



## TEACHERS'/TRAINERS' INDUSTRIAL ATTACHMENT CHALLENGES AND LESSONS

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### Abstract

Education plays a great role in contributing to the economic development of both developed and developing countries. Technical and vocational education and training provides an important pathway for developing an effectively coordinated and harmonized TVET system that is capable of producing quality skilled workforce. Industrial attachments usually refer to the formal placement of trainees in the workplace to facilitate the achievement of specific learning outcomes that would potentially lead to their employability on completion of a training program. Industrial attachment is not only critical for trainees, it is equally important to teachers to be qualified and build their confidence. During in this period knowledge and skills gain in industrial attachment is the base of my future career development. This help me to be confident in applying the practical knowledge and skills I have learnt in any company.

For this work I used three data gathering tools interview, observation and questioner. An interview questionnaire involves a series of open-ended questions related to job satisfaction including salary. From our observation and interview data the management are full satisfied by their employees. Most of them are highly learned and committed, devoted to their jobs. Final from different source I assessed the company problem and propose the best solution for both industries and college.

This study recommended that adequate resources be mobilized towards trainer's industrial attachment, the industry management must focus on employee's safety and salary satisfaction in addition the colleges must review the curriculum to satisfy their industries demands to deliver of qualified trainees. Finally need to develop partnership with industry to easy placement of students, teachers and to deploy attaches under supervision of qualified and experienced mentors.

## **1. Introduction**

Education plays a great role in contributing to the economic development of both developed and developing countries. In the same way, Technical and vocational education and training provides an important pathway for developing an effectively coordinated and harmonized TVET system that is capable of producing quality skilled workforce, with the right attitude and values required for growth and prosperity of various sectors of the economy. This goal can be realized in part, by the quality of trainers. Quality of education is strongly dependent on the quality of teachers, a function of their knowledge and mastery of subject matter content, appropriate teaching methods and professional values (Barrera-Pedemonte, 2016).

The highly skilled work force demand emerged in industries could be reflected as a new challenge for TVET sectors. Within learning environments, rapid changes have placed new demands on vocational teachers to continuously update their competence (Fejes & Köpsen, 2014). This global trend combined with the multiple roles played by vocational teachers, such as tutors, mentors and practitioners (Mahlamäki-Kultanen et al., 2006), raises questions about which competence they should develop and how.

Industry attachments have long been accepted as a core component of training for trainees and are well structured and coordinated. Although industry attachment for teachers and trainers is equally important, it has not received parallel attention, coherence or coordination at the policy or organizational levels.

Industrial attachments usually refer to the formal placement of trainees in the workplace to facilitate the achievement of specific learning outcomes that would potentially lead to their employability on completion of a training program. Industrial attachments typically involve training providers and industries (through employers) forming partnerships to offer situated learning opportunities in the workplace so that learners and Technical Vocational Education and

Training (TVET) practitioners have access to authentic experiences that only the workplace can offer.

Apprenticeships, traineeships and cadetships are at the core of industrial attachment within TVET. Within these schemes there are variances in paid, unpaid, full-time and part-time arrangements. These types of attachments were traditionally designed for young learners aspiring to become employable in their chosen fields. Nowadays, older and experienced workers are also participating for re-training, lifelong learning, and personal development.

Industrial attachment is not only critical for trainees, it is equally important to teachers, trainers and instructors (who are referred to as 'TVET practitioners' in this chapter). The term 'industrial attachment' is commonly used in Asian and African TVET systems to describe arrangements allowing VET practitioners to replenish and update their skills. In other countries it is called on-the-job learning for teachers and trainers (e.g. Finland), return or back to industry programs (e.g. Australia) and industry placements or secondments (e.g. United Kingdom).

