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Measuring Student's Perceptions towards the quality of Industrial Training Programs: College of Technological Studies, As a Case Kuwait

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ABSTRACT

In Kuwait, as in many of the Gulf States (e.g. Qatar, United Arab Emirates, Saudi Arabia), vocational and technical education is seen as a significant element in providing industries and business with semi and skilled indigenous manpower. It is a formed of a unique education system that's allowing the transformation of knowledge, skills and attitude to both trainers and students. However, the success of such distinguished education system would rely on management style that furnishes the appropriate learning environment to ensure the achievement of quality in vocational and technical education. This would ensure providing industries and business with the required local manpower that able to manage, maintain, and adapt the imported technology to suit local environments. The focus of this paper is to examine the quality of industrial training programs at the College of Technological Studies, CTS. Several issues would be investigated and examined. Among which: the objectives of the program, the criteria for selecting students, the participation of related industry in the evaluation of the quality of the program, the role of the college supervisor in the success of such program, the suitability of material in relation to industrial needs, obstacles that might hinder the achievement of satisfactory outcomes. The paper would conclude that unless the management of the CTS realised and appreciate the significant role of industrial training programs in transferring knowledge, skills and attitudes to students, industries would continue to rely on expatriate for years ahead.

Key words: Vocational and technical Education, industrial training program, sandwich courses, developing Indigenous Manpower, Interaction between vocational and technical education and local industries and business, Kuwait.

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INTRODUCTION

Vocational and technical education is a unique type of education system. It embodied programs that are completely different from those provided in other educational institutions. In a wider view, it focuses on how to train the mind and hand to perform a specific task in specific working environment. Thus, its aim to provide students with knowledge, skills, and attitudes that is mostly needed by certain industry or business. In related literature, vocational and technical education has been defined as "education training that provides practical experience in a particular occupational field, as agricultural, home economics, or industry". (Dictionary.com Unabridged, 2017) A similar definition is provided by Momoh, 2011, who view vocational and technical education as that form of education which focus on preparing students for employment in a certain job. UNESCO has defined vocational and technical education as a formal or informal learning experienced either in educational institution or in the real work place. (Gatt, Flak and Wallace, 2011).

Thus, vocational and technical education is a combination of theory and practice as Merriam-Webster's Unabridged Dictionary, which define vocational education as "training for a specific occupation in agriculture, trade, or industry through a combination of theoretical teaching and practical experience provided by many high schools in their commercial and technical divisions, and by special institutions of collegiate standing (as a college of agriculture, a school of engineering, or a technical institute). Vocational and technical education is designed to link what is being taught and learned in class, workshops and laboratories in the real world of work. Industries and business have a significant role in the success of vocational and technical education. Lestari & Siswanto (2015, p.15), stress on the role of industry in training students since is considered as part of the learning program. While, Calhoun & Finch (in Sonhadji, 2013, p.154) confirmed that vocational and technical institutions are those educational program which focuses on preparing students in entering the world of work. Researcher and observers in vocational education have realized the importance of linking vocational and technical institution with real work place. (Virtanen, et. al. 2014). It is through which vocational and technical education can contribute significantly in reducing the level of unemployment, increase indigenous semi and skilled manpower, promote external investments and improve productivity. It also has a positive impact on the development of economy and increase economical growth. "There is growing consensus that productivity and long-term economic growth depend on the quantity and quality of a society's human capital, which are necessary both to fuel innovation and to adapt new technologies". (Hanushek and Woessmann 2008). The fact is that workplace is in a constant change and understanding the notion of workplace as a learning environment is increasing by both educators and industrialists. (Fuller and Unwin, 2011). Attention in vocational and technical competencies has been widen to include promoting positive thinking, problem solving skills, encouraging team work approach, analytical skills, and innovation skills. (Lipsmerier, 2013). Lecturers in vocational and technical education must have the appropriate experience that enables them to transfer the know-how and know-why to potential students in order to be able to handle the applied technology. In other word, lecturers have to obtain new competencies to cope with the new technology apply in industries. (Umarik and Rekkor, 2013)

There are several teaching techniques that can be adapted in vocational and technical classes, workshops and laboratories. Cooperative education or work-integrated learning (Gardner & Barthus, 2014) is a combination of classroom learning with real work environment. Cooperative education is: "...an academic program integrating classroom learning and productive work experiences in a field related to a student's academic and career goals. Co-op provides students with progressive learning experiences integrating theory and practice. As an academic program, co-op serves as a partnership among students, educational institutions, and employers". (World Association for Cooperative Education, 2014-2015).

It is thus, a combining of classroom learning with real work experience. It is indeed guiding students to work transition to meet industrial and business requirements. (Canadian Association for Co-operative Education, 2016). Lecturers and trainers in both sectors (vocational and technical institutions and industry and business) have a vital role in the success of cooperative education. Attention should be directed to those teaching techniques that encourage students and increase their interest in the course of instruction. (Yinusa, 2014). Lecturers and trainers are encouraged to use instructional materials which focus on practical cases stimulated from real work place in various specialisations. Indeed, instructional materials would facilitate the learning environment and assess in the outcome of vocational programs. (Igbo and Onyema, 2015). In worth stressing at this point, that training facilities has a significant role in the success of skills acquisition. Widaryanti, 2016, stress that a training facility for adult professionals "must have flexible and technologically-advanced learning environments that are safe, healthy, comfortable, aesthetically-pleasing, and accessible". Training facilities must respond to training objectives, and students must have the chance to use machines and tools in a safe and healthy environment.

