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Introduction of Core Based Subjects in the Curriculum of Technical and Vocational Institutions in Ghana: Assessment of It Effect on Practical Training Sessions

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Abstract
Technical education among other things focuses on training the skill manpower needs of the youth in most countries of which Ghana is no exception. This study looks at Ghana Education Service technical and vocational sector reform programme introduced in 2010 with emphasis on the introduction of compulsory core based subjects and its effect on practical training in the institutions'. The study used a random sampling methodology to assess 160 students, 40 teachers and 8 workshop supervisors on the effect of the introduction of the core based subject on time for their practical training in their various fields of study.
Keywords: Core based subjects, practical training, skills, studies, reforms, workshop, and task.

Explanation of terms used

1. **Core based subjects (Compulsory subjects)** ; English Language, Mathematics, Integrated Science and Social Studies:
2. **Practical training includes**; on-the job training and workshop do it yourself training and any other task oriented training.
3. **TVET**; Technical and Vocational Education and Training.

1.1. Introduction

Technical and vocational education and training basically focuses on training both the mind, the heart and the hand in order for trained to be able to be innovative, entrepreneurial and be able to respond to the developmental need of a nation. In achieving this task of providing these responds to the critical manpower needs of every nation, it is very important that the requisite training is given to ensure that trainees are up to the task both in public and private service. Romer (1990) posits that, countries whose population have high levels of education are fertile soil for information based technology. I cannot agree much more with 'Romer". It is however important to note that, depending on the manpower need of a country at a specific time, its educational needs are geared towards those areas to ensure that its development agenda is achieved. Ghana currently faces a great unemployment challenge hence there is the need for it educational curriculum to reflect its quest to overcome that challenge. The introduction of core based subjects which has also become compulsory for all vocational and technical institutions in Ghana is therefore worth looking at to assess whether it will positively contribute or otherwise to the countries agenda of reducing youth unemployment in the country through technical and vocational education and training. Lewin (1997) among other points suggested that, government worldwide should focus and invest in technical and vocational education and training (TVET) in order to

a. To reduce unemployment as a result of providing employable skills especially to the youth and those who cannot succeed academically.
b. To transform the attitude of the people in favour of occupations where there are occupational prospects for the future. These assertions cannot be overemphasised.

1.2. 'IMPORTANCE OF PRACTICAL TRAINING IN TECHNICAL AND VOCATIONAL TRAINING INSTITUTIONS'

Practical training is very essential for one to acquire the necessary skills that can help in solving societal problems. It is should therefore be a priority for any curriculum designer for technical and vocational education and training. It becomes imperative for a developing nation like Ghana to train skilled labour with the required competencies that can help the trained to become effective on the job or to become successful entrepreneurs. This when done, will make the technical and vocational training institutions relevant to the developmental agenda of the nation. A country without the required skilled and task oriented trained youth will have to hire numerous foreign labour that will perhaps go a long way to increase the rate of their youth unemployment. Practical training depending on facilities available and the quantity and quality of time assigned to the training may determine how well one will be trained to acquire the practical skills set out in a curricular. It is therefore imperative for those who frame the structure of technical and vocational education and training curriculum to allot more practical training time to competency based task than that of theory. Theory is important for any successful practical training; it should however not overshadow the practical training. The introduction of core based subjects in technical and vocational

training institutions there need to be studied comprehensively to assess whether it is enhancing the competency training task.

The old structure of TVET Institutions before the 2010 Reforms

Before the introduction of the Technical and Vocational Education and Training sector reforms in the year 2010, by the Ministry of Education-Ghana; led by the Ghana Education Service, most of the technical and vocational training institution used eight hours as school periods and out of that used six hours. Three hours each for two field based training and the remaining hours used for theoretically based courses that enhanced the trainees and the trained functioning in the world of work after their training.

The theoretical courses were made up of; trade based mathematics, communication skills and trade science.

The 2010 Reforms and the new structure

The 2010 reforms by the Ministry of Education-Ghana; led by the Ghana Education Service, that sought among other things to make technical and vocational education and training responsive to current trends made the following changes; ICT part of all programmes in the educational and training institutions. Again, core based subjects like English language, Mathematics, Integrated Science and Social Studies were introduced and they were made a pre-requisite for completed technical and vocational education and training in Ghana particularly, at the intermediate, and the advance level of training TVET institutions. The reform was partly in response to the requirement by the tertiary institutions in Ghana for those who were trained to go through core subject course training before being admitted. After years of agitations by students of TVET and its graduants, this reform came as a relief to many. It is however not known as to its impact on practical training.