Technical Vocational Education and Training practitioners are "involved in a range of 'direct' activities, such as delivery, development, and review and assessment of courses or modules" (NCVER, 2004, p. 7). The delivery of courses or modules, in the TVET institutions, remains the most common activity for TVET practitioners. However, among industry circles subject specialists with trade competencies, rather than those with additional pedagogical skills are still regarded as effective trainers. Gauld & Miller (2004) found that many employers continue to engage subject specialists for the provision of training in the workplace: "Many employers are sending the message that anyone can be a workplace trainer or training specialist once they have some knowledge in a particular content area" (p. 18). However, there are important pedagogic practices as well as content that are required for effective learning in workplaces and elsewhere (e.g. TVET colleges).

Dire Dawa ploy technic college one of the known colleges which a large number of skilled labor forces are graduated in each year. Dire Dawa Polytechnic College (DDPTC) established in 1986 in cooperation with the Former Soviet Union (FSU) and the Ethiopian Government as Dire Dawa Technical School in the City Administration of Dire Dawa. Subsequently, by the year 2005, the college was re-established as higher TVET Institution by

proclamation with main objectives of producing competent middle level skilled workforce to the local and national industries; create employment opportunities for the citizens; capacitating micro, small and medium level enterprises; and improve their entrepreneurships, productivity and competitiveness. Currently, the college is providing formal, non-formal and informal TVET short and long-term programs in various occupations under the 12 departments.

## **2. Statement of the problem**

One of the most important features of technical and vocational education and training is its orientation towards the world of work and the inclusion of work-integrated learning (Donkor et al, 2009a). The essence of polytechnic education is to run career-centered and more practically oriented training. There are several concerns being raised by employers on the colleges failing to produce graduates with highly qualified skills for employment. On the job training is then intended to complement what the attaché has learnt at college with what the job demands. Now a days many industry owners are not cooperated for industrial attachment because they assume industrial attachment means trainees are simple waste of resource and machines

This has become a problem worrying stakeholders including students and lecturers because on the job training is done in the same industry or organizations. Many attaches shift blame to on job training environments. This study intended to establish challenges faced by teachers and student during industrial attachment

## **3. Purpose of the study**

The most important mission of technical and vocational education and training is its orientation towards the world of work and the inclusion of work-integrated learning (Donkor et al, 2009a). The essence of polytechnic education is to run career-centered and more practically oriented training. The purpose of this study was to investigate whether industrial attachment provides a meaningful and effective learning experiences for teachers and trainees and the study hoped to achieve this by investigating the importance of industrial attachment both for teachers as well as student enhancing practical skills and what challenges faces during stay in attachments, the

usefulness of the attachment program, and explore some strategies to curb the issues. Further, it was also to investigate the extent to which theory and practice are included in the curriculum.

#### **4. Objectives of the Study**

- To explore challenges faced by polytechnic teachers during the industrial attachment period.
- Asses the result of previous TVET graduates performance at the industry
- Asses the Industry's problems and propose the best solution
- Recommendation for curriculum revision

#### **5. Company Profile**

The company, Shemu Private Limited Co., was established in December 14/1999 e.c at Dire Dawa with a starting capital of Birr 1,000,000 (One million Birr) which was raised to Birr 75,000,000 & plus now a days. At its startup, number of total workers has been only 57 in a single bar soap production plant. The Company is now engaged mainly in manufacturing, distributing and selling dry and liquid detergents, soap noodles, palm Olein, vegetable shortening and cosmetics. The Company, which has its own corporate level office based in Addis Ababa, is undertaking its manufacturing activities in two manufacturing units-at Dire Dawa Main Factory and Kotebe Research & Development Center. With this arrangement of its organizational units, the Company is endeavoring to reach out the overall national market.

The factory, using the current state of technology in the industrial sector and by modernizing previous production process system, as well as eliminating weaknesses found in the past operational years started production of edible oil and is supplying it to the national market by designing and expanding various projects to deliver new and marketable products to the consumer in order to achieve its goal.

The company is obviously working hard year-in-year-out by evaluating its' seasonal situation of economic, political, social, technological conditions, competitive nature in the field, its internal capacity, and its strategies to remain competitive and profitable in the free market economy system,

striving to develop its comprehensive efforts to achieve its long-term goals based on up-to-date information.



