ❖ History of metal working technology in technical colleges in Nigeria.
- ❖ The concept of stimulation.
- ❖ Theories related to the development of interest.
- ❖ Teachers and students attitude toward the teaching of metal work technology.
- ❖ Techniques that can be used to simulate metal work student's interest in technical college.

History of Metal Working Technology in Technical Colleges in Nigeria.

National board of technical education (1988) listed the following technical fields as constitution technical education.

- ❖ Agriculture and related trade.
- ❖ Building and woodwork trade.
- ❖ Commercial studies.
- ❖ Electrical studies.
- ❖ Mechanical engineering trades.
- ❖ Textile and related trade.
- ❖ Hospitality trade.

In line with N.B.T.E list of courses in technical education which technical college is one that signified the machines tools programme is one of the programme offered in all the technical colleges in Nigeria.

As by commission (1968) which recommended that technical subject of which metal working technology is one should be taught in Nigeria secondary school (technology and comprehensive college) since then many colleges have been producing graduates in different area of metal working technology. The acquisition of skill on metal work practiced is given prominent attention in purist for manpower training in technical and applied science. Metal working technology is identified with all level of education. His standard and well established area of technical education.

Metal working technology as all other subject in education has a basic structure of it own and can be organized around specific definable pattern, machine tools processes are the various area of specialization in metal working technology. Metal working technology is the totality of all processes involved in machine tools processes, welding processes, foundry process, forging process.

Okoro (1993) affirms that the aim of technical education in technical training institution is full occupation preparations. Metal work craftsmen is required to know the procedure in machines operation as well as causes of controlling measures to the unsparing dangers in machine and code of practice for as safe and efficient operation and so in providing for the craft men by the institute of metal work technicians.

The curriculum of metal working technology in technical colleges does not differ with other technical education courses, thirty percent of general education, sixty five percent of

trade's subject and five percent of industrial training attachment not (N.B.T.E 1998). This lead to the award of advance national technical certificate and National technical certificate in metal working technology by national Business and technical examination Board.

The Concept of Stimulation

Stimulation is an important determinant of human behavior whatever that interest an individuals stimulates him. It is a key to human activities and behavior, it energized, directs and reinforces behavior. The new Encyclopedia Britannica, (1982) states that the term stimulation is popularly referred to as the causes of behavior i.e. whatever it is within the individual that incites action. The work stimulation according to the new encyclopedia Americana (1981) stated that stimulation is a branch of psychology concerned with understanding the activation, organization and direction of behavior. This definition highlights those characteristics that influence human behavior.

Many authors have their contribution in stimulation. Some look at it as energizing factor through the activation and sensitization of human behavior national commission for colleges of education news letter, (1994, vol.1) has stated that "stimulation as the abstract psychological term relates to the arousal, control and sustenance of human necessary to satisfy a need or to attain a goal "Relating stimulation to the arousal of interest, Akinseinde (1998) has noted that stimulation is the ability of the teacher to arouse the interest of the student in what is being taught to do this, the teacher should present a condition that will direct the student interest toward learning the subject matter.

Maduakolam, metal view stimulation as a psychological internal process initiated by some needs which leads to activity that will satisfy those needs. Nwachukwu, (1988) did not see

stimulation as energizing factor only but also that which maintain behavior this definition shows that stimulation does not only arouse, compel or induce behavior but to maintain such behavior. Various definitions of stimulation by different authors writers have show human and needs as the two major bases for stimulation according to Durojaiye (1983:56), the term motive is generally used to refer to certain condition within the individual which, apart from arousing and sustaining particular activity in that individual. Actually predispose him top behave in ways that are appropriate to the ask, aims or objectives in view” based on this definition therefore, the question would then be doing metal work students in technical college have among other motives “ego interactive motives that make them master environment, develop their skills and attain self-actualization. Onyechalu (1983) sees stimulation as an urge that pushes an individual towards achieving a goal.

Theories Related To Development of Interest

The interests of individuals are important in education, where they serve as a basis for the selection of curriculum intent, for choosing among teaching methods, and for educational and vocational guidance. Before John Dewey (1859 – 1952), cost educators agreed on what subject’s pupils should study but disagreed on how to teach them. Some how those pupils could be compelled to learn the organized bodies of subject matter that then teachers assumed to be good for them, others felt that anything could be learned of made sufficiently interesting.

Dowey, William heard Kilpatrick, and their followers introduced new philosophy of education. They argued that ability to give parrot like responses does not institute Learning, which occurs only when acquired knowledge affects behavior. Children, they thought, will dept and incorporate into their behavior such facts and activities as fulfill their interests and purpose; this those interests of the pupil should be sought and encouraged that lead to growth along

desirable lines-toward increasing ability to make discriminations, to foresee consequences, to chose among alternatives, and to act thinking, and toward increasing the pupil's range of desirable interests.

One teaching approach, the project method, capitalizes on pupil's interests by encouraging then to undertake projects in area of their closing projects enable the teacher to bring to the child many skills and much information that will be useful in future, because these skills are used in concrete situations rather than memorized abstractly, they are learned mere easily, retained larder, more offer incorporated in behavior, and more transferable.

Research indicates that pupils are interested in a very wide range of subjects. A survey of independent study among 8,600 students in 36 high schools turned up interest in oriental languages, symbolic logic, Kar fried rich Guass' theorem on the distribution of prime numbers, parapsychology, plankton surveys, laser construction, William Faulkners, computerized translation, meat cutting, and scores of other subjects. Interest appears to depend on exposure and reinforcement, and they tend to change, particularly among young children. By the final years of light school, educational and vocational interests become more stable, although changes continue among many persons at least to age 25. Measurement of adult have demonstrated remarkable stability over periods of 15 years and more.