2. Methodology

2.1. A descriptive survey was used; the study also made used of simple random sampling and stratify sampling respectively.

2.2. Population and Sample

The study was conducted at Saint Koforidua Technical Institute-E/R as well as St Paul's Technical Institute-Kukurantumi-E/R of Ghana. The population involved all the students, all the teachers and all workshop supervisors of the stated schools. The choice of the schools was based on the fact that they are the schools broad training programmes and also widely known technical and vocational training in the Eastern Region of Ghana.

2.3. Study Instrument and Data Collection

A set of questionnaire was designed. It was very concise and relevant to the study after it validity and reliability has been tested at Accra Technical Training Centre (ATTC). A questionnaire administrator also vetted the questionnaire.

3.0. Results

3.1: Background information

From the analysis of the responses to the questionnaire, it was determined that most of the students have spent more than a year in the school. The years spent in the institution was pegged above two years in order to ensure that respondents were informed enough to be able to respond to the topic under study. Table 1; shows below, even distribution of students, teachers and workshop supervisor' population sample.

Table 1: Background information

COURSE	STUDENTS N=160	TEACHERS N=40	WORKSHOP SUPERVISORS N=8	YEARS SPENT IN THE INSTITUTION
Electrical& Electronic Engineering	20	5	1	2yrs and above
Building Construction	20	5	1	2yrs and above
Plumbing	20	5	1	2yrs and above
Auto-Mechanic	20	5	1	2yrs and above
Fashion	20	5	1	2yrs and above
Carpentry and Joinery	20	5	1	2yrs and above
Spraying	20	5	1	2yrs and above
Painting	20	5	1	2yrs and above

3.2: Time Spent at the workshop for competency training before and after the introduction of the 2010 TVET reforms. From table 2 below, it is observed that respondents grouping; teachers and students has had their time of

practical training change whiles the time for workshop supervisors remain the same. It was discovered during the study that, though workshop supervisors working time remain the same their actual activity time has reduced as result of the reduction of the teaching and study time for teachers and students respectively.

Table 2: Time spent at workshop for competency bases training

Time spent at the workshop per day before and after the technical and vocational education and training reform in 2010		
	Before Reforms	After Reforms
Teachers	3 hours per session	1.5 hours per session
Workshop Supervisors	8 hours per day	8 hours per day
Students	6 hours per day	3 hours per day

3.3: Does the differences in time allotted for practical training negatively affect your training schedules at the institution's workshop.

From the table 3 below, a majority (85%) of respondents who were teachers said the reduction of time does affect their practical training schedules. This indicates that the reforms though good, have created another problem for the training of technical students. A greater number of the respondents (66%) who were workshop supervisors agreed to the assertion that, the reduction in time at the workshop affects their practical training. Most (78.1%) of the respondents who were students agreed that the reduction in time of practical training has affected their training schedules.

Table 3: Does the differences in time allotted for practical training negatively affect your training schedules at the institution's workshop.

RESPONDENTS	YES	PERCENTAGES	NO	PERCENTAGES
Teachers	34	85%	6	15%
Workshop Supervisors	4	66.60%	2	33.33%
Students	125	78.1%	35	21.9%

Discussion

Training in any field of study is very important, in that, it to ensure that the skilled staff remained relevant to the scheme of plan for the institution or the organisation. Technical and vocational teacher education (TVTE) needs to be responsive to rapidly changing student and workforce needs. Today's pre - tertiary technical/vocational teacher, according to Bottoms and McNally (2008), has a dual mission: to prepare students for the ever increasing workplace requirements and for further study. As a consequence, Bottoms and McNally observe that high schools need qualified teachers who can create and manage learning environments where students prepare for success in their further education and in the workplace. Therefore, TVTE programs need to create the environment where student teachers could relate theory to practice through simulated work environment in schools and industrial attachment at real workplace. The simulated work environment in school, however, differs significantly from that of the real workplace environment in which most students of our technical and vocational institutions will eventually be required to function (Roegge, Wentling & Bragg, 1996).