Fig 2.1 Edible oil



Fig 2.2 Printing and packing product



Fig 2.3 Home and personal care product

The company has a corporate level plan to expand and build its industrial capacity, especially in the oil and related items producing sect which triples its man power in the next five years.

## 6. Practical knowledge and skills gained

knowledge and skills gain during my industrial attachment is the base of my future career development. I am confident in applying the practical knowledge and skills I have learnt in any company.

- I have gains industrial experience
- Maintain and replace spare part of different machine
- Basic electrical knowledge
- Interpersonal skills
- Paying attention at work
- Time keeping

## 7. Tracer assessment result of previous TVET graduates at the industry

For this work I used three data gathering tools interview observation and questioner. An interview questionnaire involves a series of open-ended questions related to job satisfaction including salary.

The questioners have semi-structured (both an open-ended and closed end) type of questionnaire to get required information. The questionnaire had two parts; the first part focused on general information of respondents, while the second part was emphasis to get information about industry work experience related.

From our observation and interview data the management are full satisfied by their employees. Most of them are highly learned and committed, devoted to their jobs. If the interruption of electric is happening the employees are engaging other works like making furniture using scrap woods, construction work to support the company indirectly to save the company cost and even the employees are developing their skill.

- Job satisfaction of graduates,

From our data the management and supervisors are responding TVET graduates are highly committed and disciplined in their job. More than 50% employees are young graduates from TVET. Before recruited TVET graduate, the company give training related to job and if competent towards the job then student is full job employee. Over all the manger are highly interested to collaborate for TVET institute for curriculum preparation and training.

➤ Salary status of graduates,

Salary of graduates employed are in industry is the major problem in the country. The same as the company are one of profitable company but the salary and job burden are not compatible. The employee highly devoted towards the job but salary is not enough. For this reason, the company are trying to subsidy more than 85% foods to their own employees and give monthly company products.

➤ Job performance status of graduates like technical skill, life skill, management skill

As from data and observation TVET graduates highly competent, because the company also provide training, this training by itself is not enough but the TVET graduates are passionate

➤ Practical knowledge and skill gaps of graduates,

Over all the TVET graduates are well trained before assigned the task this help employees are equipped the necessary skill and knowledge. In addition, for welding employees take skill gap training by Dire Dawa poly technic college this help them for good maintenance the system. The quality the company is the employees are assigning the job based on their interest this help the employees do their job by passion. Finally, from the observation the employees are doing the job with less care about safety.

➤ Work ethics of graduate

TVET graduates are well ethics even the supervisors and technical department help to coaching behave a good citizen, us we observe when the plant is shut down due to power interruption the employees to find the way to help the company.

## **8. Industry's problems assessment result**

Shemu industry Plc. is the largest company and handle more than 4 plant. The company need large area for production for expansion. The main problems facing industry are:

- Company used building for production is not suitable for workers most of them are look like store, due to this the machine set up, layout and according to ergonomics the building is not suitable for production



- Lack of maintenance hand tools and trouble shoot diagnosis equipment
- Inadequate knowledge towards safety, maintenance and kaizen
- High demands but Shortage of raw material
- Insufficient available personal protective safety materials
- Insufficient amount of spare part available, procurement procuracy
- Shortage of Wear house
- Insufficient available of well-trained mechatronics student
- Insufficient available electric motor automotive forklift trac driver student
- The workshops are not sufficiently arranging with necessary machine tools and skilled manpower
- In available supportive workshop, most maintenance are carried out outside the workshop near to production area.