Scholars have not yet arrived at satisfactory definitions of interests or psychology theories adequate to explain them. Operational definitions that have been proposed include what people do when they are free to choose freely, what activation or subjects they chose among various alternatives presented by a test. This cast definition is the bars for most inventories of interests.

Vocational interest. Interest's inventories postulate that persons successful in given occupation have similar part terms of interest, that such pattern differ from occupation, and that these patterns are reliable reflected by tests on which the subject indicates his and dislikes and dislikes. The earliest inventory of this set was the strong vocation interest Blank (SVIB), developed by Edward K. strong and others at the Carnegie institute of technology and first published in 1927. Outstanding later tests include the Kuder preference Record and the lee-Thorpe inventory. These inventories are not aptitude tests. Many people have strong interests in areas in which they lack aptitude or necessary technical skills.

Interest inventories are usually in me of three ways. The SVIB was developed in the basic of relational ("like," "indifferent," or" dislike") to 400 items by individuals in scares of occupations. The kuder preference Record determines a profile each subjects in terms of 10 psychological traits derived by factor analysis. The lee-Thorpe inventory uses a logical approach in which items are randomly selected from a large number of institutions relevant to given occupations.

Interest serves have been used to help make educational as well as vocational choices in both areas the seers have found to predict better than Achievement, which has yielded competitive correlations with interest.

Interest inventories as useful in helping individuals gain realistic of themselves. Institutions use then primarily for volitional and academic counseling and research-rarely, if ever, as criteria for admission. Mary studies have attempted to relate secrets to others personality variables, particularly to secrets on adjustment inventories. Psychologist caution against using interest scores as indicating or "Good" or "bad" personalities.

According to Aiken and Dreger (1961), in the process of education, pupil's attitude or interest is correlation to that of the teacher. According to them, the attitude of teachers effect that of the student. As such, teachers should exhibit positive attitude in what they teach their students in order to imbibe the same spirit into them. If a teacher does not have interest in what he teaches, he should not expect his students to have interest in subject.

According to Mogbo (1997), students hardly perform well in any subject matter in which they lack interest. The arousal of their interest in the subject matter therefore is a basic principle for successful teaching. For instance, a child is interested in finding out things because of the action of his instinct of curiosity also interested and performance in what will help him conquer difficulties in the way of achieving a purpose. Thus, by linking our work and activities we are used to interest and performance.

It is the view that, some teachers are colorful in the classroom when others in making their students complex ideas with little effort some other teachers having difficulty in getting even the simplest ideas across to student. What makes the difference is simply the teachers understanding of the students he is teaching, their abilities, their stages of development and the influences of the environment that shapes their personalities, interest and performance in different ways. For effective classroom learning to go with students interest and performance, therefore a teacher needs to know which none other than the subject matter. Effective classroom teaching requires understanding of how students learn learning that has taken place.

The teacher must understand adequate the principles underlying the behavior of his students. To succeed in this therefore motivation of student's interest is prerequisite. Here, the teacher employs variety ways of exercising his students so that learning becomes enjoyable, early and reinforcing to ensure efficient retention of what has been learned.

Edward (1959) in his sociology of education said “technological advancement and the introduction of new products had some effect in Nigeria education”. As far back as 1925, it was recommended that western education in Niger should lay more emphasis on technical and vocational education. The same issue was picked up by the Ashby commission of 1960, reiterated that education was expedited to teach new technology which the society needed for development.

Therefore, the school must be concerned with interest and performance of the student. For instance, the school should not encourage truancy because it will not be well for the academic performance of the student. Parents, school and teachers should work as a team to help the student develop interest in some subject which is vital to the technological growth of the country such as metal work.

Hamis (1970) carried out a study on the student's interest in technical subjects. He concluded that the method of teaching the subject and the acute shortage of trained and qualified teachers in metal work have a great influence on student's interest in the subject.

Mogbo (1995) added that, the importance of it is that he finds a variety of ways of energizing his students so that learning becomes enjoyable, easy and rewarding and bring about efficient retention of what has been learned.

The metal work teacher should therefore

- ❖ Present his lesson by arousing his class interest
- ❖ The lesson should be presented with some incentives to create vigor in the student
- ❖ Student should be made to see the usefulness of the topic being treated in their lives, so that they can take the learning process seriously.

(1970) states. “Many of the vocational and technical education teacher do not reactive enough in service education or refresher criers and because of poor salaries paid to vocational and technical education teachers, many of them leaving the teaching profession to up jobs in private industries and creator shortage of manpower in vocational and technical education institution. Which lead students not been motivated by learning technical subjects.”

For effective teaching of metal work the teacher should have

- ❖ Good Knowledge of the subject
- ❖ Clarity of presentation
- ❖ Ability to arrases curiosity
- ❖ Ability to application careered
- ❖ Love for metal work practice
- ❖ Love and equal taproot for all motel students real
- ❖ The use of fancier treating aids.

Teachers and students attitude toward the teaching of metal work technology

Student’s attitude technical subject in general and metal work technology can be greatly influence by the teachers. Wale (1981) stated that, teachers who have negative or neuronal attitude toward sciences and technical subject can pass on this attitude to young children, home and car (1996) supported this quotation of wale with statement “children built in radar in fine turned to their teachers teaching about technical subject”. Both of them considered on attitude change on the part of elementary school teacher toward science as primary goal of Fafunwa (1991) posited that “average Nigeria teacher have a very poor attitude to working in general and no manual and technical work in particular.

