

UNIVERSITY OF CAPE COAST

THE CHALLENGES FACING TECHNICAL INSTITUTES IN PRACTICAL
SKILLS TRAINING IN THE UPPER EAST REGION OF GHANA

DASMANI ADAM

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SKILLS TRAINING IN THE UPPER EAST REGION OF GHANA

BY

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Thesis submitted to the Department of Vocational and Technical Education of the Faculty of Education, University of Cape Coast, in partial fulfillment of the requirements for the Award of Master of Philosophy Degree in Vocational and Technical Education

NOVEMBER, 2010

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature.....Date.....

Name: Dasmani Adam

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

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Co-supervisor's Signature.Date.....

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ABSTRACT

One of the important features of technical institute programmes is its orientation towards the world of work and with its curriculum emphasizing practical skill acquisition necessary for the job market. The main purpose of the study was to explore and describe the challenges confronting technical institutes in practical skills acquisition in the two public technical institutes in the Upper East Region of Ghana. Specifically, the researcher sought to; examine the conditions under which practical skills training is provided, find out the factors which affect the participation of the youth in the technical programmes, assess the provision of supporting materials towards practical skills training, assess the implementation of the entrepreneurship skills training and industrial attachment.

The descriptive survey was used for the study. A sample size of 284 was drawn from the two technical institutes. Data were collected through questionnaire. The findings of the study revealed that skill training at the technical institutes was ineffective. It also established that supply of training resources was inadequate. Ineffective teaching of entrepreneurship skills and lack of Industrial attachment programme were also found. All these constraints were found to have negative effect on practical skills acquisition and therefore posed challenges for the technical institutes. The recommendations made included regular and sufficient supply of educational resources (human, material and financial) effective teaching of entrepreneurship skills, and priority attention should be given to industrial attachment.

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DEDICATION

I dedicate this work to my dear mum, Mma Mariama Sanngonye Bilal and my late dad, Baba Adam Bawore Bandaaw.

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CHAPTER ONE

INTRODUCTION

Background to the Study

Improvements in the quality of human resources are crucial to the economic, social and political development of any country. Education and training, according to Haan (2001), are the main means for developing human resources, and for influencing socio-economic development because they increase the productivity of the labour force through increased knowledge and skills.

Throughout the world, and in particular the countries of sub-Saharan Africa, governments are renewing efforts to promote technical and vocational education and training (TVET) with the belief that skill formation enhances productivity and sustains competitiveness in the global economy. According to Bhuwanee (2006), in recent years, concerns have been raised about the move of African countries towards TVET. Stakeholders in education have also observed that for far too long, TVET was seen as targeting those who cannot perform in academic education, thus giving an erroneous impression of TVET as being a second class education meant for the underprivileged. Gradually TVET is now being seen not only as an avenue or a means of providing a second chance to secondary school drop-outs, but also as an alternative post basic education.

Abban and Quarshie (1996) have stated that the paradigm shift towards practical skills training with TVET in Africa is increasingly being reshaped to make it more attractive, efficient and effective. Also TVET is considered to be offering an alternative to the traditional academic secondary and university education, and thus, combating youth unemployment and poverty. These developments in the TVET sub sector have compelled policy makers in many African countries, including Ghana, to raise TVET to a high priority status within the development agenda and initiatives such as “Education For All” (EFA) and the “Millennium Development Goals” (MDG). If these initiatives should materialize, it will require the political will as well as resources to realize the full potential of TVET as a viable pathway to economic growth and poverty alleviation in the sub-Saharan countries of Africa.

Additionally, there is a fresh awareness among policy makers in many African countries and the international donor community of the critical role that TVET can play in national development. The increasing importance that African governments now attach to TVET is reflected in the various Poverty Reduction Strategy Policies that governments have developed in collaboration with The World Bank. One of the most important features of TVET, as recognized by African governments, is its orientation towards the world of work and with the curriculum emphasizing on the acquisition of employable skills.

The African Union (AU) Report (2007) indicated the vision of African countries to develop a new strategy to revitalize TVET in Africa as envisaged in their plan of action. This vision is to position TVET as a tool for empowering the

peoples of Africa, especially the youth, for sustainable livelihoods and for socio-economic development of the continent. The African Union report (2007) emphasized that TVET should promote skills acquisition through competency-based training. This requires proficiency testing for employment in order to promote sustainable livelihoods and responsible citizenship.

In the wake of public sector reforms, Ghana decided to reshape technical and vocational education institutions in order to make them complementary to secondary education. This has compelled Ghana to place TVET reform among the top of its development agenda. Consequently, the government has established a Council for Technical and Vocational Education and Training (COTVET) to oversee and coordinate TVET in Ghana (AU Report, 2007).

To achieve this goal of practical skills acquisition, the Ghana Industrial Skills Development Centre which was established in 2002, is working in close collaboration with the Association of Ghana Industries (AGI) and the Ghana Employers Association (GEA) to harness the financial and material resources required for achieving excellence in skills training (Roeske, 2003). A number of other institutions like Integrated Community Centre for Employable Skills (ICCES), the Opportunities Industrialization Centre (OIC) and the Department of Social Welfare's Vocational Centres are part of government's effort to produce skillful technical personnel.

Roeske (2003) added that other innovative programmes like the Skills Training and Employment Placement (STEP) programme; and the Vocational Skills Project (VSP) were also put in place to turn out skillful technical personnel

for the job market. The Ghana Regional Appropriate Technology Industrial Service (GRATIS) and Intermediate Technology Transfer Units (ITTU) are also providing TVET trainees with additional and enriched practical skills to enable them set up their own enterprises.

Statement of the Problem

Palmer (2005) observed that while poverty was reducing in other regions of Ghana, the three northern regions recorded a significant increase in poverty between 2000 and 2004. In order to arrest the poverty situation, the Upper East region is focusing on providing education and skills training in diverse areas. In the area of skill training, the Junior High School (JHS) graduates who could not gain admission into senior high schools are encouraged to undergo apprenticeship in smock weaving, leatherwork and pottery in the informal sector. In the area of formal training, the two technical institutes in the region provide education and training to enhance the academic and practical skills of students.

The Curriculum Research and Development Division (CRDD) and the Technical and Vocational Education Division (TVED) of the Ghana Education Service (GES) have designed a syllabus on entrepreneurship education for technical institutes in the country. For the implementation of this syllabus, TVED organized various workshops for the training of trainers for selected teachers from technical institutes in the country. Additionally, TVED has made entrepreneurship skills training part of the curricula of all the 26 government technical institutes in the country (Council for International Development Cooperation, 2003).

The Business Advisory Centre of the National Board for Small Scale Industries (NBSSI) in Bolgatanga have also been organizing workshops on entrepreneurial skills, every year, for the final year students of the two technical institutes in the region. The purpose is to encourage technical institute graduates to enter into self-employment as a viable alternative to the usual wage employment in the formal sector.

However, the expected outcomes of these programmes of intervention for poverty reduction and employment creation are not evident. For example, despite the campaign about the benefits of technical and vocational education, it has not attracted the youth in the region to move into technical and vocational training and neither to enter into self-employment. Enrolment figures at the two technical institutes in the region are below expectation. At the close of admissions for the 2007-2008 academic year, the two technical institutes together had a total of about two hundred vacancies unfilled (TVED, 2008).

The transition from school to work by the youth has also not been encouraging in the region. Hence, a large group of JHS and TVET graduates, who are mostly teenagers, leave to the southern part of the country for menial jobs. This is confirmed by Palmer (2005) in his study on Decent Livelihood in Ghanaian Rural Informal Economy. This trend of affairs may suggest that training programmes offered by the two technical institutes probably fail to develop the skills required for employment within the region. This situation may pose a challenge to the two technical institutes in meeting their mission, particularly in

addressing the employment opportunities for the growing population of the youth in the region.

Purpose of the Study

The study is to investigate the state of practical skills training provided by the two technical institutes in the Upper East Region of Ghana (Bawku Technical Institute and Bolgatanga Technical Institute) to meet the socio-economic needs of the region. Specifically, the study sought information relating to the following objectives:

1. to examine the conditions under which practical skills training is provided in the two technical institutes.
2. to find out the factors which affect the participation of the youth in the technical programmes in the region
3. to assess the provision of supporting materials towards practical skills training in the technical institutes.
4. to assess the implementation of the entrepreneurship skills training in the two technical institutes.
5. to examine the nature of the industrial attachment programme in the two technical institutes in the region.

Research Questions

The research will attempt to find answers to the following questions:

1. To what extent do the conditions in the two technical institutes promote or contribute to students' skill acquisition?

2. What factors affect the participation of the youth in technical programmes of the two technical institutes?
3. How do the perceived benefits of technical institute programmes affect enrolment in the two technical institutes in the region?
4. To what extent is entrepreneurship education given attention in the programmes of the two technical institutes?
5. What is the nature of the industrial attachment programme in the two technical institutes in the region?

Significance of the Study

The result of this study, which looked at the challenges facing technical institutes in practical skills training in the Upper East Region of Ghana, revealed the issues and problems relating to the participation of the youth in technical education. It also unearthed some of the issues related to the acquisition of practical skills. The study exposed the challenges in entrepreneurship skills training in technical institutes.

Thus, the study will help educators and administrators to understand better the issues and problems relating to the provision and delivery of technical programmes in the Upper East Region. It will also contribute to an increase in the stock of knowledge in devising new applications to educational issues. It also offered suggestions and recommendations to address these problems.

The study will assist in identifying the factors affecting the low level of participation of the youth in technical education in the region and so guide curriculum development. Finally, the findings of the study will enable policy

makers, as well as stakeholders in the region, have an idea about the effectiveness of the existing system of technical education in relation to the needs of the youth, industry and society.

Delimitation

The scope of this study is limited to the two technical institutes in the Upper East Region of Ghana. The study is limited to this region because the region has its peculiar problem of low participation of the community in technical education. It is also delimited in scope to the data provided on technical teachers and the second year students in the two technical institutes only. This was done with the reason that the first year students were not experienced enough to answer pertinent questions and the third year students were also busy with their final projects.

The findings can only be a reflection on technical education in the Upper East Region. This is because the two technical institutes in the region are not true representation of the 26 public technical institutes in the country in terms of variety of programmes and enrolment. Therefore, the findings may not be generalised to the whole country.

Limitations

Questionnaire was the main instrument used for data collection. The quality of the study could have been improved if other instruments like interview schedule had been included. Despite the researcher's efforts to conduct a thorough study, some difficulties could not be avoided. Some respondents thought the time

allowed for completing the questionnaire was too short considering the one day period they had to complete and return the instrument.

Organization of the study

The study is organized into five chapters. In chapter one, the background of the study and the statement of the problem were discussed. The purpose and significance of the study were also stated and five research questions were posed for the study. The delimitation as well as the limitation of the study were also discussed in the chapter.

In chapter two, related literature to the study was reviewed. This covered literature from documents such as books, journals and handouts.

Chapter three dealt with the methodology of the study. It focused on the research design, the population, the sample, data collection procedure, the instruments for the data collection and procedure for data analysis.

Chapter four dealt with the analysis and discussion of the data while chapter five provided a summary and conclusion of the study as well as recommendations for further research.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

In this chapter, an attempt is made to examine related literature that might assist the researcher to know some information that has been written on TVET and other related aspects of the study. The review is done in the following areas:

1. Development of TVET in Sub-Saharan Africa
2. The TVET System in Ghana
3. The structure of technical institutes in Ghana
4. Female participation in technical and vocational education in Ghana
5. Entrepreneurship skill training in Ghana's TVET

Conceptual Framework of the Study

Miles and Huberman (1994) considered conceptual framework as “a visual or written product that explores, either graphically or in narrative form, the main things to be studied, the key factors, concepts or variables and the presumed relationships among them.” Robson (2002) viewed conceptual framework as the system of concepts, assumptions, expectations, beliefs and theories that support and inform research.

The purpose of this study is to investigate the challenges facing the two technical institutes in the Upper East Region appropriate concepts and variables to

be considered in the study. McGrath and King's (1994) "Training with Production (TWP)" model was adopted to provide a conceptual framework of the study.

McGrath and King (1994) proposed the model to map out a variety of experiences which are required to promote practical skills training in training institutions. These experiences provide the basis for selecting concepts, indicators and variables for the analysis of practical skills training.

The model is based on the assumption that practical skills training is part of a broader educational methodology of providing educational experiences which link the teaching and training process with the world of work. Thus, production, which is the main purpose of practical skills training, is essentially a subset of the broader environment of training as illustrated in Figure 1

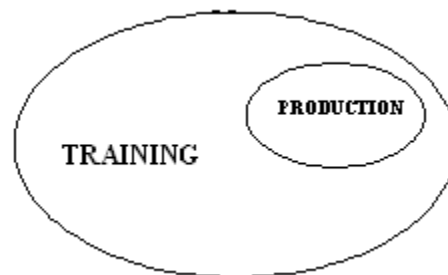


Figure 1: McGrath and King's Training with Production (TWP) Model

In applying the model to the programmes of technical institutes, it is assumed that while it is important for students to gain relevant knowledge, skills, attitudes and values, it is also necessary for them to have the opportunity for hands-on experiences that will help them to apply the competencies acquired to enable them produce goods and services. It implies that the quality of production

depends upon the quality of the overall training programme. At the time the quality of the training programme is affected by the quality of the production that comes out of the training. This argument reinforces the concept of competency – based training (CBT) in technical institutes.

The model further suggests that the effectiveness of training programmes depends on a number of variables. However, these variables are associated with various concepts and experiences that are used in the provision of technical and vocational education and training (TVET). Among these concepts and experiences are

- entrepreneurship education
- production unit
- industrial attachment
- competency based training
- essential basic and general skills

Whereas these concepts become necessary in a study of TVET, it is necessary to point out that the concepts to emphasize will depend on the focus of the study. For this study on providing practical skills training in the technical institutes, the concepts that can help in identifying relevant variables for the study include production unit, industrial attachment, competency based training and entrepreneurship education.

The Characteristics of TVET

TVET, according to Woltjer (2006), refers to a range of learning experiences which are relevant to the world of work and which may occur in a variety of learning contexts, including educational institutions and the workplace. It includes learning designed to develop the skills for practising particular occupations, as well as learning to prepare for entry or re-entry into the world of work. In both cases, the learning may be intended to lead to direct entry into the labour market or to act as a foundation for entry into further education and training for specific occupations.

TVET programmes, according to McGrath and King (1997), aim at providing wide access for developing and upgrading skills, knowledge and aptitudes. They can prepare participants to engage in productive work and, in doing so, to become more effective and efficient in order to help employers and enterprises to be more environmentally viable. TVET is a necessary investment for countries seeking to operate successfully in the highly competitive global market economy. Those countries who have invested substantially in TVET tend to be the most productive ones. McGrath (1997) and King cited Germany and Korea as examples of countries that have invested substantially in TVET and have benefited from it.

According to The Commonwealth Report (2001), TVET encompasses many levels. It includes:

1. basic training for manual trades through to technical and vocational occupations;

2. any or all areas of the labour market, from agriculture to management and from plumbing to tourism;
3. delivery in educational institutions, as well as on-the-job; and
4. formal (relatively long term and accredited), non-formal (short term) or informal (incidental, unstructured and unplanned) programming.

TVET, according to the Commonwealth reports (2001) covers both initial vocational training (undertaken by young people prior to entering the labour market) and continuing vocational training (undertaken by working adults or adults during periods when they are economically inactive). Training for the unemployed is sometimes considered as a separate category and designated “Unemployed Vocational Training” (UVT).