### **9. Industry's problems solutions Proposal**

During the industrial attachment work we try to find out the core industry related problem and then discuss with responsible supervisors and management. The management accepted and agree the company core problem. Therefore, based on the identified problem, our propose the solution are:-

- The management allocate sufficient budget on time for spare part and inputs material
- The industry allocates the right-hand tools for maintenance person
- Allocate and fulfill personal protective material specially for machine operators
- For increasing employee's satisfaction if possible the industry rises their salary and incentive
- From our data I recommended all operators including staff take the training in industrial safety management and kaizen
- The company have a plane for further expansion I propose standard machine shop and welding workshop with necessary tools, equipment and skilled manpower

### **10. Recommendation for curriculum revision**

The industry attachment goal is to integrate industry with TVET to help identify industry demand by near. Based on the finding industry demands and our curriculum we see some gaps because in

industry our student faces real and working machine and tools, some of this machine are not compatible in our TVET scope but to solve this TVET must cooperate with industries expand student industry- linkage pregame. Finally, we proposed in curriculum

- On manufacturing sector, the curriculum must integrate on basic electric course and machine drive because most of industry machine operators are from manufacturing department.
- The industry needs well trained mechatronics students, mechatronics curriculum give attention on electrical course for this the curriculum must incorporated with mechanical course and ICT
- Industry are used electric automotive forklift car, so the TVET to trained on automotive forklift car drive and maintenance student

## 11. Lesson learns

This is my first industry attachment for long day during my teaching experience and I was well trained and gain a fruitful working experience. I had gaining “real world” working experience from the industry. I learn from the company

- Punctuality in all aspects
- Adopt new skills
- Connect with people at my career-level
- Good Time Management
- Adhering to the office dress code

## 12. Challenges and Remedial actions

### 12.1 Challenges

I was working this internship with high pleasure but our class duty is maximum, if this internship is dual benefit for teachers as well as both company and TVET, if the teacher off class to join internship program for effective.

- Industry do not want to risk damaging their machines by giving access to inexperienced TVET teachers.
- As much as the organization try to work with us but not enough achieve the internship goal, the industry supervisor is all of the day busy by own duty.

- Industry is far from the city transport service is another challenge.
- During internship we consider among company workers, the company workers all are well dress and keep personal safety equipment.
- Relevance of attachment from my department view
- My schedule is very tight, I have given two-day regular student class per week in satellite college.

## 11.2 Remedial actions

For succeed to this internship program I was try to solve my challenge during internship program by

- I was working with my supervisor on his free and comfortable time.
- I wake in early to arrive on time in company
- I was given compensation class Saturday and Sunday for regular class student

## 13. Conclusion and Recommendation

### 13.1 Conclusion

Teachers industrial attachment plays an important role in establishing a link with industrial and socio-partners, relating teaching and learning processes to the latest development in industries, and provides opportunities of working with most current technology, machinery, equipment, tools and systems. It plays a very significant role in equipping teachers with necessary skills and experiences to meet that challenges in the world of work. The success of industrial attachment as a key component of training would be a result of a lengthy process with input from various partners and their agents.

ESTRP go one step link to cooperate college and industry. This second batch teachers work industry attachment experience is another input for next phase teacher who's willing to engaging industrial attachment. Finally, the attachment properly planned and implemented, the college gain input for further curriculum planning and opening new occupation for satisfy the company demand.

Finally, my industry attachment was a really good learning program. It helped to enhance and develop my skills, abilities, knowledge and it helps me identify strengths, abilities, weaknesses. It was a good experience and memories as not only had I gained experience, but also new industry friends and knowledge.

### 13.2 Recommendation

Finally, Based on our stay last one-month industrial attachment I was recommend the following

- The short period of industrial attachment did not allow teachers to familiarize themselves with operations of industry. Therefore, it is recommended that the college review and extend the period or duration for Industrial Attachment with two or more months to enable teachers familiarize themselves with to industry and gain the required attachment objectives.
- Since the findings showed that industrial attachment activities extremely benefit for teachers as well as college, it is recommended that the college allocate more resources to the Industrial Attachment activity by allocating adequate funds essential for effectively managing.
- Each trainer was assigned to work with one supervisor which created one-on-one working relationships and provided space for observation and discussion. The trainers received exposure to different occupations.
- Teacher's internship period and student apprenticeship period to be similar, he is able to follow and guide him student.

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