He stressed that some teachers in the country are so irresponsible to be called teachers, but rather cheats some responds teaching as stepping stone, and others miss use their positions of the second parents of the students and inculcate negative work in the heart of students thereby destabilizing the good image of teachers in the country.

Shrigley and Johnson (2000) sampled the opinion of non-science major under graduate towards science subjects. The result of their investigation revealed that prior to the course; the student had more negative opinion of science and technology than did the general population. Therefore, the challenge to the science and technology educator is to teach the non-science and technologist, so that latter as citizen can make informed decision on the impact of science and technology in their lives. Abiri (1997) indicated that education does not consist merely in the development and transmission of mental and physical skill, but the inculcation of whole attitude is a very important ingredient of the process of education, he further indicated by saying that in the educative process, the nature of skills of knowledge acquired and their application to real life situation depend very largely on the attitude held by individual and the society at large both toward the specific situation in which the knowledge or skills are acquired or applied.

Techniques that can be used to stimulate metal work student's interest in technical colleges

There are some techniques can be used to stimulate the interest of metal work students in technical colleges.

They include students, Moral and welfare support, availability of adequate and qualified technical teachers and other staff personnel’ provision for students industrial work experience and services (SIWES) for metal work students e.t.c.

Considering the importance of moral and welfare support in booting, the interest of metal work students, NBTE, (1985) stated that welfare of the students should include hostels, “sports and other recreational facilities e.t.c. commenting further on welfare, Magaji (1988) recommended full scholarship for metal work students and full sponsorship to all those who qualify for a higher education as means of motivation on the high cost of technical college programme he stated that due to high cost of training a child in a technical college many parents are now unable to sustain their children, a condition that has adverse effect on the students emotionally and psychologically. There are additional charges for practical training materials examinations (internal and external) and high cost of technical text books and drawing instruments he again called on the government realize that the poor financial position of most candidates and their parents can not with stand longevity of the scheme.

Another stimulation package to these students is the provisions of vocational information that will help student make right choice of trade in technical colleges. Salami (1988) observed that in the selection of a career attitude as well as aptitude are operative and be considered.

Students industrial work experience service (SIWES) for metal work students in the state is an indispensable factor for stimulating the students dwindling interest in technical college education.

According to Towe (1988) he stated that possible arrangements should be made to send metal work students for industrial work experience for one term to enable them acquire on the job experiences. National Board for Technical Education, (1985) stated that the products of technical colleges are expected to take up employment industries and work experience industries are requiring of them. Available of adequate and qualified technical teachers and support staff in technical colleges are more boosters to the students. Magaji (1989) attributed the cause of low enrolment in technical colleges to lack of qualified technical teachers in the relevant trades.

According to Owotunde (1993) one of the problems of technology development is shortage of qualified and competent personnel while Education today, (1988) in sharing similar view stated that the very few qualified technical teachers leave to joint industries where he grass is greener” NBTE (1987: 480) has stated that the quality of a program and its products are dependent on the quality of teaching staff available to the programme.

Chapter III

Methodology

This chapter deals with research design, the area of study, population of study, the study sample is deals with the interment use for data collection, validation of instrument, method of data collection and analysis.

Research design

The research design adopted for this study is a survey research. The study employed the use of questionnaires to elicit information from the respondents on techniques for stimulating the interest and aspiration of students of in metal work trade in technical colleges in Niger state.

Survey research is one in which a group of people or items are studied by collecting and analyzing data from only a representative of the entire group studied

Area of Study

The area of study for research covers all the all the technical college in Niger state. These technical colleges are:

- Government technical college Eyagi Bida
- Government technical Minna.
- Suleiman technical college Suleja
- Federal Science and technical college Shiroro
- Government technical college Kontongora

- Government technical college New-Bussa

Population

The population of this consisted of all the technical teacher and the student of metal work in all the technical college in Niger state. Technical teacher include the principal, vice principal, department head and subject teachers the student consisted of the entire metal work student in all the technical colleges.

Staff	Numbers
Principal	6
Vice principal(administration and academics)	12
Head of section	6
Teachers	21

Sample

A random sampling techniques was use to select 101 students in all six 6 technical college in the state and 45 staffs.

Instrument for data collection

The instrument used for data collection was the questionnaires, which was design by researcher for this study and consist of 33items the questionnaire

Was divided into two parts 1 and 2 contain personal data of respondent part 2 was further subdivided into four sections A-C with number of item allocated of each section.

SECTION A: - This contain 9 item dealing with poor attitude of government and general public towards technical education

SECTION B: - This contains 10 item dealing with others techniques that government would employ to stimulate the interest of technical college student in metal work practice.

SECTION C: - This contains 14 items dealing with impact of adequate learning facilities in stimulating the interest of technical college student in metal work practice.

A four point likert type scale was adopted for the questionnaire and used to collect data. The respondent were required to react to each item by a (while I section A-D), The Respondent were constructed to trick option along the scale of 4-1, the value allocated to the scale are as follows

Questionnaire, The researcher and three of his research assistance teacher administered the instrument

Each questionnaire was accompanied by a letter introducing the researcher and the purpose of the study to the respondent sufficient

Strong agree (S.A 4 points

Agree (A 3 point)

Disagree (D 2 point)

Strongly disagree (S.D 1 point)

Validation of instrument

The instrument was validated by the supervisor and two other lectures in department of (ITC) (F.U.T) minna before it was typed and administered this was to ensure the instrument was capable of eliciting necessary information for data needed for the study.