Technologies keep on changing almost on a daily basis making it difficult for educational Institutions to acquire all the necessary machines and equipment required for the training of their students'. This is buttressed by Finch and Crunkilton (1999) who acknowledge that it is difficult for individuals and institutions to get all the highly specialized equipment needed to operate quality programs in schools. In the light of the foregoing, the recommendation of Roegge et al. (1996) that TVTE programs should contain workplace experience component is worthy of consideration. Consequently, educational institutions are under increasing pressure to incorporate workplace training into their curriculum to provide workplace experience for learners. Embracing work - integrated learning could also help alleviate the effect of educational institutions' inability to acquire specialized equipment needed. One of the most important features of TVET is its orientation towards the world of work and the inclusion of work - integrated learning in the curriculum to prepare students for the work environment. Whilst some skills could be obtained in the classrooms on campus much more is required from other interventions like industry 'players' visit and comprehensive planned and supervised field attachment. The reduction of time allotted to the practical training as discovered from this research in table 2, indicates that, the reforms in the technical and vocational education and training need to be looked at once again. Zegwaard and Hodges (2002) are of the view that some skills are best developed in the work place via the work - based learning. This notwithstanding, not much attention is being given to work - integrated learning in respect of TVET in Ghana. There appears to be low participation in industrial attachment by teaching staff and students of technical and vocational institutes of Ghana due to time constraints perhaps as a result of the introduction of the core based subjects. The MoEYS (2003) did report that, in 2002, the proportion of teaching staff and students of technical and vocational institutes on industrial attachment stood at 18%. As one of the strategies to increase participation, the MoEYS did recommend to TVET

providers to arrange for work - experience in collaboration with the private sector, industry and commerce. By 2015, the participation in industrial attachment by teaching staff and students of technical and vocational institutes is being projected by the MoEYS to reach 40%.

The state of practical training as well as industrial attachment in respect of TVET at the tertiary level in Ghana may not be much different from the above. In a cross - country study of engineering education in three countries, this therefore require much effort be put at the technical and vocational education training level to ensure a good foundation is laid for trainees to acquire more skills. It however not be denied that accessing industrial attachment is without enamours challenge. Afonja et al. (2005) concluded that placement of students for industrial work experience is problematic, the situation being less serious in Zimbabwe than in Nigeria and Ghana as employers are reluctant to take on students. Given the importance of employers in work - based learning, it is difficult to imagine how any successful program can function without the support of employers (Coll et al., 2002).

Afonja et al. (2005) further contend that even when students are accepted by employers for industrial attachment, they are often not well supervised or assessed. To strengthen industrial attachment, they suggest faculty - employer involvement in the design and supervision, establishment of strong industrial placement units by faculties and a way of compensating employers for providing placement for students on industrial training. In recognition of the reluctance of employers to take on students, a TVET strategy document of the MEAU (2007) has also suggested that employers provide opportunities for industrial attachment for trainees and for TVET teachers to regularly update their work experience. The MEAU acknowledges that the quality of TVET is dependent on the competence of the teacher which is partly measured by being abreast with new technologies in the workplace. Hence, it is important that TVTE programs incorporate work - based learning into the curriculum. From the outcome of table 3, and its analysis, the indication is that the reduction of time for practical training does affect the students, teachers and workshop supervisors contact periods with each other and that might affect their ability to complete effectively and efficiently their competency based training task. Nambudiripad (2003) asserted that students graduating from universities are like uncut diamonds and look useless like trifles, but when given proper training they dazzle forth in all their glory. Stewart and Knowles (1999) reported that employers seek graduates endowed with good communication skills, creativity, initiative, interpersonal skills, leadership, motivation, organisational ability and teamwork. Employers desire non-technical attributes such as independence, ability to make good decisions, good communication skills, professionalism and good work ethics, and multi-racial awareness in young graduates who are expected to work in a multidisciplinary team in the real world of work (Azami et al, 2009; Macleanand Ordonez, 2007; Liyanage and Poon, 2003). Learning institutions providing construction education therefore have to evolve from providing students solely with technical skills to providing them with courses that provide students with non-technical attributes required in the world of work (Liyanage and Poon, 2003). The results also confirm Callanan and Benzing's (2004) doubts about the contribution of it towards improving decision-making outcomes for graduates. It was evidently clear that the population distribution was very broad. Again most of the field of study in the institutions of the population of the study were considered for the study.

Conclusion

Practical training benefit to training is very important. According to Akyeampong, K. (2007), Policy planners as well as policy implementers must ensure that the focus is not lost on anyone in order to be able to achieve the aim of reducing the rate of youth unemployment in developing countries like Ghana. It will therefore be prudent that, the government take a country wide study of the effect of the reform on practical training and come out with plans to address them in order not to repeat the very thing that TVET seek to do (Thus to reduce high rate of unemployment through the training of skilled competency based manpower who can set up small scale industry of their own or become highly sought after labour personnel)

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