Development of TVET in Sub-Saharan Africa

Development of Formal Education in Africa

The history of formal education in Africa, according to Sifuna and Shiundu (1988), has it that in the colonial days, black Africans were denied literary education and were restricted to rustic and industrial manual education (vocational and lower-level technical education) to enable them provide service to the white settlers. Sifuna and Shiundu (1988) further explained that technical and vocational education was also heavily influenced by evangelization, driven by the need for minimal literacy to read scriptures. Thus, at the time of independence, black Africans rushed to throw off the "shackles" of vocational education to

receive the academic and higher-technology education and training that they had been previously denied.

The nature of vocational and technical education has not recovered from such a stained image. Ngome (1992) pointed out that shortly after political independence, the same technical and vocational education that was rejected during the colonial era has been thought of as a measure of curbing school leavers' unemployment". Ngome (1992) observed further that most teachers handling technical and vocational related subjects in the basic and secondary schools were generalists and, therefore, ill equipped in the practical skills to pass on technical knowledge and skills to their pupils. It for this reason, among others that governments are making frantic efforts to raise the image of TVET by ensuring that TVET is effective and efficient in providing requisite practical skills necessary for the Job market.

Atchoarena and Esquieu (2002) reported that in the 1960s, the governments of newly independent African countries emphasized education for all, in order to promote the social and economic development of their countries. In pursuit of this objective, which was affirmed by the 1961 Addis Ababa conference, great efforts were made to develop education systems, with strong emphasis on primary and secondary education. Increasing the number of schools, developing school programmes, training teachers were the watchwords of the mass education policy of the Sub-Saharan African countries. As a result, these countries often devoted a large proportion of their budgets to education.

Orivel (1994), cited in Atchoarena and Esquieu (2002), pointed out that the 1980s marked an abrupt halt in the development of African education systems, which brought about education crisis in Africa. This crisis was brought about by many factors, notably an unmanageable inflow of pupils, lack of resources, rising costs and inefficiency of school systems. As a result, the education provided was poorly suited to African developmental needs.

Although enrolment rates are still rising, Atchoarena and Dellieu (2001) observed that educational conditions and quality have deteriorated, especially in TVET. This is partly reflected in high rates of repetition of old methods in TVET delivery, the use of obsolete equipment and unrevised curriculum leading to ineffectiveness of TVET programmes in many countries. This situation has, to a large extent, compromised cost-efficiency and effectiveness of TVET.

In this context, Atchoarena and Dellieu (2001) observed that the development of private education is increasingly seen as a means of palliating the deficiencies of public education in terms of access, internal efficiency, curricula and quality of teaching. The growing number of private institutions in African countries reflects, not only families' loss of confidence in the public school systems, but also the inability of governments to meet the growing demands for education. In view of economic crisis and restructuring of public finance and spending, the state can no longer be the sole provider of education. Other stakeholders, therefore, are entering the education market by opening private institutions.

Atchoarena and Dellieu (2002) noted that public schools are no longer a sure path to social advancement, and the rising number of private schools allows families to choose between the public and private sectors. The crises of public finance in all of the countries of Sub-Saharan Africa also have led to cuts in operating budgets of public institutions providing TVET. As a consequence, many such institutions have sought alternative financing from private sources. However, in Ghana, Atchoarena (1994) mentioned that the number of private technical institutes is not rising due probably to the expensive nature of TVET as a form of education. This is because expansion requires huge investment in facilities and equipment.

The challenges in formal TVET sector in Africa

Atchoarena and Esquieu (2002) mentioned that TVET in Sub-Saharan Africa attracted increasing attention during the 1970s, because of the expectations that it was supposed to address the need for skilled labour. Many African governments started technical and vocational education institutions modelled after those of their former colonial powers. The technical skills acquired were supposed to raise individuals' job prospects and productivity. As a result, enterprises were supposed to become more competitive and make a greater contribution to economic growth, on condition that, those trained in these institutions actually matched the requirements of the labour market.

Atchoarena and Esquieu (2002) added that these public institutions were, and still are, financially dependent on the state and were under its administrative and operational control. The subjects taught at these institutions are regarded as

modernizing forces capable of contributing to economic take-off and to the development of manufacturing industry in the countries of Sub-Saharan Africa.

However, public TVET institutions, according to Atchoarena and Esquieu (2002), attracted a great deal of criticism in the early 1990s. First, they were unable to train skilled workers to meet the requirements of enterprises and were unaware of the need for continuing education. Second, they were extremely costly. Often, the graduates of these institutions joined the ranks of the unemployed, an indication that the training provided did not match the jobs available. In many countries, including Ghana, public TVET institutions have not been able to adapt to the new structure of the labour market and the new skill requirements of companies in both the formal and informal sectors.

Atchoarena and Esquieu (2002) further mentioned that the high rates of population growth in Sub-Saharan Africa apply pressure to all education systems, so the nations require increases in public spending on education just to keep enrolment rates at par with population growth. However, the financial crises in these countries and the structural adjustment policies adopted, since the mid-1980s, have constrained their public education budgets. The TVET sector was hit especially hard by these policies because it was being subjected to harsh criticism.

It should also be pointed out that public TVET systems in Sub-Saharan Africa cater for a minute proportion of those enrolled in school. In Ghana, for example, there were 474 public secondary schools, as compared to only 23 public technical institutes in 2002 (Government of Ghana, 2002; and National Council for Vocational and Technical Education and Training (NACVET), 2005).

The United Nation Centre for Vocational Education (1997) reported that the changing demands of the labour market required imaginative and innovative responses. Public, private and third-sector (not-for-profit and non-governmental) enterprises have to respond to and sometimes embrace many external forces, notably new technologies, globalisation, multi-national expansion and shifting demographics of the labour supply market.

The relevant question here is should TVET be teaching broad generic skills that are relevant to suit many employment situations or should it be teaching narrow job-specific skills that apply to a much smaller range of occupations? The former is more expensive and will take longer; the latter might be learnt in a shorter time period. The Commonwealth Report (2001) argued that in most cases, the former is in the best interest of the individual, while those funding the training might prefer the latter.

The report added that while it is commonly accepted that all forms of education will help people to get on, to improve themselves and to get better jobs, many parents believe that only a university education will offer their children the opportunity to acquire a good job. As a result, many countries find that the number of graduates from universities far exceeds the capacity of the labour market to provide appropriate employment. At the same time, these countries are unable to attract enough people to train for those positions of greater need, which might be “blue collar” jobs that might appear to involve manual labour, be dangerous, dirty and difficult (Commonwealth Report, 2001).

Carnoy (1993) mentioned that, despite the high level of unemployment amongst those with general education, the recognition and preference for general education by the youth in the Sub-Saharan Africa is high. The reason being that personnel in administrative and leadership roles are generally chosen from people with general education background. Therefore, talking about the importance of TVET, without any deliberate action to follow up the rhetoric, will not change its poor image and low status.

Studies on TVET and its impact on society, vis-à-vis the challenges posed by technology, have been carried out and reported by several investigators (Lauglo & Lillis, 1988; Loxley, 1985; McWilliam & Kwamena-Poh, 1978; Psacharopoulos & and). These studies pointed out that the major defect in most education systems in Africa is the strong bias toward the traditional literary and academic subjects.

Lauglo and Lillis (1988) pointed out that one dilemma which has preoccupied many African countries for a long time is whether to concentrate investment in general or vocational education. In human capital terms, general education creates “general human capital” and TVET leads to “specific human capital.” The former has the advantage of flexibility and, therefore, possibility of moving from one job to another, while the latter does not. In this regard, many people consider general education as a suitable type of education that is capable of responding to economic and labour force changes in society. On the other hand, technical and vocational education has the advantage of imparting specific job-relevant skills which make the worker more readily suitable for a given job

and more productive. Hence, both are important. Therefore, education systems in Africa are trying to combine both general and vocational streams of education in varying proportions.

Psacharopoulos and Loxley (1985) stated that in most cases, school systems lead to two paths: general education which enables pupils who gain access to them to continue in their schooling to higher levels; and vocational education for those who opt to focus on immediate employment or those who, due to limited access to education opportunities, are left out of the general education ladder. Some countries have “pathways” to give the latter group access to higher education.

However, Donge (2002) pointed out that, in most countries, including Ghana, pupils who opt for vocational schools may arrive at a dead end as far as higher education is concerned. While general education is currently directed towards the goals of “Education for All,” in most cases, the mode, functioning and content of TVET systems have been influenced and still retain its nature initiated by the former colonial powers and thus, resulting in no significant differences in patterns of delivery, levels of participation and general organization of TVET.

The challenges of skill acquisition in formal TVET

UNESCO (2001) reports that the acquisition of appropriate skills, both technical and social, is required to cope with the challenges presented by new technologies and other demands of the workplace. In the light of these challenges,

the report suggested that education and training systems must respond adequately to these demands and to contribute to the efforts to overcome the growing unemployment. It is also envisaged that by the year 2020, teenagers will make up the single largest age group in the world, especially in Africa. Many African countries already have a large population of teenagers who are marginalised, and are not prepared for work. This challenging situation is the result of most of our educational curricula not tailored to suit vocations that prepare the youth to the world of work. This increasing population of the youth poses a challenge for TVET in preparing them for the job market.

UNESCO report (2001) estimated that half of the world's workers are self-employed or work in small family enterprises in the informal sector. Providing TVET programmes to broaden skills, can increase productivity and significantly improve the fortunes of this large group of people. The social consequences of not meeting this demand are enormous. Therefore, it is a right conclusion, as reported by the Commonwealth of learning (2001) that the major challenge facing TVET is in meeting the demand, particularly from the exploding population.

Within the early 1990's, numerous concerns have been raised about the effectiveness of TVET. Nyankov (1996) summarised these concerns to include:

- poor quality in the delivery of TVET programmes;
- high cost of training;
- training not suited to actual socio-economic conditions;
- disregard of the needs of the informal sector; and

- disregard of the labour market and high unemployment rate among graduates.

The objectives of technical and vocational education, according to King and McGrath (2004), have become more diverse because of the changes in the labour market. They are no longer simply economic but also social, including the fight against poverty and the integration of young people into the working world. Given the prevailing economic trend, UNESCO (2004) identified the two major objectives of TVET as the urgent need to train the workforce for self-employment and the necessity to raise productivity of the informal sector. They point out that lack of resources have led to cuts in the volume of training provided in public institutions. These cuts are hindrance to pursuing the critical objectives of providing training and raising production.

Considering the expensive nature of TVET as a form of education, it is imperative that expanding it without necessary and adequate facilities and equipment will not lead to the effectiveness of the system. Empirical studies conducted by Afeti (2006) revealed that only a few governments in Africa are able to finance TVET at a level that can support quality training. Ethiopia spends only about 0.5% of its education and training budget on TVET while Ghana spends only about 1%. The figure is a respectable 10% for Mali and 12.7% for Gabon. Afeti (2006) recognised that TVET is expensive on a per student basis. In 1992, Gabon spent as much as US\$1,820 per TVET student. Unit costs are necessarily expected to be higher in TVET institutions than in primary and secondary schools because of smaller student-to-teacher ratios, expensive training

equipment, and costly training materials that are “wasted” during practical lessons.

Atchoarena (1994) had observed that there is contradiction between the emphasis for skills training and the limited funding that governments are willing to commit to TVET. Moreover, the international pressure on countries to meet their goals for “Education for All” by 2015 has meant that more resources have been shifted, both within national budgets and from international aid assistance, toward realizing universal primary education. Meanwhile, the rhetoric over skills and the value of TVET continues without positive actions. .

Haan (2001) mentioned that since the mid-1980s, there has been a growing discontent with the training programmes that were available for owners and workers of enterprises. Questions arose on the effectiveness and efficiency of existing TVET systems and programmes in many African countries. These questions include the ability to transfer adequately, relevant skills and assist TVET graduates who are unemployed to find employment. The early 1990s brought no changes in the provision of vocational training in Africa.

In analyzing the changes, Haan and Serriere (2002) identified two dimensions of the ‘crisis of TVET training.’ The ‘crisis of cost’ as vocational and technical training is inherently expensive. The other is the ‘crisis of relevance’ as formal vocational and technical training remains fundamentally focused on wage employment, sometimes with self-employment training as a kind of by-product (Haan, 2001). In essence, the problem of vocational training is seen as how to

respond to the changing labour market demands in times of dynamic global markets and rapid technological change.

TVET in Ghana

Levels of TVET in Ghana

According to Duodu (2006), Ghana's TVET, is delivered at three levels: basic education, second-cycle and tertiary education levels. At the basic education level, technical and vocational education starts from the Junior High School. Technical and vocational education at the second-cycle level is provided in the technical institutes, senior high technical schools, vocational/training centres and other post-basic education training institutions. Technical education at the tertiary level is delivered in the universities, the polytechnics and similar institutions as well as in some of the teacher training colleges.

Purpose of TVET in Ghana

Baiden (1994) explained that in Ghana, the purpose of technical and vocational education is to provide young men and women with skills training (in addition to general education) in order to enable them to fulfill the country's technical manpower needs including self-employment up to the middle level in the field of industry, business and agriculture. He added that the objectives of technical and vocational education, among others, include giving training and imparting the necessary knowledge and skills to trained artisans, craftsmen, technicians and other middle-level technical personnel. Duodu (2006) also mentioned that TVET enables the youth to have an intelligent understanding of

the increasing complexity of science and technology through systematic exposure to modern technology.

Other objectives of TVET, according to UNESCO (2001), include encouraging the increased participation of women in education, training and employment in the technical field. TVET also provides a sound foundation for further education for those students who may wish to continue their education later in the context of lifelong education.

Legislation on TVET

The delivery of TVET in Ghana, according to Duodu (2006), has been facilitated by the enactment of various laws, including the following:

- The Education Act, 1961, popularly known as the Compulsory Education Act, defined the public system of education under primary and middle school education, and secondary education, and made education at the primary and middle level free and compulsory.
- The National Vocational Training Act, 1970. In recognizing the need to emphasize the practical aspects of training, the Act provided for the establishment of a national vocational training institute (NVTI) under the Ministry of Employment and Social Welfare to perform certain specified functions including the following:

- organizing apprenticeship, and other training programmes for industrial and clerical workers, and training the instructors and training officers required for the purpose;
 - developing training standards and trade testing.
- The Ghana Teaching Service Decree, 1974 (NRCD 247), was promulgated for the establishment of the Ghana Teaching Service to ensure effective management, supervision and inspection of pre-university educational institutions as well as the provision of teacher education, general education, special education (such as education of the handicapped), technical and business education in Ghana and the formulation of educational policies and programmes. The name Ghana Teaching Service was changed to Ghana Education Service in 1975 by the Ghana Teaching Service Amendment Decree, 1975 (NRCD 357)
- The 1992 Constitution of the Republic of Ghana, stated, among other things, in Article 25 that "secondary education in its different forms, including technical and vocational education, shall be made generally available and accessible to all by every appropriate means, and particular, by the progressive introduction of free education. Article 38 further stated "That State shall, subject to the availability of resources, provide:
 - equal and balanced access to secondary and other appropriate pre-university education, equal access to

university or equivalent education, with emphasis on science and technology;

- a free adult literacy programme, and a free vocational training rehabilitation and resettlement of disabled persons and
- life-long education".
- The Polytechnic Law, 1992 (PNDCL 317), promulgated in 1992, empowered the six Polytechnics in Ghana which were already in existence, to, among other things, provide technical education at the tertiary level.
- And more recently, the COTVET Act entitled the council for technical and vocational education and training Act, 2006. This act set up COTVET to co-ordinate and oversee technical and vocational education and training in the country and to provide for related matters.