Administration for the Instrument

The questionnaire for this study were administered to the respondents on the sport method. This method was used to minimize mistake from the respondents such as wrong filling, lose and misuse of questionnaire. The researcher and three of this research assistants (teachers) administered the instrument.

Each questionnaire was accompanied by a letter introducing the researcher and the purpose of the study to the respondent's sufficient guide was provided to aid a total number of 146 questionnaire were distributed to the staffs were 45 questionnaire. The remaining 101 questionnaire were distributed to students.

Method of Data Analysis

The data was analyzed using frequency counts, mean, standard derivation and t. test. The acceptance level for favourable related items was

$$\frac{4 + 3 + 2 + 1}{4} = \frac{10}{4} = 2.5$$

In the time with the above rating, any item that attracts up 2.5 point and above is considered "agreed" and any item below 2.5 considered is "Disagreed".

Decision Rule

To determine the acceptance level a means of 2.50 was selected as deciding point between agreed and disagreed, in other word any response with a men of 2.5 and above was considered agreed while response below 2.50 was disagreed. The acceptance level for the hypotheses was based on t critical value of 1.96 therefore any item that has t- calculated equal or less that t critical was considered rejected while that t calculated less than t critical was accepted.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

This is chapter deals with the presentation of the analyzed data with respect to the research question asked and hypotheses formulated for his study. The results of data analysis for the research question were present first followed by those of the hypotheses tested for the study.

Research Question 1

What techniques can be used to stimulate metal student interest in technical colleges?

Table 1: mean score of the respondents' relation to techniques that can be used to stimulate metal work students interest in technical college.

S/NO	ITEMS	X ₁	X ₂	X _t	REMARK
1.	Adequate provision of standard metal workshop for the student's practical	3.67	3.79	3.73	Agreed
2.	Standard environment or student's sporting activities	3.16	3.48	3.32	Agreed
3.	Appropriate environment or student's sporting activities	3.04	3.43	3.24	Agreed
4.	Modern machine for student's practical training	3.58	3.41	3.50	Agreed
5.	Regular supply of electricity for the department for student learning activities	3.47	2.50	2.49	Agreed
7.	Block wall fencing of the college compound	2.98	3.20	3.00	Agreed
8.	STANDARD Generator to support electricity for PHCN	2.51	2.37	2.44	Agreed
9.	Equipping technical college workshop with sufficient hand tool for the student's practical training	3.33	3.27	3.3.	Agreed

10.	Adequate hostel with modern facilities	3.60	3.56	3.50	Agreed
11.	Adequate training materials for student's practical work	3.33	3.40	3.37	Agreed
12.	Provision drawing studies for the student	3.42	3.54	3.48	Agreed
13.	Provision of base for students movement	3.13	3.53	3.33	Agreed
14.	Well equipped metal workshop	3.60	3.19	3.40	Agreed

Where

X_1 = mean score of teachers

X_2 = mean score of the student

X_t = average mean of teachers and students

N_1 = total population of teachers

N_2 = total population of student

Looking at the table 1, it could be seen that the two group of respondents (teachers and students) on the learning facilities and infrastruaction needed in technical colleges to motivate the interest of the students agree with items 1-7 with grand mean ranging between 3.09-3.73 the two respondents also agreed with item 8-14 ranging between (3.33-3.58) however, the two groups disagree with item 7 with a grand mean score of (2.44). The teachers on their own agreed with item 8 with man score of 2.51 as a mean of stimulating the interest of metal work students in technical college education.

Research Questions 2

What are the levels of student interest in metal work practices in technical colleges?

Table 2: Mean score of respondent in relation to the level of student interest in metal work practice in technical college

$N_1 = 45, N_2 = 101$

S/NO	ITEMS	S.A	A	S.D	REMARK
15.	The students have access to the hand tools any time they want	3.53	3.50	3.52	Agreed
16.	The students have some certain experiences	3.36	2.98	3.17	Agreed
17.	Students learning metal work increasing their interest in the subjects	2.84	2.50	2.67	Agreed
18.	There are increasing rate of development in metal work	3.33	3.61	3.47	Agreed
19.	Students are showing enough interest in practical work	2.53	2.77	2.65	Agreed
20.	Students showing gratitude to their metal work teachers	2.46	2.55	2.51	Agreed
21.	Students take permission from the teachers before carry on practical	3.33	3.61	3.47	Agreed
22.	Students response to the teachers question	3.20	3.23	3.22	Agreed
23.	Student answering questions correctly	1.20	3.23	3.22	Agreed

Where

X_1 = mean of teachers

X_2 = mean score of the students

X_t = average of teachers and students

N_1 = total population of teachers

N_2 = total population of students

Table 2 revealed that the groups of respondents together agreed with item 1-9 with a mean ranging between (2.51 to 3.52) while a group disagreed with item 6 with a mean score of 2.46.

Research Question 3

What are the techniques to examine the teacher's attitude towards metal work students in technical college?

Table 3: Mean score of the respondents in relation to technique to examine the teacher's attitude towards metal work in technical colleges

S/NO	ITEMS	SA	A	SD	REMARK
24.	Present his lesson by arousing his class interest	3.22	3.39	3.41	Agreed
25.	Good knowledge of the subject	3.29	3.49	3.39	Agreed
26.	Making metal work students to be interested in the subject	3.27	3.41	3.34	Agreed
27.	Ensuring that all the subjects in metal work are well taught	3.37	3.56	3.46	Agreed
28.	Clarity presentation	3.11	3.22	3.17	Agreed
29.	Student should be made to see the usefulness of the topic being treated in their hires	3.33	3.65	3.51	Agreed
30.	The lesson should be presented with some incentives of create vigor in the student	3.08	3.48	3.17	Agreed
31.	Ability to application	2.98	3.35	3.17	Agreed

32.	Love and equal taproot for all metal student real	3.51	3.32	3.42	Agreed
33.	The use fancier treating aid	3.35	3.50	3.20	Agreed

Where

X_1 = mean score of teachers

X_2 = mean score of the students

X_t = average mean of teachers and students

N_1 = total population of teachers

N_2 = total population of students

From the above research Question, it can see from the table that the two groups of respondents (teachers and students) unanimously agreed in the entire item 1-10 with mean score ranging between 2.98-3.68. Detailed analysis of the two groups revealed the teachers with mean scores ranging between 2.80-3.51 while that of the students between 3.22-3.68 however, both the leaders and the students agreed on the item as the techniques to examine teacher's attitude toward metal work in technical colleges.

Hypothesis testing

Hypothesis 1:

There is no significant difference between the mean responses of teachers and students on the techniques that can be used stimulate metal work student interest in technical colleges.

Table 4: t-test analysis of the group responses in relation to the level student's interest in metal work practice

Where

S/NO	ITEMS	X ₁	S.D ₁	X ₂	S.D ₂	t-val	REMARK
1.	The student have access to the hand tools any time to work	3.35	3.50	0.193	0.145	0.021	Accept
2.	The students have some certain experiences	3.36	2.98	0.36	0.136	0.011	Accept
3.	Students learning metal work increasing their interest in the subjects	2.84	2.50	0.036	0.18	0.031	Accept
4.	There are increasing rate of development in metal work	3.33	3.61	0.61	0.126	0.991	Accept
5.	Students are showing enough interest in practical work	2.53	2.77	0.14	0.099	0.042	Accept
6.	Students showing gratitude to their metal work teachers	2.46	2.55	0.16	0.172	0.021	Accept
7.	Students take permission from the teachers before carry on practical	3.33	3.61	0.26	0.182	0.013	Accept
8.	Students response to the teachers question	2.98	2.84	0.01	0.0754	0.049	Accept
9.	Student answering questions correctly	3.20	3.23	0.833	0.05	0.001	Accept

P at 0.05(df) = 1.96

X₁ = mean score of teachers

X₂ = mean score of the students

X₁ = average mean of teachers and students

N_1 = total population of teachers

N_2 = total population of students

The analysis in table 5: shows that there was no significance different between the mean score of students and teachers, hence the calculated t value (0.033) does not exceed the t critical value 1.96 necessary for acceptance of null hypothesis at 0.05 level of significance and the hypothesis was accepted.

Hypothesis 2:

There is no significant difference between the mean responses of the teachers and students in relation to provision of learning facilities as means of stimulating the interest of metal work students' interest in technical college

Table 5 t-test analysis of the group responses on the techniques that can be used to stimulate metal work students interest in technical education

S/NO	ITEMS	X_1	X_2	S.D ₁	S.D ₂	T-val	REMARK
10.	Adequate provision of standard metal workshop for the student's practical	3.67	3.79	11.37	11.58	0.017	Accept
11	Standard environment or student's sporting activities	3.16	3.48	11.51	11.66	0.048	Accept
12.	Appropriate environment for student's sporting activities	3.04	3.43	11.54	11.68	0.016	Accept

13	Modern machine for student's practical training	3.58	3.41	11.40	11.68	0.039	Accept
14.	Regular supply of electricity for the department for student learning activities	3.47	2.50	11.43	11.66	0.19	Accept
15.	Block wall fencing of the college compound	2.51	2.37	11.68	1196	1.98	Accept
16.	Standard Generator to support electricity for PHCN	3.40	3.45	11.44	11.67	0.023	Accept
17.	Equipping technical college workshop with sufficient hand tool for the student's practical training	3.33	3.27	11.46	11.72	0.01	Accept
18.	Adequate hostel with modern facilities	3.33	3.40	11.46	11.68	0.037	Accept
19.	Adequate training materials for student's practical work	3.60	3.56	11.39	11.64	0.028	Accept
20.	Standard drawing studios for the student	3.42	3.54	11.43	11.65	0.046	Accept
21.	Provision of base for students movement	3.13	3.53	11.52	11.65	0.025	Accept
22.	Well equipped metal workshop	3.60	3.19	11.39	11.74	0.031	Accept
23.	STANDARD Generator to support electricity for PHCN	3.40	3.45	11.44	11.67	0.023	Accept

The analysis in table 4: shows that there were was no significance different between the means scores of students and teachers, hence the calculated t-value (0.049) does not exceed the t critical value 1.96 necessary for acceptance for null hypothesis at 0.5 level of significance the hypothesis was accepted.

There is no significant different between the mean responses of the teachers and students technique to examine the teacher's attitude towards metal work in technical colleges.