Establishment of COTVET

The Government of Ghana report on TVET (2008) explained that over the years, there has been duplication in the organization and administration of TVET in Ghana due to the delivery of TVET by a proliferation of institutions and organizations. To remedy this situation, the Government decided, in its white paper on the Review of 2002 Educational Report to rationalize the entire system of TVET in the country by establishing a co-ordinating body known as the COTVET.

The Government of Ghana report (2004) mentioned that the government of Ghana passed a COTVET Bill. The object of this Bill, according to the Government of Ghana (2006), is to establish a COTVET to co-ordinate and oversee all aspects of TVET in Ghana. According to the Bill, the functions of the Council are to formulate policies for skills development across the broad spectrum of pre-tertiary and tertiary education, formal, informal and non-formal, ensure quality in the delivery of access to TVET and facilitate research and development in TVET. Other functions of the Council are to maintain a national database on TVET, issue annual reports on the state of skills development in the country, advice Government on all aspects of TVET; and perform other functions that are ancillary to the object of the Council (GoG, 2006).

The Bill, (GoG, 2006) also spelt out that the governing body for the Council is a Board which consists of a chairperson with considerable industrial experience, personnel from government institutions, the Executive Director of the Council, two persons with expertise in TVET, and other persons representing

employers, organized labour and non-governmental organizations that manage privately owned technical or vocational training institutions.

National Vocational Training Institute

The National Vocational Training Institute (NVTI), according to Roeske (2003), is a technical and vocational training agency under the Ministry of Employment and Social Welfare. The courses offered by the NVTI are mostly practically oriented. Roeske further explained that in general, the NVTI courses consist of 75% of practical training and 25% theoretical studies. The duration of the courses varies from 2 to 4 years, with the 4-year courses run on block-release basis. Also run by the NVTI are 2 to 3-year apprenticeship courses, which are known as centre-based courses simply because both the educational and practical training are done at the centre. Roeske added that these courses lead to the Tradesman Grade II and Grade I certificates. Entry to NVTI courses is open to holders of the Middle School Leaving Certificate, Junior Secondary School Certificate, Basic Education Certificate or its equivalent.

The Integrated Technology Transfer Unit (ITTU)

Kitaev (2003) explained that the ITTU is another place where practical training is offered to the youth. He explained that it is a group of production workshops demonstrating new products and improved manufacturing methods. It shows what is possible and leads the way by providing a practical example for others to follow. It liaises with educational as well as research institutions and also offers

rural and women's industrial extension services to help introduce non-engineering income-generating activities such as food-processing, textiles and pottery.

The Structure of Technical Institutes in Ghana

Technical Institutes are part of the second cycle level of the education system in Ghana. They provide technical and vocational as well as academic courses for Junior High School and Senior High School graduates with the aim of producing highly skilled workers, master artisans and technicians in various technical fields for direct employment in the world of work.

Various programmes including full-time, block release, part-time and sandwich courses are offered by the technical institutes. However, the two technical institutes in the Upper East Region offer only full time and part-time programmes. There are currently 26 state-owned technical institutes under the Ministry of Education and Sports (MoES).

The Administration of Technical Institutes in Ghana

TVED (2008) statistics revealed that the responsibility of organizing and providing technical and vocational education at the craft and technician levels in the Technical Institutes under the Ministry of Education is vested in the Technical and Vocational Education Division (TVED) of the Ghana Education Service. Duodu (2006) also added that the TVED exercises a supervisory role over the technical and vocational institutions in the private sector. The Division is also responsible for developing and reviewing curricula for technical and vocational

education programmes, for conducting technical examinations, and for awarding the corresponding certificates.

Programmes Offered in Technical Institutes

Students who complete Basic Education enter a technical institute where they take a 3-year programme leading to the award of an intermediate craft certificate. On completion of their craft course, the Technical Institute graduates may enter into employment for a year, after which they may go back to the Institute to do the advanced craft or technician course. After the advanced craft or technician course, the students may proceed to a Polytechnic for the Pre-HND or HND programme or to any of the other tertiary institutions for preparation for an occupation of their choice. The graduates from the Polytechnic have the opportunity to enter any of the Universities to undertake a degree course.

Under the new educational reform launched in 2007, the report on Ghana's education GoG (2008) explained that the new curriculum for technical and vocational education, at the craft level as well as the advanced craft and technician levels includes, among others, general subjects. These subjects give the students a sound background in general education so that those who have the ability may proceed to the highest possible level of their educational and occupational careers. With the integration of the general subjects into the technical and vocational education curriculum, firm linkages have been established throughout the educational system. For example, in the case of

technical and vocational students, Duodu (2006), explained that provision has been made for the admission of the following;

- artisans to craft courses.
- craftsmen to technician courses
- and technicians to university or professional courses.

Afeti (2006) pointed out that most of the syllabuses for the various courses run in the technical institutes under the administration of the Ghana Education Service are obsolete. Additionally, these syllabi have not been reviewed for a long period to bring them in line with educational requirements and with modern developments in the trade areas in industry, business and the employment market.

Technical Institute Programmes under the New Educational Reform

The courses being ran by the public technical institutes, according to TVED (2007) cover broad areas in the fields of engineering, building, business, catering and the hospitality industries. Additionally, the technical programmes have been enriched with the following core subjects:

- English Language
- Mathematics
- Integrated Science
- Social Studies
- Information and Communications Technology (ICT)

- Introduction to Technical and Vocational Education Training (first year only)

Limited Vacancies in Public Technical Institutes at the Post Basic Level

Government of Ghana Report (2004) indicated that many of the youth have no access to further formal education at post-basic level. The transition rate from JHS to SHS was pegged at about 30%. The report further indicated that in 2001, for example, out of the 247,699 candidates presented nationwide for the Basic Education Certificate Examination (BECE), 149,611 passed, obtaining aggregates between 6–30 for their best six subjects (the minimum required for SHS entry). Therefore, 60% of JHS leavers were qualified to enter SHS, but had to compete for the only 82,000 places available at these institutions. Thus only about one third of those who completed the JHS could continue to SHS level. The other post-basic training opportunities, such as technical and vocational institutions, are minimal in comparison to the SHS places. For example, the 25 public technical institutes enrolled a total of about 18,000 (about 8%) post-JHS students in 2001/2 academic year (GOG, 2003). Hence, an estimated 100,000 formal post-basic places exist annually for the nearly 250,000 JHS graduates which translates to 40%. What do the remaining 150,000 JHS graduates do? While some of these will enter into private education and training institutions, most enter the informal economy to work or to seek informal skills training in apprenticeships. Fascinatingly, TVED (2008) statistics indicated that the Upper East Region has a different story. In almost every year, vacancies exist in the two technical institutes if insistence is made on national entry qualification. This

unfortunate situation is due mainly to poor basic education examination results in the Upper East Region.

Financing of Technical Institutes in Ghana

Both Atchoarena (1994) and Kitaev (2003) mentioned that in Ghana, and almost all African countries, the government is the main provider of funds, both recurrent and capital. Duodu (2006) explained that the funding covers the provision of buildings, equipment, hand tools, materials for training and staff emoluments. However, the amounts of funds allocated to technical institutes are substantially of the recurrent budget which goes into personal emoluments. Thus the money left for the procurement of equipment, hand tools and materials for training falls far short of what is needed for effective delivery of technical and vocational education and training.

In most cases, friendly foreign countries constitute another source of funding for technical and vocational education. The assistance given by the foreign countries may be in the form of loans or grants. In Ghana, only three out of the 26 public technical institutes enjoy some sort of support from friendly foreign donors. For example, the Canadian government, through the Canadian International Development Agency (CIDA), has jointly with the Government of Ghana, established two technical institutes, namely Accra Technical Training Centre and Kumasi Technical Institute. The German government has also under a joint project with the government of Ghana helped to establish Takoradi Technical Institute and continues to give support to this Institute in the form of

equipment and materials for training. Through the cooperation of the Governments of Ghana and France, an Industrial Maintenance Department, which is the first of its kind in Ghana, was established at Accra Technical Training Centre in 1994 to train industrial maintenance technicians on full-time as well as on part-time basis (Kitaev, 2003).

Bennell (1999) contended that the expansion in education and training is not matched by increased budgetary allocations. Atchoarena (1994) concluded that one of the most common reasons or excuses given for the ineffective technical institute programmes in Ghana is inadequate financing of the TVET sub-sector. It is in the light of these financial burdens on government that Atchoarena suggests some appreciable involvement of the public in the funding of technical and vocational education in Ghana.

Links of Technical Institutes with Industries

It has been observed by the Report of Government of Ghana (2004) that the link between technical institutes, industry and the informal sector is weak, resulting in serious mismatches between supply and demand for skills. This unfortunate situation has not been able to make way for a smooth transition from school to a particular market or sub-market with respect to products and qualifications. Additionally, the weak link has also demoted the students' ability to create one's own work by exploring economic potentials within their own environment.

The Ministry of Education Report (2004) assumes that close ties with industry and business are the distinguishing characteristics of technical and vocational education. This could be true for few technical institutes that presumably enjoy some form of donor support.

The report further indicated that the value of attachment of both staff and students to industrial business establishments is also not given due recognition by the technical institutes, and so little effort is put, with varying degrees of success, to attach their staff and students to such establishments.

Studies conducted by several investigators (Kanawaty and De Moura Castro 1990; Kerre and Kwende 1995) assert that for TVET programmes to be of good quality and relevant, they must reflect the requirements in the world of work. They concluded that close ties with industry and business are the distinguishing characteristics of effective technical and vocational education. These ties should affect all aspects of the work of technical and vocational institutions, including the courses, syllabuses, staffing and equipment.

King, Korboe and Palmer (2006) reported that Ghanaian governments have periodically reformed the education and training system in the country with the principal objective of making it more relevant for the world of work. There have also been several government-led vocational and technical skills programmes which sought to facilitate the transition from school to gainful work and to address the problems of underemployment or unemployment in Ghana, particularly in the informal sector. Examples of these are the three-year NVTI, the three year Technical Institutes, the three-year integrated community centre for

employable skills (ICCES), and intensive short-duration skill training and entrepreneurship programme (STEP) and donor-funded projects like the vocational skills and informal sector support project (VSP) programmes. The latest initiatives in the provision of skills training is the public private partnership which started constructing a Ghana Industrial Skills Development Centre (GISDC) in Tema in 2006 (SQA, 2005, cited in King, Korboe & Palmer, 2006).

King, Korboe and Palmer (2006) further observed that, one of the major issues in the sector of skills development, as noted by the President's Education Reform Committee (Government of Ghana, 2002), has been the almost total neglect of the TVET sector in the education system. Yet, it is this sector that many children from needy families attend. They argued that because of the low quality in the education and training provision, obsolete equipment, and lack of relationship with industry and employment, a vicious circle is created whereby no wealthy family would consider technical or vocational education for their own children.

Empirical data gathered by King, Korboe and Palmer (2006) also revealed that the lowest training cost of public provision of skills training for poorer young people is the Integrated Community Centres for Employable Skills (ICCES). This centre and similar ones like the National Vocational Training Institutes and many Technical Institutes have been neglected.

School-Based Enterprises and Production Units in Technical Institutes

School-based enterprises and production units, according to Singh (2000), are school models which combine market production with systematic vocational learning. The essence is to provide learners with economically useful qualification and facilitate transition into the employment system in which graduates will be able to immediately apply their skills. By so doing, learners will be producing items as well as providing services to their community while learning. This model is practiced in few technical institutes in Ghana, for example the Accra Technical Training Centre and the Takoradi Technical Institute.

The introduction of production units, as supported by Duodu (2006), assumes to bring the school closer to the realities of life, particularly the world of work, and goes beyond the prevailing thinking that individual lives are divided into a span of time just to study and another just to work.

Botchie and Ahadzie (2004) also justified production with learning by the need to find new ways of teaching and learning so as to increase pupils' interest and motivation in their studies. An important aspect of school-based enterprises is the factor of motivation for effective learning through combining learning with production, in that the training underlines the importance of visibility of future returns. Last, but not the least, through the synthesis of education and production, technical and vocational education institutions are expected to exploit new financing options for meeting training costs.

Singh (2000) emphasized that the introduction of school based enterprises is also to ensure that technical and vocational education provide specialised

vocational training in traditional and newly-emerging skills needed for existing jobs and production practices. This will also encourage employment and improves productivity. With the increasing importance of the informal sector, processes of training aimed at providing employment deserve more attention. This includes the question of how technical and vocational training can be designed so as to be job-specific, vocationally specialised, and directly linked to employment.

Singh (2000) posited that close linkages between technical and vocational education and the world of work are of primary importance to the relevance of education for the world of work. There are many ways to establish such linkages. She adds that one way of establishing that linkage is by linking the process of technical and vocational education to real work and market situations.

Female Participation in Technical and Vocational Education

UNESCO (2001) report indicated that during the last few decades, developments in various fields of science and technology have had a profound impact on the quality of life of the major part of the human population, eliciting thereby significant societal changes. This unprecedented pace of the globalization process, however, causes a wide gap when seen against the unequal development of science and technology between developed and developing regions of the world as well as between men and women. In most parts of the world women and girls continue to be under-represented in fields of study and employment related to science and technology.

According to Shah (2003), there are strong reasons to believe that a lessening of gender inequality is important in the promotion of economic growth

and in the reduction of poverty. A reduction in gender inequality, especially in its more extreme forms, is also desirable from human rights prospective.

Colcough (2003) admitted that in many societies, women do not enjoy the same opportunities as men. They work longer hours and they are paid less; their life chances and choices are more restricted than for men. Girls' unequal access to, and performance in education is both a cause and a consequence of these disparities. Educational inequality is seen to have caused some amount of infringement of the rights of women and girls and an important barrier to social and economic development.

In Africa, the area of science and technology is the one with a significant shortfall of human resources and many countries are required to seek expertise from other countries. It is important to note that no African country can achieve scientific and technological advancement if the female population is left out.

There are a number of compelling reasons why it is important to promote the participation of girls and women in science, technical and vocation education (STVE). Clegg (2006) reiterated that girls can no longer rely on the traditional, limited range of occupations as the nature of the labour market is changing. She further emphasizes that an increasing number of occupations are technical and unless women have the ability to access them, they will continue to suffer from unemployment. Today many of society's problems are best solved by the application of technology, and women's increased participation in this field can bring important knowledge in areas of food security, health care and community needs in general.

Additionally, World Bank Report on Education (1995) indicated that national populations of African women in their respective countries are quite substantial. The report estimated the number to a little above half of national population figures. This implies that such a human resource cannot be left at the margin of the economic development of their countries. Although a number of innovative actions are underway to remedy this situation, the report further suggested the need for change so as to cater equally for boys and girls in science and technology programmes.

According to the World Bank Report on Education (1995) despite world progress in working towards equity for women and men in all spheres of human life, women are still under-represented in many areas of public life and the working world. Public policy and legislation in the majority of countries in the world now reflect the developments of the past 50 years of feminism in making reference to the need for women to participate equally in politics and decision-making, education, employment and other areas of public life. Governments are signed up to numerous international treaties, and therefore, commitments have been made to improving the status of women in the majority of countries.

Despite these changes, Hoffman-Barthes, Nair and Malpede (1999), contended that the beliefs about the roles of men and women are still very strong, and women continue to play dominant roles as home makers, mothers and careers, and in professions considered to be the domain of women, such as teaching and nursing.

Girls' Access to Technical Education

In spite of the modest improvement in girls' and women's education and employment opportunities in technical and vocational courses, UNESCO Institute of Statistics (UIS (2006) report indicated that some gender segregation in education, employment and position in the society still exists. In many countries throughout the world, religious traditions, social structures, cultural norms and value systems have caused the inequalities of women in many sectors of the society and restricted their opportunities for effective participation in socio-economic activities. Presently, women are becoming increasingly aware of their role in the nation building processes and activities, particularly related to economic development, for which technical and vocational education is critical and crucial.

In spite of this favourable climate, the Government of Ghana (GoG) (2008) indicated that most Ghanaian parents have been reluctant to expose their daughters to the "hard" and "hazardous" field of technical and vocational education and training. Some of the fields are in the high technical programmes like carpentry and joinery, automobile, painting and decorating and plumbing. Ministry of Education (MoE) Report (2000) estimated the number of females in male dominated technical programmes to be less than 5% of the total intake in such programmes. It is in the bid to curb this anomaly that the Ghana Education Service (GES) appointed a National Coordinator for Women in Technical Education (WITED)

Consequently, the majority of Ghanaian females who have the benefit of further education and training opt for general education in senior high school (SHS) and female dominated programmes in technical institutes, such as fashion, hairdressing and catering. Hence, female employment naturally follows a similar pattern.

In a World Bank final Report entitled “Revisiting Technical and Vocational Education in Sub-Saharan Africa: An Update on Trends, Innovations and Challenges,” Atchoarena and Dellieu (2001, p.39), reported that:

Girls are under-represented in technical and vocational education, as in all other sub sectors of the education system. Gender inequality where access to technical and vocational education is concerned reflects a gender-based division of labour, and the low enrolment rates for girls reflect the status that societies attribute to women.

The report contends that job related tasks are based on a complex system of long standing traditions and attitudes. As a result, females in most cases follow professions leading to occupations such as hairdressing, secretarial work, health care, hotel work, garment manufacture and home economics. Males, on the other hand, move towards industry based occupations, such as mechanics, electricity and civil engineering.

According to GES (2004), the Ghanaian educational policies do not and have not discriminated against any section of the community. Males and females are all entitled to equal educational opportunities under the law. However, cultural beliefs and practices as well as inadequate provision of educational facilities have

hindered the full implementation of policy on girls and women in formal education. The Ghanaian educational policy, as manifested in Article 25 of the 1992 Constitution of Ghana (Republic of Ghana, 1992) provides equal educational opportunities for both boys and girls.

Factors Influencing Girls' Participation in Technical and Vocational Education

Studies conducted by Hardings (1992) on the factors influencing gender-specific differences in science related programmes revealed that, because gender impacts on education, as on other social systems, school is more likely to echo and reinforce prevailing attitudes. Some subjects are seen as more appropriate or useful for girls and others for boys. Girls rarely receive positive encouragement to enroll in the technical and scientific subjects for which boys are supposed to have a natural aptitude and girls are not shown the practical application of these subjects to a wide range of occupations.

In some cases, according to Hoffmann-Barthes et al. (1999), there is a wrong perception of technical and vocational education. Technical training is used when referring to boys and vocational training when referring to girls. The trend has been that any boy whose parents are poor or fails to gain admission to traditional secondary schools because of poor grades get enrolled in a technical school, and in the case of a girl, gets enrolled in a "vocational" school. They added that girls seem to internalize the prevailing expectations, and many give up, especially when it comes to the study of science-related subjects. One of the

negative attitudes of girls appears to be the acceptance of the myth that boys are better in science related subjects than girls. Girls in primary schools see themselves on an equal footing with boys and many do better than the boys academically. Some girls in adolescence, according to Hoffmann-Barthes et al. (1999), tend to be self-conscious and erroneously believe that it is not feminine to be brilliant in technical, scientific or mathematical matters.

The school curriculum, according to Hoffmann-Barthes, Nair and Malpede (1999), plays an important role in making a discipline relevant and attractive to students and to encourage their involvement. The conclusion drawn from the reports is that in many countries the school curriculum is still structured to reinforce the societal perception of a woman's role in family life, gender role stereotyping in textbooks, teaching methods and even a lack of female teachers as role models.

The GoG report (2008) indicated that some Ghanaian parents, having been made aware of the benefits of technical and vocational education to girls, have taken advantage of government equity programmes. They are not only sending their girls to school, but also encouraging them to offer science-related programmes.

Entrepreneurship Skills Training

Smith (2006) explains that, as more young people complete their basic education, governments are faced with the challenge of providing them opportunities for further learning. This will either be in the form of general secondary education or alternative preparation for the world of work. Many

countries, particularly in Africa, consider that technical and vocational education and training (TVET) can equip young people with skills that enable them to engage in productive livelihoods. Yet in the past, TVET programmes have not led to increased employment, despite the obvious need in these countries for technical and vocational services. This, according to Smith (2006), has been due in large part, to a dearth of wage employment opportunities for technically trained workers.

The Ghanaian government, according to Abban and Quarshie (1996), with the assistance of the United Nations Development Programme (UNDP) and the International Labour Organization (ILO), has made efforts to introduce entrepreneurship awareness to many vocational training institute students. The major objective is to direct graduates towards self-employment as a viable alternative to formal employment.

An example is the Ghana National Association of Garages. The Small Business Centres in Ghana have made possible the co-operation between vocational training institutes and traditional apprenticeships. The vocational training institutes can co-opt the low cost work environment of the informal sector to enhance their students training and preparation for self-employment and, through thoughtful and flexible programming, the vocational training institutes offer useful courses to upgrade the training and productive skills of the apprentice masters. Both vocational training institutes and traditional apprenticeships have been made to converge in order to impart productive skills for the local economy.

These centres, according to Abban and Quarshie (1996), and were created specifically for aiding production activities in vocational training centres. They act as an intermediary between enterprises which demand products and the vocational training centres which provide them. They aim at identifying requirements from enterprises, particularly when the demand for products required is too large to be met by only one vocational centre; discussing and fixing prices and deadlines; distributing the total demand among the various centres, taking into account their production capacity; and providing them with raw materials. Unfortunately, this innovative measure was not extended to technical institutes.

In an attempt to address this issue, Smith (2006) explains that UNESCO proposed that entrepreneurial skills should augment the technical knowledge and skills young people gain in formal vocational training. If this is done, it will help them to acquire the mindset and know-how necessary to make self-employment a viable career option.

Duodu (2006) admitted that in pursuance of this proposal that the Ghana Education Service, in 2003, through the Technical and Vocational Education Division (TVED) mandated technical institutes to include in their curricula entrepreneurship skills training programme. The idea was to prepare secondary-level TVET students to start their own small businesses after completing their course of study.

Empowering young people to become self-employed and engage in a productive livelihood does not only help them escape the trap of poverty, but also

enables them to become active contributors in the economic and social activity of their community. According to Boeh-Ocansey (1989), the ability to engage in a livelihood is a vital life skill. Therefore, entrepreneurship may be considered as a valuable contribution towards achieving the Education For All (EFA) process which entails, among others, providing young people and adults with access to quality life-skills programmes.

Boeh-Ocansey (1989) pointed out that entrepreneurship skills training (EST) provides supplementary knowledge to young people receiving TVET to acquire an entrepreneurial mindset and the knowledge to set up small businesses. Boeh-Ocansey (1989) further mentions that numerous education policy-makers in Africa have bemoaned the lack of employment opportunities for the technically trained, while at the same time the availability of technical services was very limited. Smith (2006) posited that young technically trained people need to become self-employed as independent service providers rather than depend on finding wage employment. Boeh-Ocansey (1989) agreed that young people would then be able to satisfy the demand for those services while carving out profitable careers for themselves. Entrepreneurship skills training aims at instilling a heightened sense of self-confidence, particularly among non-formal learners, and awakening them to the possibility that self-employment could be a viable career option.

Launching a successful business, according to Dave (1990), requires an awareness of one's knowledge, skills, abilities, aptitudes, values and preferences. EST therefore begins by inviting students to consider their own strengths and

weaknesses in these areas, so that they develop a clear sense of themselves. They are encouraged to perceive themselves as the actors responsible for their own lives.

Dave (1990) further mentioned that EST is to make the transition from the structured atmosphere of the school to the world of work easier and smoother. Smith (2006) concluded that EST promotes economic self-reliance and the need to play a constructive role in the community. It also promotes the possibility of building a human capacity, a key element of sustainable development. Furthermore, empowering young people to engage in productive livelihoods is consistent with the first of the Millennium Development Goals, which is concerned with poverty eradication (ILO, 1993).

Cultural Influence on Entrepreneurship

Studies conducted by Haftendorn and Salzano (2003) identified that the importance of social and cultural influences on entrepreneurship and the formation of new enterprises were obstacles to job creation. Cultural standards are understood as all kinds of recognition, thinking, values and activities that the majority of members belonging to the same culture considers as normal, natural, typical and binding. Behaviour is controlled on the basis of recognized cultural standards. The individual view and the group-specific view of cultural standards differ within a certain range. Central cultural standards in one culture can be completely missing in another culture or only have peripheral meanings or fundamental different functions. Entrepreneurship is understood in a wide social,

cultural and economic context, as well as being innovative at home, school, leisure and at work.

Entrepreneurship involves life attitudes, including the readiness and the courage to act in the social, cultural and economic context. Entrepreneurial qualities or behaviour, according to Haftendorn and Salzano (2003) include:

1. creativity and curiosity
2. motivation by success
3. willingness to take risks
4. ability to cooperate
5. identification of opportunities
6. ability to be innovative and tolerate uncertainty.

Cultures that value and reward entrepreneurial behaviour promote a propensity to develop and introduce radical innovations, whereas cultures that reinforce conformity, group interests, and control over the future are not likely to show risk-taking and entrepreneurial behaviour (Haftendorn & Salzano, 2003).

Hofstede's (2000), cited in Haftendorn and Salzano (2003) study, on how values in the workplace are influenced by culture brought, about the development of a model that identifies five primary dimensions to differentiate cultures as follows:

1. Power distance focuses on the degree of equality or inequality between people in the country's society.
2. Individualism focuses on the degree to which the society reinforces individual or collective achievement and interpersonal relationship.

3. Masculinity focuses on the degree to which the society reinforces or does not reinforce the traditional masculine role model of male achievement, control and power.
4. Uncertainty avoidance focuses on the degree to which the society reinforces – or does not reinforce – uncertainty and ambiguity within it.
5. Long-term orientation focuses on the degree to which the society embraces – or does not embrace – long-term devotion to traditional, forward thinking values.

However, cultural difference is not the only reason that make people become entrepreneurs. There are two types of entrepreneurs identified by Shane, Kolvereid and Westhead (1991), cited in Haftendorn and Salzano (2003). These are:

1. those voluntarily pursuing an attractive business opportunity and
2. those who are engaged in entrepreneurship out of necessity, because they can find no other suitable work.

It is, therefore, important for prospective entrepreneurs to identify the driving motive in the sector. This knowledge in entrepreneurship skills will assist prospective entrepreneurs to make an informed decision, hence its inclusion in the curriculum of technical institutes.

Labour Market and Employment Situation of Youth

The ILO (1993) report mentioned that the world's population is growing at a time when traditionally stable labour markets are shrinking. In most African countries, rapid globalization and technological change have altered both how

national economies are organized and what is produced. Countries differ widely in their restructuring practices, depending on tradition and culture, as well as the legal and regulatory framework. The report further mentioned that traditional employee, entrepreneurs, managers and the roles of men and women are seen as a common factor that is changing throughout the world.

According to Haftendorn and Salzano (2003), the demand for wage labour comes from the public sector for administration, public services and state-owned companies. Entrants to the labour market are people from all walks of life. They however contended that the trend in recent years was to decrease employment in the public sector by increasing the efficiency in its administration, by reducing the services provided to the population and by the privatization of public owned enterprises.

Earlier ILO (1993) report reiterated that the private sector with its large, medium and small enterprises could also not absorb, in most cases, the additional labour. Most of the retrenched workers from the public sector become unemployed because they cannot become self-employed. Thus, in an economic crisis period, the public sector releases workers and employees that increase the unemployment rate. Consequently, self-employment and creation of micro enterprises in the informal economy become very important.

The Commonwealth (2001) report mentioned that studies revealed that in periods of economic crisis, young people entering the labour market have little chance of finding employment because they lack the requisite skills. Under such situation, the report identified self-employment as a survival strategy to generate

some income, for subsistence. Becoming the owner of a micro or small enterprise could be an alternative for a young person who has an entrepreneurial mindset but who also possesses some of the basic skills and knowledge requirements needed for the private sector. The report concluded that awareness of this career option and an enabling environment for enterprise creation plays a crucial role for a successful start-up.

However, Singh (2000) indicated that only a small percentage of the labour market population belongs to the group of private entrepreneurs or self-employed. The number depends on the prevailing political system, the cultural acceptance of entrepreneurship and the economic strength of the country.

Enterprise creation, according to the ILO (1993) report, does not occur as an idea to unemployed persons or wage labourers threatened with dismissal, as there is no private enterprise culture. Enterprise creation is rather a real chance for young people who during the transition period to a market economy have studied modern management and who are willing to take risks. Unemployment is but one dimension of the employment problems that confront youth. There are those who are able to cope, those who exercise their entrepreneurial spirit by carving out a living from activities in the informal sector (such as artisan crafts, street vending, cooperative work and recycling).

The problems facing youth are more significant in rural areas due to the lack of support systems. The ILO (1993) report pointed out that, in poorer communities, where public or family sources provide little income support, jobless young people often eke out a living by means of low productivity work

which are in most cases subsistence-oriented, and yields low income. Examples of such jobs include hawking and car washing. The motive, is to mobilize funds to start own business. Others may be engaged in salary or wage employment as a springboard to self employment. In such low income jobs, the worker may work for excessively long hours with little reward. The widespread stagnation and decline of employment opportunities in the formal sectors of most developing countries has intensified the problem in recent years, with young women bearing a disproportionate burden.

Information gathered from the ILO (1993) report however pointed out that nowadays entrepreneurs have a rather positive reputation and governments are willing to promote business creation. This generates a favourable environment, in particular for young people with a good educational background and skills and the risk-taking necessary to start an enterprise. hence the need for technical institutes to focus on entrepreneurship skill training schemes.

Promoting Entrepreneurship and Enterprise Creation

Promoting entrepreneurship and enterprise creation is high on the policy agenda of almost all countries in the world, as successful enterprises generate additional employment. But governments, as Haftendorn and Salzano (2003) pointed out, should note that awareness programmes at basic and secondary school levels only have long-term effects. Programmes at vocational training schools are supposed to have medium-term effects while university programmes can produce results in terms of business creation in the medium and short-term.

Entrepreneurship education stimulates young people to think about entrepreneurship and the role of the business community in economic and social development. Students also get an opportunity to analyse the changes taking place in their countries and are encouraged to consider self-employment as a career choice.

A study conducted in Ghana by Palmer (2007), revealed that technical training can play a part in developing supportive attitudes and interests for entrepreneurship. This implies mental readiness to make a living by entrepreneurship and preferably working in the private sector. Self-employment, through entrepreneurship skill training, tends to come after years of experience. This takes place from, first, having been employed by someone else, benefiting from skills, capital and contacts gained during employment. But it does appear that in some cases, exposure to vocational and technical subjects can stimulate interest in eventually becoming self-employed.

Weeks (1999), cited in Lauglo, Akyempong, Mwiria and Weeks (2001) also noted that the transition to self-employment, in some cases, usually follows from working for one's parents or relatives on their land or in their business. There will often be a long wait before a person becomes self-employed by taking over the family farm or business under such circumstances.