Table 6: t-test analysis of the group responses o the techniques to examine the teachers' attitude towards metal work in technical colleges

S/NO	ITEMS	X ₁	X ₂	S.D ₁	S.D ₂	t-val	REMARK
24.	Present his lesson by arousing his class interest	3.22	3.59	9.15	1.726	0.014	Accept
25.	Good knowledge of the subject	3.29	3.49	9.193	1.749	0.011	Accept
26.	Making metal work students to be interested in the subject	3.27	3.41	9.199	1.742	0.107	Accept
27.	Ensuring that all the subjects in metal work are well taught	3.37	3.56	9.56	1.774	0.009	Accept
28.	Clarity presentation	3.11	3.22	9.250	1.695	0.0099	Accept
29.	Student should be made to see the usefulness of the topic being treated in their hires	3.33	3.65	9.180	1.761	0.012	Accept
30.	The lesson should be presented with some incentives of create vigor in the student	3.08	3.48	9.259	1.682	0.014	Accept
31.	Ability to application	2.98	3.35	9.291	1.651	0.012	Accept
32.	Love and equal taproot for all metal student real	3.51	3.32	9.123	1.818	0.009	Accept
33.	The use fancier treating aid	3.20	3.50	9.221	2.985	0.218	Accept

The analysis in table 6: shows that there was no significance difference between the mean of students and teachers, hence the calculated t-value (0.417) does not exceed the t critical value

1.96 necessary for acceptance of null hypothesis at 0.5 level of significance the hypothesis was accepted.

Finding on the techniques that can be used to stimulate metal work students interest in technical colleges

1. Adequate provision of library for the college
2. Provision of buses for students movement
3. Provision of adequate training material for student practical work
4. Adequate provision for standard work
5. There should be provision for adequate hosted with modern facilities
6. Environment for students sporting activities
7. Adequate training material for students.

Finding on the technique to examine the teacher's attitude towards metal work I technical college

1. Good knowledge of the subject
2. Teachers are making student to improve in metal work practice
3. Teachers have ability to application career.
4. Teachers are using fancier treating aid

Discussion of finding

The discussion of the finding are organized and presented in line with the research question and hypothesis.

Level of student interest in metal work practice Niger State

The result on table 2 showed that the items under the section accept at varying degree of importance. A ranking of the techniques for stimulating the students interest based on the respondents mean score showed the suggestion for students to give technical education into proper position in the state according to Awotunde (1993) that the main factor militating against development of technical education is the attitude of Nigeria toward it.

This study revealed that students showing positive attitude toward technical education stand to stimulate attitude the interest of the students, this confirms the observation by NCCE (1994), that government and general public should change their negative toward technical education, the study revealed that government having interest in technical education both at federal and state level is a stimulating factor this is an agreement with Oguntoladin (1985) who blamed government for showing little, uninspiring interest in technical education and also why also why parents refused to send their children to technical colleges furthermore, the study revealed the increase in the number of technical college in the state was accept by the respondents as motivating factor. The study also revealed the need for government and general public to give technical education it rightful value. This agreed with Fafunwa (1998) who attributed the problems of technical education to wrong type of value and attitude of Nigeria toward it.

In addition, the study reveals the positive effects of general public enlightenment on the importance and benefits of technical education in stimulating the interest of metal work students in technical college this supported by Magaji (1991) who attributed poor attitude of the general public to technical education on the narrow exposure to the huge benefits of the programme.

Techniques that can be used to stimulate metal work student's interest

The result on table 2 revealed that 13 and 14 items under this section were accepted while I was rejected

The respondents attached greatest importance to the item with adequate provision of standard workshop for the students practical as an important factor in the stimulating of students' interest.

The finding showed that the respondent agreed with provision of adequate training material and modern machines for students training as factors for stimulating their interest. This confirms Okonkwo (200) who attributed the lack of interest by metal work students in their study to the poor state of technical college in the state. NBTE (1987) stated that all basic equipment for each trade, laboratory and workshop should be provided in all the technical colleges.

The study further indicated that the respondents for this study ranked high on the availability of regular supply of electricity to workshop in the technical colleges thereby agreed with NBTE (1978) that uninterrupted electricity supply to technical college and the provision of two standby generators of sufficient capacity to run various machines in the workshop. It also agrees with Ndem, (1985) and Magaji, (1989) on the need for electricity supply to technical colleges. The study revealed regular water supply to technical colleges as a motivating factor. This finding agrees with NBTE (1987) and Magaji (1986) both pointed out the need for basic infrastructural facilities as water supply on regular basis the provision and adequate equipment of central library and library material in technical colleges. The study also revealed that the respondents agreed on adequate hostel accommodation with modern facilities and good environment for student sporting activities as means of stimulating the interest of metal work students in technical

colleges. While they disagreed on wall fencing of technical college compound as a stimulating factors with agreed mean score of 2.44.

Techniques to examine the teacher's attitude towards metal work

The result in table 3 shows that all the items under the section were acceptance at varying of importance. The respondents for this study attached as a technique for stimulating their interest in technical college education this confirms the observation by Magaji (1989) on his position to the cost of technical education of textbooks, drawing instruments and practical materials, the financial position of most students and their parents. The respondents ranked second the NBTE, accreditation of courses in technical colleges as an important factor for stimulating students' interest. In technical colleges in the country, the teachers qualification and experience is paramount important for teaching of the students.

On the issue of constant staff development, Ndanusa (1995) and Nwonsu (1995) stressed that for satisfactory performance of any personnel, sufficient opportunities for professional growth must be put in place, since on the society is static and the society is instantly, changing in terms of needs, value and goals, through training and regular attendance of workshop, seminars, industrial attachment e.t.c.