Summary of Literature Review

The challenges of practical skills training in technical institutes in the upper east region of Ghana, no doubt, have a great implication for the provision of quality technical education in the region. Hence, the choice of the topic for this

study and an attempt has been made to explore the relevant and related literature on TVET.

The review of related literature covered the challenges of the development of technical vocational and education and training in Sub-Saharan Africa; and technical and vocational education and training system in Ghana. Other areas covered in the review included the structure of technical institutes in Ghana, female participation in technical and vocational education and entrepreneurship skill training.

In the case of the challenges facing technical institutes in practical skills training, the literature identified that there is a weak link with industry. It also identified poor funding of the technical institutes. It also identified a wide gap in the unequal representation of women on most of the technical institute programmes. It also pointed out the importance of entrepreneurship training to self employment. Finally the literature reviewed identified the negative effect on the quality of TVET in relation to the provision of training materials.

CHAPTER THREE

METHODOLOGY

This chapter discussed the procedures and methods adopted in carrying out the research. The discussions include research design, population and sampling techniques, research instruments, pretesting of the instrument, data collection, and the technique used in analyzing the data.

Research Design

Research design, according to Fraenkel and Wallen (2000), is the overall plan for collecting data in order to answer the researcher's questions. It identifies also the specific data analysis techniques or methods that the researcher intends to use. Gay (1992), cited in Amedahe (2002), explained that research design indicates the basic structure of a study, the nature of the hypothesis and the variables involved in the study.

For the purpose of this study, descriptive survey was used. According to Koul (2002), descriptive survey design is used to obtain pertinent and precise information concerning the current status of phenomena and, whenever possible, to draw valid general conclusions from the facts discovered.

The researcher's choice for a descriptive survey emanates from the fact that it permits asking the same set of questions often in the form of written questionnaires to a large number of respondents (Fraenkel & Wallen, 2000).

Additionally, Osuala (1993) explained that descriptive survey is appropriate for studying samples drawn to infer the characteristics of a defined population or universe. Based on these strengths that a descriptive survey has, the researcher employed it in the study. In this study, the challenges confronting practical skills training were examined and described.

The Study Area

The study area is the Upper East Region of Ghana. The region is situated in the northeastern corner of Ghana, bounded on the north by the Republic of Burkina Faso, on the west by the Upper West Region of Ghana, on the south by the Northern Region of Ghana, and on the east by the Republic of Togo. It covers an area of 8,842 square kilometres. The region is made up of six districts and two municipalities.

The Upper East Region lies in the Sudan savanna belt, which has a vegetation of short grass and shrubs interspersed with a few trees. The vegetation generally becomes slightly luxurious where soil and moisture conditions permit, usually along water courses. Therefore, the climate and vegetation are right natural requirements for livestock and poultry production. The people of the region predominantly rely on agriculture, with a sizable number of the economically active population engaged in livestock rearing, land farming and fishing. The region produces about 25% of the nation's cattle herd and a sizeable percentage of sheep and goats.

In the 1970s, the region had three major manufacturing industries; these were the Tomato Canning Factory at Pwalugu (recently revived), the Meat

Processing Factory at Zuarungu and the Rice Mill in Bolgatanga, both are defunct. Other two major non-manufacturing industries are the stone quarry at Pwalugu and granite and marble factory at Tongo which are in operation. On a smaller scale, the inhabitants undertake smock weaving, leatherwork, pottery, shea butter extraction and groundnut oil production.

The Upper East Region has a number of post basic educational establishments. These include one Polytechnic, three nursing training institutions, two teacher training institutions, 20 state-owned senior high schools and two public technical institutes (GES, 2007).

The choice of this region for the study is propelled by the fact that both illiteracy and poverty are high in the region as compared to other parts of the country. Available figures indicated by Roeske (2003) revealed that while the overall incidence of poverty declined from 52% to 40% at the national level, it increased from 67% to 88% in the Upper East. Additionally, the proportion of the total population that has never attended school is considerably higher for the Upper East (60.5%). But for the migration of the youth from the rural to the urban areas to engage in services of head porters and street hawkers, poverty levels in some of these rural areas could have been higher than what the statistics revealed.

Population for the Study

Population, according to Koul, (2002) refers to the complete set of individuals (subjects), objects or events having common observable characteristics in which the researcher is interested. The population for the study

comprised all the TVET teachers and second year students of the two technical institutes in the region (Bawku Technical Institute and the Bolgatanga Technical Institute). Table 1 presents the population for the study.

Table 1
The Population for the Study

Programme	Bawku Tech. Inst		Bolga Tech. Inst.		Total Population	
	Teachers	Students	Teachers	Students	Teachers	Students
Motor vehicle	6	28	6	38	12	66
Mechanical	4	22	6	24	10	46
Electricals	4	34	8	60	12	94
Plumbing	4	30	0	0	4	30
Blockwork	6	34	6	50	12	84
Carpentry	4	8	4	20	8	28
Painting	4	18	6	26	10	44
Fashion	4	16	8	34	12	50
Catering	0	0	6	40	6	40
Total	36	190	50	292	86	482

Note: only second year students' population.

Technical teachers were included in the study because they teach the trade or technical knowledge and skills to the students. As a result, they are very much abreast with issues and challenges confronting the technical institutes in programme delivery. The students are the beneficiaries of the knowledge and skills taught by the teachers; hence it is necessary to include their responses.

The first year students were excluded from the study because they were not involved in practical work at the workshops. The reason is that the new technical institutes' curriculum covered only theory lessons in the core subjects for the first year. The final (third) year students were feverishly preparing for their final examination and so it would have been difficult to locate. These reasons compelled the researcher to concentrate on the second year students since they were more stable to locate and had been involved practical training activities.

All the trade programme areas including entrepreneurship skills training teachers in the two technical institutes were considered as TVET teachers. However, the teachers who do not teach trade courses were excluded from the study. In all, the population consisted of 86 TVET teachers with 36 from the Bawku Technical Institute and 50 from the Bolgatanga Technical Institute as shown in Table 1. The population of second year students was 482 with 190 from the Bawku technical institute and 292 from the Bolgatanga technical institute.

Sample Size

A sample, according to Fink (1995), is a portion or subset of a larger group. It is a selection of one or more elements from a population. The importance of samples lies in the accuracy with which they represent or mirror the target population. Often limited resources make it unpractical to study a population and so the study of a sample becomes necessary.

The sample size for this study is 284, representing 50% of the target population of 568. This is made up of 18 teachers and 95 students selected from

the Bawku technical institute, and 25 teachers and 146 students sampled from the Bolgatanga technical institute. The reason for using 50% sample and the procedure for the selection are explained in the next section which deals with sampling technique.

Sampling Technique

Bordens and Abbott (1996) explained that sampling techniques are not mutually exclusive and could be combined to help ensure a representative of the population. Based on this, the simple random and purposive sampling techniques were employed to select the sample for this study.

According to Neuman (2000), one principle of sample sizes is that the smaller the population, the bigger the sampling ratio has to be for an accurate sample. Neuman further suggested that for a small population of less than 1000, a 20% sample or more ratio will do. On the other hand, larger population permits smaller sampling ratios. This is because as the population size increases the returns in accuracy for sample shrink. This sampling principle corroborates other writers including Rejcie and Morgan (1970), cited in Payne and Payne (2004). For this study, the total teacher population was 86 and the second year students' population was 482, each group being less than 1000. Therefore, 50% sample size, which is higher than 20% was considered to be appropriate.

For the selection of the actual sample, proportional, purposive and simple random techniques were used. The proportional selection was to ensure fair representation from the institutes and the two groups. The purposive sampling

was used to ensure inclusiveness from every programme offered by the institutes. It was also to ensure that only trade and entrepreneurship skill teachers are included. This was done with a view to provide equal chance for all members of the population using the table of random numbers.

Table 2

The sample size for the study

	Bawku Tech. Inst				Bolga Tech. Inst.				Total population			
	Teachers		Students		Teachers		Students		Teachers		Students	
	P	S	P	S	P	S	P	S	P	S	P	S
Motor vehicl	6	3	28	14	6	3	38	19	12	6	66	33
Mechanical	4	2	22	11	6	3	24	12	10	5	46	23
Electricals	4	2	34	17	8	4	60	30	12	6	94	47
Plumbing	4	2	30	15	0	0	0	0	4	2	30	15
Blockwork	6	3	34	17	6	3	50	25	12	6	84	42
Carpentry	4	2	8	4	4	2	20	10	8	4	28	14
Painting	4	2	18	9	6	3	26	13	10	5	44	22
Fashion	4	2	16	8	8	4	34	17	12	6	50	25
Catering	0	0	0	0	6	3	40	20	6	3	40	20
Total	36	18	190	95	50	25	292	146	86	43	482	241

Key: P = population, S = sample size

Based on Fink's (1995) assertion, the following steps were employed to select the following:

1. The lists of all the second year students by programmes and teachers teaching trade courses and entrepreneurship skills were obtained from the two technical institutes.
2. A table of random numbers was used to select the required sample from each category.

Data Collection Instrument

Questionnaire was the main instrument used for the collection of data for the study. Two similar sets of questionnaires were designed for the two main groups of respondents, namely the TVET teachers and the students (appendices A and B).

Each set of questionnaires was made up of six sections; Sections A to F. Section A sought for biographical data of the respondents. The rest of the sections comprised statements related to the research questions.

The questionnaire included closed-ended and open-ended items. Most of the close-ended items were based on the four point-Likert scale where respondents were expected to indicate the most appropriate responses to the items on a scale of preferences. The use of the four point-Likert scale, and not the five point scale, was based on the argument by Ary, Jacobs and Razavieh (1996) that respondents might be tempted to choose the “undecided” or the mid-point to avoid making a real positive or negative choice. For the four point Likert scale, the respondents were compelled to choose between agreement and disagreement for the items.

Pre-Testing

Pre-testing, according to Peers (1996), involves testing research instrument using populations as similar as possible to those involved in the research. The purpose is to check for anomalies and ambiguities in wording, lack of clarity of instructions and the internal consistency between parts of the questionnaire.

The pre-testing of the questionnaire was conducted with 24 respondents selected randomly from the Bawku Technical Institute. These respondents were not part of the actual sample of the study. A teacher from each of the eight departments or programmes of the institute was randomly selected. Two students were randomly selected from each of the eight departments of the institute. This summed up to sixteen second year students. Prior to the pre-testing, the questionnaires were given to specialists in question construction for their comments and suggestions for improvement.

The internal consistency reliability coefficient of the questionnaire was assessed using the statistical product for service solutions (SPSS) to calculate the coefficients of Crombach's Alpha (α). The value of the coefficient obtained was 0.7018 and this considered to be satisfactory.

Respondents were encouraged to make useful suggestions by submitting written comments on items with ambiguities. This exercise enabled the researcher to make corrections where necessary and clarified ambiguities that existed in the items, and to ensure that, the targeted respondents clearly understood the wording and information required from them. The pre testing also provided information on

time required to complete a set of questionnaire. In pursuant of these objectives, problematic items were excluded from the questionnaire.

Data Collection Procedure

One person assisted the researcher in the data collection process. The assistant was given training to ensure successful administration of the questionnaire. Specifically, he assisted in the distribution and collection of the completed questionnaire. The researcher was already familiar with the study area and the institutions. However, the researcher visited the two technical institutes prior to the administration of the questionnaire to seek formal permission from the Principals of the two institutes to use both staff and students for the study. This was done with an introductory letter from the VOTEC Department of the University of Cape Coast.

At each institute, the researcher interacted with both the teachers and students expected to participate in the study. The purpose of the study was explained to the respondents before the distribution of the questionnaires. Some students who sought for explanation on some statements were given the necessary attention. The completed questionnaires were returned the same day, as such, there was a hundred percent return of the questionnaires from both the students and the teachers.

Data Analysis

The data gathered were organized for the purpose of answering the research questions in the study. Descriptive statistical analysis techniques were used. These included percentages and frequencies. To facilitate the interpretation

of data, tables were used to support the analysis. Responses to the various items were coded and tabulated. The responses for the 4-point Likert scale were assigned numerical values as follows: strongly agree (4), agree (3), disagree (2), and strongly disagree (1) or very true (4), true (3), untrue (2) and very untrue (1). Additionally, the weighted mean responses of some of the items were computed. Weighted mean values above 2.50 were considered as high and values below 2.5 as low

To make interpretation easier, the “strongly agree” and “agree” responses were combined to indicate agreement whiles the “disagree” and “strongly disagree” responses were also put together to indicate disagreement. Similarly the “very true” and “true” responses were combined whiles the “untrue” and “very untrue” responses were also put together to indicate acceptance and non-acceptance respectively.

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter is organized into six sections to provide relevant information on the respondents and to answer the five research questions of the study. These are Biographical information, Conditions Promoting Practical Skills Acquisition by Students, factors affecting youth participation in technical programmes, perceived benefits of technical institute programmes and enrolments, implementation of entrepreneurship skills training in technical institutes and the nature of the industrial attachment programme in the technical institutes.

Biographical Information

The study involved 284 respondents made up of 43 TVET teachers and 241 second year students drawn from the Bawku and Bolgatanga technical institutes in the Upper East Region. The biographical information reported on the respondents includes gender, professional status, institutions of respondents and courses offered by the student respondents. Details of frequencies and percentages are presented in Tables 3 and 4.

Qualification of Teachers and Gender

The teachers used in the study were all TVET teachers. Table 3 indicates that there 34 male respondents, representing 79% of the sample and nine or 21%

were female teacher respondents. The small number of female respondents is the result of the low participation of females in the technical institute programmes. The few female respondents happened to be teaching catering (3) and fashion designing (6).

Table 3
Teacher respondents by qualification, institution and gender

Qualification	Bawku Tech.			Bolga Tech.			Total sample			
	M	F	T	M	F	T	M	F	T	%
Master's degree	1	0	1	0	0	0	1	0	1	2
Bachelor's degree	1	1	2	6	1	7	7	2	9	21
Diploma	3	0	3	3	1	4	6	1	7	16
Technician	5	0	5	7	0	7	12	0	12	28
Advanced craft	3	4	7	5	2	7	8	6	14	33
Total	13	5	18	21	4	25	34	9	43	100

Source: Field data

Table 3 further shows the academic qualifications of the teacher respondents. It was found that 23% of the teachers were degree holders, 16% diploma holders, 28% technician certificate holders and 33% advanced craft certificate holders. The qualifications of the teachers presume that they have the required technical qualifications to teach the desired practical skills to students. Additionally, the educational background of the teachers suggests a positive impact on the responses towards achieving a successful study of the challenges

confronting practical skills training at the technical institutes in the Upper East Region.

Table 4 shows the sex and professional status of the teachers who responded to the questionnaires. These respondents are organised according to the institutes under study.

Table 4
Teacher Respondents by Professional Status and Gender

Qualification	Bawku Tech			Bolga Tech.			Total sample			%
	M	F	T	M	F	T	M	F	T	
Professional	9	3	12	14	3	17	23	6	29	67
Non-professional	4	2	6	7	1	8	11	3	14	33
Total	13	5	18	21	4	25	34	9	43	100

It is noticed that a majority of the teacher respondents, (67%) were professionally trained. The results imply that the teachers have adequate knowledge of methodology for teaching practical skills in the course areas and issues concerning technical education. The high level of professional status of the teacher respondents is likely to contribute to good practical skills teaching.

Gender Distribution of Students by Programme and Institute

Table 5 presents the information on the breakdown of the number of student respondents drawn from each of the two technical institutes by

programmes. The respondents were drawn from a total of nine programmes offered at the two technical institutes in the study.

Table 5
Student Respondents by Gender, Programme and Institute

Programme	Bawku Tech.			Bolga Tech.			Total sample			
	M	F	T	M	F	T	M	F	T	%
Motor vehicle	14	0	14	17	2	19	31	2	33	14
Mechanicals	11	0	11	11	1	12	22	1	23	10
Electricals	15	2	17	23	7	30	38	9	47	20
Plumbing	10	5	15	0	0	0	10	5	15	6
Blocklaying	17	0	17	25	0	25	42	0	42	17
Carpentry	4	0	4	10	0	10	14	0	14	6
Painting	4	5	9	6	7	13	10	12	22	9
Fashion	0	8	8	0	17	17	0	25	25	10
Catering	0	0	0	0	20	20	0	20	20	8
Total	75	20	95	92	54	146	167	74	241	100

Table 5 shows differences in the samples for the programmes. The inequality in the number of respondents in the programmes is due to the fact that some courses have large enrolments (example, electrical) than others. Additionally, only Bawku Technical Institute runs a programme in Plumbing craft while only Bolgatanga Technical Institute runs a programme in catering.

Table 5 indicates that the male student respondents (167 or 69%) involved in technical and vocational education in the Upper East Region was higher than

the female student respondents (74 or 31%). The small number of the females is due to their enrolment mostly in the two vocational programmes; namely, fashion designing and catering. This situation makes the female students enrolments in most of the technical programmes quite lower.

Research Question 1: To what extent do conditions in the two technical institutes promote or contribute to students' skill acquisition?

Table 6 provides the results of the teachers' responses to the nine items in the questionnaire that related to skill acquisition by students in the technical institutes. On the issue of students using the requisite drawing equipment during lessons that have drawing component, majority of the respondents (67%). The implication is that the non usage of drawing equipment will have a negative effect on the acquisition of practical knowledge and skills, since technical drawing is basic to all practical skill training.

In response to the issue of teachers handling practical lessons demonstrate the requisite skills during lesson, majority of the respondents (70%) agreed with the statement. On the issue of teachers supplied with adequate training materials by the institute, majority (74%) of the respondents disagreed. In response to the issue of adequate workshops for practical training, majority (79%) of the respondents agreed with the statement,

Table 6**Teachers' Response to Conditions Promoting Practical Training**

S/N	STATEMENT	SA Agreement	A	DA Disagreement	SDA
1	Most students use the requisite drawing equipment during drawing lessons	4	10	23	6
		(14 = 33%)		(29 = 67%)	
2	Teachers demonstrate requisite skills during practical lessons	15	15	7	6
		(30 = 70%)		(13 = 30%)	
3	Teachers are supplied with adequate training materials	8	3	17	15
		(11 = 26%)		(32 = 74%)	
4	There are adequate workshops for practical training	17	17	6	3
		(34 = 79%)		(9 = 21%)	
5	There is adequate supply of basic hand tool for training	4	13	12	14
		(17 = 40%)		(26 = 60%)	
6	Teachers spend most of the practical periods with students	16	12	3	12
		(28 = 65%)		(15 = 35%)	
7	The period allotted for practical lessons are adequate	11	15	10	7
		(26 = 61%)		(17 = 39%)	
8	All students practice the requisite skills during practical lessons	6	5	11	21
		(11 = 26%)		(32 = 74%)	
9	Parents pay material fee for procurement of additional training materials	16	13	10	4
		(29 = 67%)		(14 = 33%)	

Key: SA= Strongly Agree, A= Agree, DA = Disagree, SDA = Strongly Disagree
(Agreement = SA + A), (disagreement = DA+SDA)

On the question of adequate supply of basic hand tools for practical training, majority of respondents (60%) disagreed with the statement. An examination of the responses, reported above, indicated that most teachers disagreed that teaching and learning materials supplied to both teachers and students were adequate. These educational resources, when inadequately supplied, could give room to focus more on theoretical teaching and hence likely to contribute to lack of proficiency in practical skills acquisition.

In response to the issue of teachers spending most of the practical period with students, majority of the respondents (65%), agreed to the statement. On the statement of adequacy of periods allotted for practical lessons, majority of the respondents (61%) agreed with the statement.

On the question of all students getting the opportunity to practice the requisite skills during practical lessons, majority of the respondents (74%) disagreed with the statement. This implies that most students do not get enough time to demonstrate their skills during practical lessons. This could be due to large class sizes not matching with the supply and provision of resources. In the case of parents made to pay material fee for the procurement of additional training materials, majority of the respondents (68%) agreed with the statement.

In answering research question one, vis-à-vis the analysis of the responses, the main findings were that the provision of workshops in the various departments was fairly good. Time allotted for practical lessons was also adequate. Generally there was a short supply of training materials and basic tools by the institute which affected the teaching of practical skills in the two technical institutes. It

was also found that most respondents agreed parents provided additional training materials but this was not adequate to meet the training needs of the trainees. Since technical institutes mostly rely on materials and tools for training, their short supply would negatively affect practical skills acquisition.

Table 7 shows students' responses to the items relating to promoting skills training. In all, 241 students responded to the items.

In response to the issue of most students using the requisite drawing equipment during lessons that have drawing component, majority of the respondents (58%) agreed with the statement. Similarly, in response to the issue of teachers handling practical lessons demonstrate the requisite skills during lesson, majority of the respondents (77%) agreed with the statement. In the case of students supplied with adequate training materials by the institute, majority of the respondents (64%) disagreed with the statement.

In response to the issue of adequate workshops for practical training, the majority of the respondents (54%) agreed with the statement. In response to the issue of adequate supply of basic hand tools for practical training, the majority of respondents (54%) disagreed with the statement. This corroborates the response of the teachers on the same issue.

Table 7**Students' Response to Conditions Promoting Students' Practical Skills****Training**

S/N	Conditions promoting practical training	SA Agreement	A	DA	SDA Disagreement
1	Most students use the requisite drawing equipment during drawing lessons	40	100	63	38
		(140=58%)		(101 = 42%)	
2	Teachers demonstrate requisite skills during practical lessons	151	34	31	25
		(185= 77%)		(56 = 23%)	
3	Students are supplied with adequate training materials	52	34	74	81
		(86 = 38%)		(155 = 64%)	
4	There are adequate workshops for practical training	68	62	54	57
		(130 =54%)		(111= 46%)	
5	There is adequate supply of basic hand tool for training	63	47	72	59
		(110=46%)		(131 = 54%)	
6	Teachers spend most of the practical periods with students	82	58	51	60
		(140= 58%)		(101 = 42%)	
7	The period allotted for practical lessons are adequate	68	90	52	31
		(158=66%)		(83 = 34)	
8	All students practice the requisite skills during practical lessons	54	66	51	80
		(110 =46%)		(131 = 54%)	
9	Parents pay material fee for procurement of additional training materials	72	98	33	38
		(170=70 %)		(71 = 30%)	

Key: SA= Strongly Agree, A= Agree, DA = Disagree, SDA = Strongly Disagree
(Agreement = SA + A), (Disagreement = DA+SDA)

On the statement of teachers spending most of the practical period with students, as many as 58% respondents agreed with the statement. Similarly, in the case of the periods allotted for practical lessons are adequate, majority of the respondents (66%) agreed with the statement. The students' responses clearly indicated that all was not well for the two technical institutes in terms of supply of training materials and tools.

In the case of all students get the opportunity to practice the requisite skills during practical lessons, majority of the respondents (54%) disagreed with the statement. This might be due to large class size coupled with inadequate supply of facilities. Similarly, on the question of parents made to pay material fee for the procurement of additional training materials, majority of the respondents (71%) agreed with the statement.

From the above results, the conditions that promote the teaching and the acquisition of practical skills in the Bawku and Bolgatanga Technical Institutes were not encouraging. The results from the students indicated the lack of training resources and irregular supply of training materials even though parents supplemented government's efforts by contributing to the purchase of materials. This confirmed Grierson's (1997) point that lack of educational resources at technical institutes will relegate practical skills training to mere theoretical work. If this anomaly is not corrected, it could lead to technical institute graduates not being able to demonstrate practical skills which are important aspects of technical education. Unfortunately the teaching and mastery of practical skills will not be justified if training institutions continue to be supplied with inadequate training

materials. This unfortunate situation was evident from the responses of both teachers and students.

Lauglo's (2004) study on practical skills acquisition also attested that when practical training is supplied with inadequate training materials, the teaching of practical skills are more likely to end up being reduced to 'theory teaching.' Generally, there appears to be no glaring difference in teachers and students' responses to most of the items relating to the conditions that promote students' acquisition of practical skills. The only slight difference relates to the statement "students use the requisite drawing equipment during drawing lessons." While students said they use the requisite drawing equipment during drawing lessons, teachers said students did not. Since the teachers were more experienced, and better know what constitute requisite equipment for drawing, the researcher shared their view.

Research Question 2: What factors affect the participation of the youth in technical programmes of the two technical institutes?

The second research question in the study aimed at collecting data to identify the factors which affect the participation of the youth in the Upper East Region in the technical institutes' programmes. This section analyses the responses of the teachers and that of the students to the items in Section D of the questionnaire, which relate to the research question.

Table 8**Teachers' Response to Factors Affecting the Participation of the Youth in Technical Programmes**

S/N	Description	SA	A	DA	SDA
		Agreement		Disagreement	
1	The teaching of Pre-technical skills discourage entry into technical institutes	15	15	10	3
		(30=70%)		(13=30%)	
2	Teachers discourage JHS students from attending technical institutes	12	14	12	5
		(26=60%)		(17=40%)	
3	Students with aggregate 30 and above are admitted into technical institutes	2	12	16	13
		(14=33%)		(29= 67%)	
	Many students wishing to enter technical institutes do not have the required grade	13	16	12	2
		(29=67%)		(14=32%)	
5	Students generally perform poorly in the final technical examinations	12	14	12	5
		(26=60%)		(17=40%)	
6	Most technical students are not academically good	5	11	12	15
		(16=37%)		(27=63%)	
7	Technical courses are suitable for the academically weak	10	6	12	15
		(16=37%)		(27=63%)	
8	People with good BECE grades prefer going to secondary school	13	15	3	12
		(28= 65%)		(15=35%)	

Table 8 continued

9	Technical programmes are too 'theoretical'	6	12	22	3
				(18=42%)	(25=58%)
10	Technical subjects do not lead to good economic prospects		8	12	8
				(23=53%)	(20=47%)
11	Technical training is not attractive to the society	14	14	13	2
				(28= 65%)	(15=35%)
12	Technical programmes are relevant to the needs of the community	6	16	14	7
				(22=51%)	(21=49%)
13	Technical training does not provide easy transition to effective work.	6	16	13	8
				(22=51%)	(21=49%)
14	Students are not given enough guidance on the value of TVET	13	13	6	8
				(27=63%)	(16=27%)
15	It is expensive to pursue a programme in a technical institutes	12	14	9	8
				(26=60%)	(17=40%)
16	Technical institute graduates have direct admission onto the HND programmes	7	8	14	14
				(15=35%)	(28= 65%)

Source: Field data

Key: SA= Strongly Agree, A= Agree, DA = Disagree, SDA = Strongly Disagree
(Agreement = SA + A), (Disagreement = DA+SDA)

Table 8 presents the responses given by teacher respondents on factors affecting youth participation in technical programmes. On the issue of teaching of Pre-technical skills discourages entry into technical institutes, majority of respondents (67%) agreed with the statement. The responses of the attitude of

teachers towards the teaching of pre-technical skills at the basic level call for comments. The implication was that the teaching of pre technical skills at the Basic level was perceived to be discouraging the entry of Junior High School (JHS) graduates into technical institutes. On the statement of teachers discouraging JHS students from attending technical institutes, majority of the respondents (61%) agreed with the statement.

On the issue of many students not having the requisite entry grade to enter technical institutes, majority of the respondents (67%) agreed with the statement. The opinion of the respondents confirms Boe-Ocansey's (1995) comment that many people consider the technical schools as learning centres reserved for the less gifted pupils and therefore a small percentage of the youth entered such institutes.

On the issue of students poor perform in the final technical examinations, majority of the respondents (60%) agreed to the statement. In response to the issue of most technical students are not academically good, most of the respondents (63%) disagreed with the statement.

Similarly, in response to the issue of technical courses are suitable for the academically weak, there was a majority disagreement on the statement (62.8%). In reaction to the issue of people with good BECE grades opting to go to senior high school, a majority (65%) agreed with the statement.

In the case of technical programmes being too 'theoretical', majority of the respondents (58%) disagreed with the statement. In reaction to the issue of technical subjects not leading to good economic prospects, majority of the

respondents (54%) agreed with the statement. On the question of technical training not attractive to the society, a majority of respondents (65%) agreed with the statement. In response to the issue of relevance of technical programmes to the needs of the community, most of the respondents (51%) agreed with the statement.

On the issue of technical training not providing easy transition to effective work, many of the respondents (51%) agreed with the statement. This response tends to agree with the African Union report (2007) which mentioned that the ultimate aim of technical training is employment, but TVET programmes have weak link with the job market. On the question of students not given enough guidance on the value of TVET, most respondents (63%) agreed with the statement. Similarly, majority of the respondents (60%) agreed with the statement it is expensive to pursue a programme in technical institutes. On the question of technical institute graduates given direct admission onto the Polytechnic HND programmes, only a small minority disagreed with the statement. The majority respondents (65%) indicated agreement.

In analysing the data in Table 8, it was found that even though the entry grade to the technical institutes are the same as to other second cycle schools, some students do not still want to pursue technical programmes. It was also noticed from teachers' responses that the two institutes had records of poor students' performance in final examination and this poor performance could contribute negatively to academic progression of technical institute graduate to the polytechnic and other similar institutions of learning. It was also found that,

even though technical programmes are relevant to the needs of community, there is little guidance services provided to technical students. It can be observed that the low participation of the youth in technical programmes is due to uncertainty about the future of technical graduates.

Table 9 shows the responses given by student respondents on factors affecting youth participation in technical programmes. In the case of the teaching of Pre-technical skills discourages entry into technical institutes, majority of the respondents agreed (59%) with the statement. This agreement is in line with the view of the teacher respondents on the matter. In response to the issue of teachers discouraging JHS students from attending technical institutes, most the respondents (66%) agreed with the statement. In the case of students who wish to enter technical institutes but not having the requisite entry grade, majority of the respondents (53%) agreed with the statement.

In response to the issue of students generally performing poorly in the final technical examinations, majority of respondents (62%) agreed with the statement. In the same vein, majority of the respondents (64%) agreed with the issue of most technical students not being academically good. In reaction to the issue of technical courses suitable for the academically weak, most respondents disagreed.