An appropriate technique is adopted by the teachers in teaching method such as demonstration and project method. These findings is in line with findings of Okories (1979) that carefully designed teaching method can work wonders in making learning effective Ndanusa (1995) pointed out the view that teaching method not be confirmed to only one method but several methods with different approaches could be used in the course lesson.

CHAPTER V

Summary, Conclusion, and Recommendations

This chapter deals with summary of the study, conclusions, recommendation and suggestion for further study.

Technical education has been so pronounced in our educational system from its wide range of importance in our national economic and technological development, this has given birth to the establishment of national board for technical education (NBTE) the students are not showing the much needed interest. The student enrolment is very low and some parents with draw their children from technical colleges e.t.c. this study therefore was concluded to identify technique of stimulating interest of technical college students in metal work practice in Niger state.

The related literature was revived based on government and general public attitude toward technical college education. Education, adequate provision of learning facilities and other technique that can be used to stimulate the students in technical college education in metal work practice.

A survey approach was used to develop instrument for the study the persons indentified as the population of the study were the metal work teachers and the student in the six technical colleges of Niger state. One hundred and forty six (146) questionnaires were administered for the study covering six technical colleges.

A sample of 45 teachers and 101 students given a total sample of 146 were used. The instruments used were analyzed using frequency count, means standard deviation and t-test.

The research question were formulated and answered while hypotheses were tested at 0.level of significance. The findings were discovered based on the date analysis of the study.

Conclusion

Based on the data analysis of the study, the following conclusions were draw:

1. That government of Niger state should change their attitude towards technical college education and exhibit such attitude that will encourage and stimulate the metal work students in technical colleges programme.
2. Government should consider the high cost of training per child in a technical college and provide adequate incentives to the students ranging from allowance to each students, free feeling and accommodation to full scale scholarship to higher education for outstanding students.
3. That teachers should student with naught practical work
4. Government should remove all bottlenecks militating against metal work students in technical colleges in having equal educational opportunities to further education in our tertiary institutions.
5. Government should be more serious with the accreditation of course in all the technical college in the state by providing each technical college with NBTE minimum accreditation requirement.

Implication of Study

The findings of this study have for certain implication on the students and teachers technicians in techniques of stimulating student interest the finding of this study regarding. The quality policy by teachers have seniors implication on the implementation of the full retention of knowledge

and techniques of technical college quality assurance it and technicians to be concrete and real. Another finding of this study with regard to inspecting of student also have implication that a greater role as he is the implementer of quality goals. In technical college the technicians should have a knowledge of apparatus, materials communication for effective system.

The implication finding on other technique that can be used to stimulate the student in technical college education in metal work student's interest have following implication: employing of inexperience and unqualified metal work teachers. Most of the courses in technical colleges in the state are not accredited by National Board of Technical Education, which has negative effect towards technical college education; does not accredit most of the course in technical college in the state.

To the technical college and their teachers, there are not enough instrument materials and incentives for metal work teachers that will provide functional technical college and dedicated teachers.

Recommendation

Based on the finding of this study, the following recommendations were made.

1. Quality management and quality assurance techniques should be used as implementation techniques control, coordination of material and human resources should be major priority.
2. Constant training and retraining of teachers in technical college Niger state.
3. There should be a provision of workshop of workshop to keep maintenance work effective and improve performance.

4. Government should do everything possible to provide all the technical colleges in the state with the minimum requirement of course for NBTE accreditation.
5. Government both at federal and state should make sure that metal work students are given equal education opportunities to further their education to any of their choice with the national technical certificate (NTC).
6. Government should encourage mass exodus of technical teachers in technical college from teaching to industries and companies by providing them with good incentives in their teaching career.
7. Government should provide metal work students in technical colleges opportunities to benefit from student industries work experience (SIWES) or industrial training (IT)
8. Adequate incentive should be made available to metal work students in technical college by the government such as feeding, accommodation, running expenses or allowances and scholarship.

Suggestions for further studies

The following suggestions are made for further research work

1. Technical for stimulating female candidate into technical college programme
2. The effects of student's industrial work experience service programme in technical colleges.
3. Study on the academic performance of products of technical colleges in universities in the country.

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**SCHOOL OF SCIENCE AND SCIENCE EDUCATION DEPARTMENT OF
INDUSTRIAL AND TECHNOLOGY EDUCATION FEDERAL
UNIVERSITY OF TECHNOLOGY, MINNA**

**QUESTIONNAIRE FOR TEACHHERS AND STUDENTS OF TECHNICAL
COLLEGES**

**TECHNIQUES FOR STIMULATING THE INTEREST AND ASPIRATION
OF STUDENTS IN METAL WORK TRADE IN TECHNICAL COLLEGES
IN NIGER STATE**

INSTRUCTIONS:

1. Please don not write your name on the questionnaire.
2. All information you give will be treated unconfidentially and used only for the purpose of this study.
3. Kindly tick () the response categories you think is most appropriate to each items. The response categories are

S.A = Strongly agree

A = Agree

D = Disagree

S.D = Strongly Disagrees

PART 1

- ❖ Name of School
- ❖ Status
- ❖ Teacher ()
- ❖ Student ()
- ❖ Sex
- ❖ Male ()
- ❖ Female ()

SECTION A

What are the techniques that can be used to stimulate metal work students interest in technical colleges?