Table 9**Students' response to Factors affecting the Participation of the Youth in Technical Programmes**

S/N	Description	SA	A	DA	SDA
		Agreement		Disagreement	
1	The teaching of Pre-technical skills discourage entry into technical institutes	81	60	53	47
		(141= 59 %)		(100 = 41%)	
2	Teachers discourage JHS students from attending technical institutes	62	98	36	45
		(160=66%)		(81 = 33%)	
3	Students with aggregate 30 and above are admitted into technical institutes	27	23	92	99
		(50 = 21%)		(191 = 80%)	
4	Many students wishing to enter technical institutes do not have the required grade	45	82	71	43
		(127 = 53%)		(114 = 47%)	
5	Students generally perform poorly in the final technical examinations	87	63	56	35
		(150 = 62%)		(91 = 38%)	
6	Most technical students are not academically good	88	65	39	49
		(153 = 64%)		(88 = 26%)	
7	Technical courses are suitable for the academically weak	61	32	68	80
		(93 = 39 %)		(148 = 61%)	
8	People with good BECE grades prefer going to senior high school	78	82	41	40
		(160 = 66%)		(81 = 34%)	
9	Technical programmes are too 'theoretical'	53	77	88	23
		(130 = 54%)		(111 = 46%)	

Table 9 continued

10	Technical subjects do not lead to good economic prospects	52 (137= 57%)	85	61 (104 = 43%)	43
11	Technical training is not attractive to the society	61 (136 = 56%)	75	55 (105 = 44%)	50
12	Technical programmes are relevant to the needs of the community	83 (142 = 59%)	59	66 (99 = 41%)	33
13	Technical training does not provide easy transition to effective work.	59 (123 = 51%)	64	51 (118 = 49%)	67
14	Students are not given enough guidance on the value of TVET	93 (179 = 74%)	86	51 (62 = 26%)	11
15	It is expensive to pursue a programme in a technical institutes	73 (162 = 79%)	89	51 (79 = 21%)	28
16	Technical institute graduates have direct admission onto the HND programmes	83 (185 = 77%)	102	26 (56 = 23%)	30

Source: Field data

Key: SA= Strongly Agree, A= Agree, DA = Disagree, SDA = Strongly Disagree
(Agreement = SA + A), (Disagreement = DA+SDA)

In reaction to the issue of people with good BECE grades preferring secondary school, (66%) respondents agreed with the statement. On the issue of technical programmes being too 'theoretical', most of the respondents (54%) agreed with the statement. In reaction to the issue of technical subjects not leading to good economic prospects, most of the respondents (56%) agreed with the statement.

For the responses on the statement that technical training is not attractive to the society, 56% of the respondents agreed with the statement. In response to the statement technical programmes are relevant to the needs of the community, majority of the respondents (59%) agreed to the statement.

In response to the issue of technical training not providing easy transition to effective work, majority of the respondents (51%) agreed with the statement. In reaction to the issue of students not given enough guidance on the value of TVET” most of the respondents (74%) agreed. Similarly, in reaction to the issue of technical institute programme being expensive to pursue, most of the respondents (79%) agreed with the statement. On the issue that technical institute graduates be given direct admission onto the Polytechnic HND programmes, majority (77%) of the respondents agreed.

In analyzing the responses from students on factors affecting the participation of the youth in technical programmes, it was realized that the low patronage of TVET programmes was due to inadequate attention given to TVET issue by stakeholders, policy planners and implementers. This inadequacy covers the provision of facilities and the enabling environment for effective teaching and learning. This finding was also confirmed by Lauglo’s (2005) who argued that TVET programmes are under subscribed by new entrants because they are undervalued by students from all backgrounds. According to Castro (2003), a survey conducted in selected technical institutes in Ghana and Kenya revealed that the under patronage of TVET schools has much to do with the presence of an

academic ethos which devalues the TVET subjects to the point where they are not taken seriously.

Research Question 3: How do the perceived benefits of technical institute programmes affect enrolment in the two technical institutes in the region?

The frequencies and percentages of the responses of teachers on perceived benefits of technical institute programmes enrolments are presented in Table 10

On the issue of technical training being superior in improving the productivity of labour, most of the respondents (58%) answered as true. This opinion of the respondents indicated that technical training is superior in improving the productivity of labour. It is in the light of this belief that the commonwealth report (2000) pointed out that technical programmes prepare participants to engage in productive work. This suggests an investment option for countries seeking to engage its youth in a more productive work.

In the same vein, most respondents answered as true to the issue that technical institute have served as a path to subsequent vocational training at the higher level, most respondents (77%) answered as untrue. The opinion of the majority is that technical institutes have not served as a path for subsequent vocational training at the higher level. This is true against the background that many technical graduates who could not obtain the West African senior secondary school certificate only end up pursuing technician and advanced craft courses, with little chance of pursuing degree programmes.

Table 10**Teachers' Response on How The Perceived Benefits of Technical Institute Programmes affect Enrolment in the Two Technical Institutes in the Region**

S/N	Description	V/True True	True	Untrue Untrue	V/Ut
1	Technical training is superior in improving productivity	12 (25 = 58%)	13	12 (18 = 42%)	6
2	Technical institutes is a path to higher vocational training	15 (10 = 23%)	18	2 (33 = 77%)	8
3	Technical graduates are inadequately paid as teachers	13 (26 = 61)	13	11 (17 = 39%)	6
4	The Technical programmes suitable to community	6 (23 = 54%)	17	10 (20 = 46%)	10
5	Most educated people send their wards to technical institutes	6 (13 = 30%)	7	15 (30 = 70%)	15
6	Bad educational policies is a neglect of technical education	13 (28 = 65%)	15	12 (15 = 35%)	3
7	The low image of technical education is a colonial legacy	13 (27 = 63%)	14	12 (16 = 37%)	2

Source: Field data

Key: Number of respondents [N] = 43, V/True

=Very True, V/UN =Very Untrue V/True +True = True, Untrue +V/UT = Untrue

On the statement of technical graduates not adequately paid at the job market, many respondents (61%) answered as true. The opinion of the majority of

the respondents is probably the reason why many qualified technical personnel do not want to teach. This finding is strengthened by Kitaev's (2003) assertion that inadequate remuneration of qualified, competent and experienced teachers in some technical institutions has contributed to the low social status of TVET.

In the case of the issue of the technical programmes suitable to the needs of the community, many of the respondents (54%) answered true to the statement. Miller (1987) reiterated that vocational and technical education has very little, if any, value to the individual, the community, or to the economy unless the skills that are learnt enable people to get and hold jobs. He suggested that learners must be able and willing to perform services and produce to meet demand in the labour market.

On the statement that most educated people do not send their children to technical institutes, most respondents (65%) answered true. This implied that most educated do not send their children to technical institutes. This opinion of the respondents is supported by the literature. Hoffmann-Barthes, Nair and Malpede (2005) argued that it is the poor parents or parents of pupils who fail to get admission into the traditional secondary schools who get enrolled in TVET institutions at the post basic level.

In response to the issue that bad educational policy planning has caused neglect to technical education, majority of the respondents (65%) answered as true. This view of the respondents agrees with the findings reported by others, such as Psacharopoulos and Loxley (1985) who identified that most education systems in Africa have strong bias toward the traditional literary and academic

subjects. This is explicitly mentioned in the Anamuah-Mensah educational report (GoG, 2002) that the technical and vocational sector is the most neglected in the educational sector.

On the statement that low image of technical education is a colonial legacy, majority of the respondents said true (63%) to the statement. However, Sifuna and Shiundu's (1988) stated that in the colonial days of black Africa, blacks were denied general education and were restricted to rustic and industrial manual education (vocational and lower-level technical education) for service to the white settlers. Sifuna and Shiundu add that the image of vocational and technical education has not yet recovered from such a stained image. By the responses, it could mean that technical education is gradually redeeming its image.

From the analysis, it was found that there was a negative perception of TVET programmes towards socio-economic development hence the low patronage. This finding had been echoed by several authors including Oketch (2005) and Castro (2003) who argued that TVET programmes are not attractive to students. They stated that the declining participation is particularly due to public negative attitude towards TVET programme.

Table 11**Students' Response on Perception of Students on Socio Economic Benefits of Technical Institutes**

S/N	Description	V/True True	True	Untrue Untrue	V/Ut
1	Technical training is superior in improving productivity	67 (157 = 65%)	90	52 (84 = 35 %)	32
2	Technical institutes is a path to higher vocational training	95 (57 = 24%)	89	41 (184 = 76%)	16
3	Technical graduates are inadequately paid as teachers	87 (160 = 66%)	73	51 (81 = 34%)	30
4	The Technical programmes suitable to community	52 (131 = 54%)	79	61 (110 = 46%)	49
5	Most educated people send their wards to technical institutes	41 (83 = 34%)	42	68 (158 = 66%)	90
6	Bad educational policies is a neglect of technical education	81 (170 = 71%)	89	33 (71 = 29%)	38
7	The low image of technical education is a colonial legacy	75 (166 = 69%)	91	36 (75 = 31%)	39

Source: Field data

Key: Number of respondents [N] = 43, V/True =Very True, V/UN =Very Untrue
V/True +True = True, Untrue +V/UT = Untrue

As indicated in Table 11, majority of the respondents (65%) answered as true to the issue of technical training been superior in promoting productivity in the labour market. On the issue that technical institutes have served as a path to subsequent vocational training at higher level, a good number of the respondents (76%) answered true. In response to the issue that most technical graduates are inadequately paid at the job market, the largest part of the respondent (66%) answered true. In response to the issue that the technical programmes offered are suitable to the needs of the community, a large number of the respondents (54%) answered true to the statement, In answer to the issue of most educated people sending their children to technical institutes, majority of the respondents (66%) answered untrue.

In response to the statement that bad educational policies have caused a neglect of technical education, most of the respondents (71%) answered true. In response to the statement that the low image of technical education is a colonial legacy, a large number of respondents (69%) answered true to the statement.

The finding, as reflected in the students' responses to the research question, is that people who are educated prefer to send their children to the traditional secondary schools as a first choice. This is so because technical institutes are not seen to have many pathways in academic progression. This conclusion is supported by Lauglo's (2005) research on TVET in the early 1980s when he concluded that "if technical courses in second-cycle schools can appear to be a means of hedging one's bets on further academic education for students, there will be no shortage of applicants."

It can be concluded that even though technical institutes do not have many pathways for academic progression, it plays an important role in the nation's economic development. This conclusion is supported by Ayim (1998) who argued that TVET has an important role to play in the socio-economic development of this country, particularly in the area of provision of goods and services.

Research Question 4: To what extent is entrepreneurship education given attention in the programmes of the technical institute?

The study sought to find out how the newly introduced course in entrepreneurship skills training is being implemented in the two technical institutes. Four items in section F of the questionnaire were used to gather information. Table 12 presents the responses, weighted responses and the mean responses to the items by the teachers.

In Table 12, the responses, weighted responses and the mean responses in the table were below 2.50, indicating that there was generally low implementation of the entrepreneurship skills training in the two technical institutes. The results show that teachers were not adequate to promote effective teaching and learning of the subject. Consequently, the students did not derive benefit from the inclusion of entrepreneurship skills training.

Table 12

Teachers' Perception on the Implementation of Entrepreneurship Skills Training (EST) in Technical Institutes

Description of implementation of EST	Responses (r)								MR
	4		3		2		1		
	N	x	n	X	n	x	n	x	
1 How is the teaching and learning of EST?	0	0	0	0	3	6	40	40	1.1
2 Adequacy of entrepreneurship education teachers	5	20	8	24	24	48	6	6	2.3
3 Students knowledgeable enough to set up own business after completion	1	4	1	3	2	4	39	39	1.2
4 Are there enough entrepreneurship textbooks	0	0	1	3	15	30	27	27	1.2

Key: 4= very serious/very adequate/ very sure/ very well

3= serious/adequate/sure/well

(x) = weighted response,

2= somewhat/not adequate

T= total responses (43)

1= not at all/not sure

MR= mean response

n= number of respondents

MR > 2.50 indicate high implementation

MR < 2.50 indicate low implementation

$$x = \frac{\sum x r}{n}$$

$$MR = \frac{\text{total of } (x)}{n}$$

This finding agrees with suggestion by Haftendorn and Salzano (2003), who pointed out that by not learning entrepreneurship education, students will lack the knowledge in the changes taking place in their locality and will not be encouraged to consider self-employment as a career choice. With this development in the two technical institutes, graduates will be denied the opportunity to acquire the expected supplementary knowledge provided by EST to young people receiving TVET.

Table 13 also presents the responses of student responses. From Table 13, it was evident that the mean responses were all below the average of 2.50. The students' view corroborates that of the teachers. It result clearly indicates the low implementation of the subject.

This finding agrees with suggestion by Haftendorn and Salzano (2003), who pointed out that by not learning entrepreneurship education, students will lack the knowledge in the changes taking place in their locality and will not be encouraged to consider self-employment as a career choice. With this development in the two technical institutes, graduates will be denied the opportunity to acquire the expected supplementary knowledge provided by EST to young people receiving TVET.

Table 13

Students' Perception on the Implementation of Entrepreneurship Skills Training (EST) in Technical Institutes

Description of implementation of EST	Responses (r)								MR
	4		3		2		1		
	N	X	n	X	n	x	N	x	
1 How is the teaching and learning of EST?	1	4	2	6	6	12	232	232	1.1
2 Adequacy of entrepreneurship education teachers	7	28	11	22	52	104	171	171	1.3
3 Students knowledgeable enough to set up own business after completion	9	36	16	48	21	42	195	195	1.3
4 Are there enough entrepreneurship textbooks	0	0	0	0	18	36	223	223	1.2

Key: 4= very serious/very adequate/ very sure/ very well

3= serious/adequate/sure/well

(x) = weighted response,

2= somewhat/not adequate

T= total responses (43)

1= not at all/not sure

MR= mean response

n= number of respondents

MR> 2.50 indicate high implementation

MR< 2.50 indicate low implementation

$$x = \frac{\sum x r}{n}$$

$$MR = \frac{\text{total of } (x)}{N}$$

Research Question 5: What is the nature of the industrial attachment programme in the two technical institutes in the region?

Research question five was asked, to find out the nature of industrial attachment programme in the two technical institutes. Responses to the items in Section C of the questionnaire were used to answer the question. Results of the analysis on the nature of industrial attachment programme in the two technical institutes are presented in Tables 14 and 15 for teachers and students respectively.

Table 14 shows teachers' responses to the items relating to the description of attachment programme in their institutes.

In response to the issue that students embark on industrial attachment during holidays, majority of the respondents (70%) responded as not true. On issue of students not educated on industrial attachment, majority of the respondents (72%) responded as true. The inference is that students do not know much about the need and benefit to embark on industrial attachment training.

On the statement that industrial attachment is compulsory for technical students, a large number of respondents (81%) responded it was false. The implication is that industrial attachment programme is not compulsory in the two technical institutes in the Upper East Region.

Table 14**Teachers' Responses Describing Industrial Attachment Programme.**

S/N	Description	True	%	False	%	Total
1	Students embark on industrial attachment during holidays	13	30	30	70	43
2	Students are not educated on industrial attachment	31	72	12	28	43
3	Industrial attachment is compulsory for technical students	8	19	35	81	43
4	The technical institute plays a major role in industrial placement	13	30	30	70	43
5	Students easily get employment after industrial attachment	15	35	28	65	43
6	Technical teachers undertake compulsory industrial attachment	11	26	32	75	43

In reaction to the statement that the technical institute plays a major role in industrial placement, majority of the respondents (70%) said it was false. Similarly, a majority (65%) of the respondents said students do not easily get employment after industrial attachment. While reacting to the statement that technical teachers undertake compulsory industrial attachment, large number of respondents (75%) did not agree with the statement.

The data in Table 14 suggest the teachers' discontent concerning the nature of industrial attachment programme in the technical institutes as most of

them indicated negative responses. The findings tend to agree with the observation by Roeske (2003) that, notwithstanding the important role industrial attachment plays in instilling into trainees the practical skills, know-how and understanding necessary for employment in a particular occupation or trade, many formal training have shown little or no interest in encouraging technical trainees to undertake such attachments.