S/NO	STATEMENT	S.A	A	S.D	D
1	Adequate provision of standard metal work shop for the student practical.				
2	Standard library for the college				
3	Appropriate environment for students sporting activities				
4	Modern machine for student's practical training				
5	Regular supply of electricity to the department for student learning activities				
6	Provision of safety devices for the workshop				
7	Block of safety fencing of the college compound				
8	Standard generator to support electricity for PHC.				
9	Equipping technical college workshop the with sufficient hand tools for the student's practical training				
10	Adequate hostel with modern facilities				
11	Adequate training materials for student's practical work				

12	Provision drawing studies for the student				
13	Provision of bases for students movements				
14	Well equipped metal workshop				

SECTION B

What are the level of students interest in metal work practice

S/NO	STATEMENT	S.A	A	S.D	D
15	The student have access to the hand tools any time they want to work				
16	The students have some certain practical experience				
17	The students learning metal work increasing their interest in the subject				
18	There are increasing rate of development in metal work				
19	Students are showing enough interest in practical work				
20	Students showing gratitude to their metal work teachers				
21	Students response to the teachers before carry on practical				
22	Students take permission from the teachers before carry on practical				
23	Students answering question correctly				

SECTION C

What are the techniques to examine the teacher's attitude towards metal work in technical colleges?

S/NO	STATEMENT	S.A	A	S.D	D
24	Present his lesson by arousing his class interest				
25	Good knowledge of the subject				
26	Making metal work students to be interested in the subject				
27	Ensuring that all the subjects in metal work are well taught				
28	Clarity of presentation				
29	Students should be made to see the usefulness of the topic being treated in their hires				
30	The lesson should be presented with some incentives of create vigor in the students				
31	Ability to application careered				
32	Love and equal taproot for all metal student real				
33	The love fancier treating aid				

Research Questions 2: deals with level of students interest in metal work practice

$$S.D = \frac{\sqrt{\sum((x-x)^2)}}{N}$$

Where

X = MEAN SCORE

X = GRAND MEAN

N = NUMBER OF RESPONDENTS

What deviation for teachers on research question 2:

	X₁	X - X	∑(x-x)²
1	3.53	0.58	0.336
2	3.36	0.41	0.168
3	2.84	0.11	0.012
4	3.33	0.38	0.144
5	2.53	0.42	0.178
6	2.46	0.49	0.240
7	3.33	0.38	0.144

8	2.98	0.03	0.003
9	3.20	0.25	0.063
	$\sum x = 26.56$		$\sum(x-x)^2 = 1.285$

$$\underline{\sum x} \quad S.D = \frac{\sqrt{\sum((x-x)^2)}}{N}$$

4

Where

X = MEAN SCORE

X = GRAND MEAN

N = NUMBER OF RESPONDENTS

$$X = \frac{26.56}{9} \quad S.D = \frac{\sqrt{(1.285)}}{9}$$

9

$$X = 2.95$$

$$= 0.38$$

$$X - X = 3.53 = 2.93 = 0.58$$

$$\text{Variance} = \frac{\sqrt{\sum((x-x)^2)}}{N}$$

Research Question 2: deals with level of students interest in metal work practice

$$S.D = \frac{\sqrt{\sum((x-\bar{x})^2)}}{N}$$

Where

\bar{X} = MEAN SCORE

\bar{X} = GRAND MEAN

N = NUMBER OF RESPONDENTS

Standard deviation for teachers on research questions 2:

	X_1	$X - \bar{X}$	$\sum(x-\bar{x})^2$
1	3.50	0.43	0.188
2	2.98	0.08	0.007
3	2.50	0.56	0.320
4	3.61	0.54	0.296
5	2.77	0.29	0.089
6	2.55	0.51	0.266
7	3.61	0.54	0.029
8	2.84	0.22	0.051
9	3.23	0.16	0.026
	$\sum X = 27.59$		$\sum(x-\bar{x})^2 = 9.554$

$$\sum X \quad \text{S.D} = \frac{\sqrt{\sum((x-x)^2)}}{N}$$

4

$$X = \frac{27.59}{9} \quad \text{S.D} = \frac{\sqrt{1.5399}}{9}$$

9

$$X = 3.066 \quad = 0.4136$$

$$X - X = 3.665 = 0.435 \quad \text{Variance} = \frac{\sqrt{\sum((x-x)^2)}}{N}$$

$$S^2_1 = \frac{1 - 5399}{9}$$

$$S^2_2 = 0.1711$$

APPENDIX III

Test of students and Teachers on the level of students interest in metal work practice

DATA

$$X_2 = 2.95$$

$$X_2 = 3.06$$

$$N_1 = 45$$

$$N_2 = 101$$

$$S_1^2 = 0.142$$

$$S_2^2 = 0.171$$

$$N_1 + N_2 - 2 = 144$$

$$\text{Using } t = \frac{x_1 - x_2}{\sqrt{\frac{(N_1 - 1)S_1^2 + (N_2 - 1)S_2^2}{N_1 + N_2 - 2} \left[\frac{1}{N_1} + \frac{1}{N_2} \right]}}$$

$$= \frac{195 - 3.066}{45 - 0.143 + (101 - 1) 0.177 \left[\frac{1}{45} + \frac{1}{101} \right]}$$

$$= \frac{0.1165}{\frac{6.283 + 17.11 (31.130)}{144}}$$

$$= \frac{0.1165}{\sqrt{0.40305 \times 31.130}}$$

$$= \frac{0.1165}{\sqrt{12.5469}}$$

$$= 0.033$$