The implication here is that the two technical institutes in the upper east region have not given serious attention to issues concerning industrial attachment. If this situation continues, trainees are likely to enter into the labour-market with little or no practical learning experiences which are relevant to the world of work or as a foundation for entry into further education and training for specific occupations.

As reported in Table 15 most of the respondents (67%) said it was untrue that students embark on industrial attachment during holidays. In another development, a large number of respondents (62%) said that students are not educated on industrial attachment. In response to the statement that industrial attachment is compulsory for technical students, as high as 61% of the respondents said it was false.

On the issue of whether the technical institute plays a major role in industrial attachment placement, majority respondents (66%) said it was false. Similarly, responses on the statement that students easily get employment after industrial attachment indicated a majority (73%) response of false. In the case of

the statement that technical teachers undertake compulsory industrial attachment, majority of the respondents (65%) responded as true.

Table 15

Students' perception of industrial attachment programme in the technical institutes

S/N	Description	True	%	False	%	Total
1	Students embark on industrial attachment during holidays	80	34	161	67	241
2	Students are not educated on industrial attachment	150	62	91	38	241
3	Industrial attachment is compulsory for technical students	96	40	145	60	241
4	The technical institute plays a major role in industrial placement	81	34	160	66	241
5	Students easily get employment after industrial attachment	65	27	176	73	241
6	Technical teachers undertake compulsory industrial attachment	156	65	85	35	241

Source: field data

Total number of students, (N) =241

The analysis of the students' responses in Table 15 shows that students have little knowledge about industrial attachment and as such do not undertake industrial training during their training period. The students' responses also corroborate teachers' perception about the nature of industrial attachment

programme in the technical institutes. The lack of attachment could deny the students of the learning experiences relevant to the world of work. The inference is that the two technical institutes have little regard for the industrial attachment programme and so students lack education on the importance of industrial attachment.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In this chapter, the summary, conclusions and recommendations drawn from the findings are presented. The purpose of the study was to find out the challenges in the teaching of practical skills in the Bawku and the Bolgatanga Technical Institutes in the Upper East Region of Ghana. The study was directed by six research questions. The descriptive survey was used for the study. A sample size of 284 was used for this study. This number represented 50% of the target population of 568. The sample, randomly selected, was made up of 18 teachers and 95 second year students from Bawku Technical Institute; and 25 teachers and 146 second year students from Bolgatanga Technical Institute.

Two similar sets of questionnaire were used as the research instruments for the data collection; one for the teachers and the other for the students.

Main Findings

There was generally a short supply of training materials and basic hand tools for skill training in the two technical institutes in the Upper East Region. However, the provision of workshops in the various departments was fairly good; and the time allotted for practical lessons was adequate. Issues concerning industrial attachment were not given attention in the two technical institutes.

Therefore, both staff and students lacked the opportunities for further skill training.

Though all second cycle (post basic) schools have the same entry requirements, it was found that students preferred to enroll in senior high schools to technical institutes. There was evidence that the academic performance of the students of the two technical institutes in the Basic Education Certificate Examination (BECE) was generally poor. It implied that the quality of students admitted to pursue technical programmes in the technical institutes was not good; and this posed a challenge to the programmes.

It was found that people have a negative perception of TVET programmes towards socio economic development hence, the low patronage. The results further showed that the opinion of the majority of the respondents was that technical institutes had not served as a path for subsequent higher education.

The study established that out of the 284 respondents; made up of both teachers and students from the two technical institutes, about 99% of them admitted that there was no serious learning of entrepreneurship education in the two technical institutes. The entrepreneurship education in the two technical institutes faced the challenges of teachers and inadequate textbooks. Consequently, it was found that students were not knowledgeable enough in entrepreneurship education to set up their own businesses after completion of their courses.

Conclusions

The conclusions based on the findings of the study are as follows:

1. There is generally a short supply of training materials and basic hand tools for skill training in the two technical institutes in the Upper East Region of Ghana.
2. The provision of workshops in the various departments is fairly good and the time allotted for practical lessons is also adequate, yet skill training faces challenges because of lack of attention given to industrial attachment.
3. The preference for admission to technical institutes in the Upper East Region among the graduates of basic school education is low because of negative perception of technical education.
4. There are generally inadequate human and material resources for teaching entrepreneurship education the technical institutes and this poses a challenge for self-employment.

Recommendations

In view of the findings and conclusions drawn above, the following recommendations are made:

1. The findings revealed a short supply of training materials and basic hand tools for skill training in the two technical institutes. It is thus valuable if the government provides adequate training materials and basic hand tools could be supplied to students for practical training. In a situation where the

basic hand tools are not expensive, final year students could be encouraged to possess their own tools so that they could send them away upon completion. Additionally, females could be given some package to encourage them to pursue male-dominated programmes.

2. The findings also revealed that the two technical institutes attach little importance to industrial attachment for both staff and students. It will be worthwhile if the liaison officers and the guidance co-ordinator could promote industrial attachment education programmes for both staff and students. This could also be backed by identifying industries where students could attach themselves during long vacation holidays.
3. The study recognized that the preference for technical institutes in the Upper East Region among senior high school entrants is very low. This preference is also influenced by the low perception of technical institutes. In the light of this finding, it is suggested that there should be regular career guidance programmes for junior high school students both at the schools and other fora. Experts and experienced technical teachers could arrange for radio programmes on the importance of technical education. It is also recommended that the two technical institutes organize durbars and open days where products and skills are exhibited.
4. The study also unveiled the inadequate human and material resources in the teaching and learning of entrepreneurship education in the two technical institutes. It is recommended that the technical education division of the GES should supply adequate textbooks for the study of the

subject. Additionally, refresher course should be organized for teachers to handle the subject. Furthermore, the administrators of the two technical institutes should ensure that entrepreneurship education is effectively taught in their institutes.

5. Finally, to motivate students to be more serious in practical skills training to enable them enter into self-employment at the end of their course, it will be appropriate if the two technical institutes introduce a "tool-acquisition scheme" under the Production Unit system. By means of this scheme, the students will use the incomes realized from the income-generating activities they undertake to acquire tools for themselves. This arrangement, over a specified period, could assist trainees to acquire some basic tools to help them "take off" smoothly in the world of work, especially in the area of self-employment individually or co-operatively on a micro/small-scale basis.

Areas for Further Research

The study was to find out the challenges in the acquisition of practical skills in the two technical institutes in the Upper East Region of Ghana. It is recommended that further studies are carried out in other regions of the country on the effectiveness of practical skills training offered at the technical institutes.

A study could also be conducted on technical institute graduates to find out where and how they are practicing in their various areas of study.

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3. Name of institution.....Course Area.....
4. Highest Academic qualification
- a. Masters' Degree [] d. Technician Part 3 []
- b. Bachelors' Degree [] e. Advanced craft []
- c. Diploma [] f. Specify others.....

SECTION B:

Conditions affecting the teaching of practical skills in your technical institute

Please respond appropriately by ticking [] against the response that best reflects the extent to which you agree or disagree with each statement.

[SA=Strongly Agree, A=Agree, DA=Disagree, SDA=Strongly Disagree]

NO	STATEMENT	RESPONSE			
		SA	A	DA	SDA
5	Students do use the requisite drawing equipment during lessons				
6	Teachers handling practical lessons demonstrate the requisite skills during lesson				
7	Teachers are supplied with adequate training materials by the institute				
8	There are adequate workshops for practical training				

9	There is adequate supply of basic hand tools for practical training				
10	Teachers spend most of the practical periods with students				
11	The period allotted for practical lessons are adequate				
12	All students get the opportunity to practice the requisite skills during practical lessons				
13	Parents are made to pay material fee for the procurement of additional training materials.				

SECTION C:

Nature of industrial attachment programme in the technical institutes

Please tick [] the appropriate space to indicate whether the following statements are true or false.

14. Students are given the opportunity to embark on industrial attachment during holidays. True [] False []

15. Students are not educated on the importance of industrial attachment.
True [] False []

16. Industrial attachment is compulsory for students in the technical institute.

True [] False []

17. The technical institute plays a major role in placing the students for

industrial attachment. True [] False []

18. Students who undertake industrial attachment easily get employment after

graduation with industries they did the attachment. True [] False []

19. Technical teachers undertake compulsory industrial attachment during

long vacation holidays. True [] False []

SECTION D

Factors affecting the participation of the Youth in Technical Programmes

Please respond appropriately by ticking [] against the response that best reflects the extent to which you agree or disagree with each statement.

[SA=Strongly Agree, A=Agree, DA=Disagree, SDA=Strongly Disagree]

NO	STATEMENT	RESPONSE			
		SA	A	DA	SDA
20	The teaching of Pre-technical skills discourage entry into technical institutes				
21	People with good BECE grades prefer going to secondary school				
22	Students with aggregate 30 and above				

	are admitted into technical institutes				
23	Technical institute graduates are given direct admission onto the Polytechnic HND programmes				
24	Technical training does not provide easy transition to the world of work.				
25	students generally perform poorly in the final technical examinations				
26	Most technical students are not academically good				
27	Technical courses are suitable for the academically weak				
28	Technical training is not attractive to the society				
29	Technical subjects do not lead to good economic prospects				
30	Technical programmes are too 'theoretical'				
31	Technical programmes are relevant to the needs of the community				
32	Teachers discourage students from attending technical institutes				
33	Students are not given enough guidance				

	on the value of TVET				
34	It is expensive to pursue a programme in a technical institutes				
35	Many students who wish to enter technical institutes do not have the requisite entry grade				

SECTION E

The perception of teachers on Socio-economic Benefits of technical institutes

NO	STATEMENT	RESPONSE			
		V/T	T	U	V/U
36	Technical training is superior promotes productivity in the labour market				
37	Technical institutes have served as a path to subsequent vocational training at higher level				
38	Technical graduates are inadequately paid as teachers				
39	The Technical programmes offered are suitable to the needs of the community				
40	Most educated people send their children to technical institutes				
41	Bad educational policies have caused a				

	neglect of technical education				
42	The low image of technical education is a colonial legacy				

Key: VT=Very True, T=True, U=Untrue, VU=Very Untrue,

SECTION F

Entrepreneurship education in the two technical institutes in the region

The following questions draw teachers' views on the nature of entrepreneurship education in technical institutes in the upper east region. Please respond appropriately by ticking [] against the response that best reflects your view.

43. Do students take the learning of entrepreneurship education serious?

[] very sure [] sure [] not sure [] not at all

44. Are there enough teachers to teach entrepreneurship education?

[] very adequate [] adequate [] not adequate [] not at all

45. Are you sure technical institute graduate can set up his/her own business from the entrepreneurship education learnt in technical institutes?

[] very sure [] sure [] not sure [] Not sure

46. Are there enough textbooks on entrepreneurship education in technical institutes?

[] very adequate [] adequate [] not adequate [] not at all

THANK YOU

APPENDIX 'B'

UNIVERSITY OF CAPE COAST

DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION

MASTER OF PHILOSOPHY (VOCATIONAL/TECHNICAL)

(QUESTIONNAIRE FOR TECHNICAL STUDENTS)

A student in the above named department in the Faculty of Education of this University is conducting a study on *the challenges facing technical institutes in practical skills training in the Upper East Region of Ghana*

This questionnaire that you are being asked to complete forms an important part of the study. You are kindly requested to read through the items and respond to them as frankly and objectively as possible. You are assured of the *confidentiality* of your response and are purely for academic purposes.

Thank you for taking the time to help with this exercise.

Section A BIOGRAPHICAL DATA

Tick the appropriate response to each of the following;

1. Sex: a. Male [] b. Female []
2. Name of Institution:
 - a. Bawku Technical Institute []
 - b. Bolgatanga Technical Institute []
3. Programme/Course of study:
4. Present Stage/ Level:

SECTION B:

Conditions affecting the teaching of practical skills in your technical institute

Please respond appropriately by ticking [] against the response that best reflects the extent to which you agree or disagree with each statement.

[SA=Strongly Agree, A=Agree, DA=Disagree, SDA=Strongly Disagree]

NO	STATEMENT	RESPONSE			
		SA	A	DA	SDA
5	Students do use the requisite drawing equipment during lessons				
6	Teachers handling practical lessons demonstrate the requisite skills during lesson				
7	Teachers are supplied with adequate training materials by the institute				
8	There are adequate workshops for practical training				
9	There is adequate supply of basic hand tools for practical training				
10	Teachers spend most of the practical periods with students				
11	The period allotted for practical lessons				

	are adequate				
12	All students get the opportunity to practice the requisite skills during practical lessons				
13	Parents are made to pay material fee for the procurement of additional training materials.				

SECTION C:

Nature of industrial attachment programme in the technical institutes

Please tick [] the appropriate space to indicate whether the following statements are true or false.

20. Students are given the opportunity to embark on industrial attachment during holidays. True [] False []

21. Students are not educated on the importance of industrial attachment. True [] False []

22. Industrial attachment is compulsory for students in the technical institute. True [] False []

23. The technical institute plays a major role in placing the students for industrial attachment. True [] False []

24. Students who undertake industrial attachment easily get employment after graduation with industries they did the attachment. True [] False []

25. Technical teachers undertake compulsory industrial attachment during long vacation holidays. True [] False []

SECTION D

Factors affecting the participation of the Youth in Technical Programmes

Please respond appropriately by ticking [√] against the response that best reflects the extent to which you agree or disagree with each statement.

[SA=Strongly Agree, A=Agree, DA=Disagree, SDA=Strongly Disagree]

NO	STATEMENT	RESPONSE			
		SA	A	DA	SDA
20	The teaching of Pre-technical skills discourage entry into technical institutes				
21	People with good BECE grades prefer going to secondary school				
22	Students with aggregate 30 and above are admitted into technical institutes				
23	Technical institute graduates are given direct admission onto the Polytechnic HND programmes				
24	Technical training does not provide easy transition to the world of work.				
25	students generally perform poorly in the				

	final technical examinations				
26	Most technical students are not academically good				
27	Technical courses are suitable for the academically weak				
28	Technical training is not attractive to the society				
29	Technical subjects do not lead to good economic prospects				
30	Technical programmes are too 'theoretical'				
31	Technical programmes are relevant to the needs of the community				
32	Teachers discourage students from attending technical institutes				
33	Students are not given enough guidance on the value of TVET				
34	It is expensive to pursue a programme in a technical institutes				
35	Many students who wish to enter technical institutes do not have the requisite entry grade				

SECTION E

The perception of teachers on Socio-economic Benefits of technical institutes

NO	STATEMENT	RESPONSE			
		V/T	T	U	V/U
36	Technical training is superior promotes productivity in the labour market				
37	Technical institutes have served as a path to subsequent vocational training at higher level				
38	Technical graduates are inadequately paid as teachers				
39	The Technical programmes offered are suitable to the needs of the community				
40	Most educated people send their children to technical institutes				
41	Bad educational policies have caused a neglect of technical education				
42	The low image of technical education is a colonial legacy				

Key: VT=Very True, T=True, U=Untrue, VU=Very Untrue,

SECTION F

Entrepreneurship education in the two technical institutes in the region

The following questions draw teachers' views on the nature of entrepreneurship education in technical institutes in the upper east region. Please respond appropriately by ticking [] against the response that best reflects your view.

43. How well is the teaching of entrepreneurship education?

very good good bad very bad

44. Are there enough teachers to teach entrepreneurship education?

very adequate adequate not adequate not at all

45. Are you sure technical institute graduate can set up his/her own business from the entrepreneurship education learnt in technical institutes?

very sure sure not sure Not sure

46. Are there enough textbooks on entrepreneurship education in technical institutes?

very adequate adequate not adequate not at all

THANK YOU