In Kuwait, the need for skilled and semi-skilled national workers is the highest government priority in national human resource development. Expatriates form 81% of the total workforce. The number of population in Kuwaiti in 2016 was 4,132,000, out of which 1,238,000 are Kuwaiti and 2,893,000 non-Kuwaitis. In fact, the World Bank report has classified Kuwait as having the fourth smallest ratio of national to expatriate workers in the world. The domination of expatriates is visible in most sectors, especially manufacturing, construction, transportation, storage, communications, financial insurance, real estate and business services. (Alrai Newspaper, 2017).

As a result, the Public Authority for Applied Education and Training (PAAE&T) has been established to respond to the urgent need for skilled and semi-skilled national labour. The PAAE&T consists of the College of Technological Studies, the College of Business Studies, the College of Business Education, the College of Health Service, the High Institute of Energy, the Sabah Al-Salem and Shweekh branches of the Industrial Training Institute, the Institute of Nursing, and the Higher Institute for Communications and

Navigation. The outcomes of this research would assist decision makers in the CTS in developing an appropriate plan that would improve the status of vocational and technical education, enhancing students capabilities, making the best utilisation of the available resources, strengthening linkage with industries, reducing dependence on expatriates and achieving economical goals. Therefore, it is important to design, management and monitored such programs (cooperative education or work-integrated learning) in order to achieve a satisfactory results. Otherwise, the country (Kuwait) would continue to rely on expatriates for years ahead.

Research Objectives:

- a. To identify and examine the criteria's used at the CTS in the selection of students for attending industrial training program.
- b. To identify and examine the criteria's used at the CTS in the selection of industrial training sites.
- c. To identify and examine whether industrial training objectives are designed to transfer the knowledge, skills and attitude mostly needed by related industry (oil and electricity and water).
- d. To identify and examine industrialist perception towards the quality of industrial training program.
- e. To identify and examine those obstacles (if any) that might hinder the success of industrial training program.

The outcomes of the research would indeed guide the management of the College of Technological Studies to improve the quality of industrial training program. In addition to, reviewing and evaluating the training objectives to ensure meeting industrial expectation. This would contribute positively in providing related industry with indigenous skilled and semi- skilled manpower able to manage, maintain and adapt the imported technology, Thus, reducing dependence on expatriates.

How reviewing the standard of industrial training programs would benefit the College of Technological Studies?

- To identify and examine the current and future status of industrial training programs.
- To identify and examine the real needs of industry and the action required to meet industrial expectation .
- To identify and examine the level of knowledge, skills and attitude mostly needed by related industry.
- To identify and examine those obstacles (if any) confronting staff and students in achieving satisfactory results in industrial training programs.
- Enhancing the reputation of the CTS and encouraging more potential students to enrol in different specialisations.
- Strengthening collaboration with industries and enhancing industrial confident in the standard of the CTS's graduates.
- Improving society image regarding the standard of the CTS graduates and their competencies. In addition to, providing society with various training programs that can improve the standard of living.

MATERIAL AND METHODS

Design

This research consists of a descriptive survey designed to identify and examine the implementation of quality assurance in the academic departments at the College of Technological Studies. The research would focus on the requirements as well as the obstacles that may hinder the implementation of quality assurance.

Sample

The research would encompass personal interviews with (6) supervisors responsible for industrial training program in nine academic departments at the CTS. They are namely, Manufacturing Engineering, Electrical Engineering, Petroleum Engineering, Civil Engineering, Electronics Engineering, Chemical Engineering, Automotive and Marine Engineering, Mechanical Power and Refrigeration Technology, and Laboratory Technology.

The purpose is to examine the college supervisor's perception towards the quality of industrial training program. Among the issued that would be discusses are: the length on industrial training program in relation to the anticipated outcome, the performance of students sand their commitment in the completion of industrial training program, obstacles that might hinder the achievement of tangible results. An attempt would be made possible to interview the head of industrial training programs at the

CTS. Among the issue that would be highlighted are: whether industrial training programs met industrial expectation and future plan that would enhance the quality of industrial training program.

In addition, a questionnaire would be designed, tested and distributed to stratified random sample of 200 students from the nine selected academic departments. Several issues would be discussed and examined. Among which are: the suitability of the duration of industrial training program, the role of the college supervisors in managing, monitoring and examining the efficiency of industrial training program, the suitability of industrial training sites, whether industrial training programs achieved the expected results. It is worth mentioning that personal interview would be conducted with (6) supervisors in the related industry (oil sector and electricity and water). The objective is to gain in-depth information regarding the credibility of industrial training programs.

Instrumentation

The target population for this research consists of selected students, industrial training supervisors at the College of Technological Studies, and students direct supervisors in selected industry.

Statistics and Parameters

The statistics pertain to the **sample**. The parameters pertain to an entire population.

The research parameters are as follows:

- (a) Selected supervisors responsible for industrial training programs at the CTS.
- (b) Selected students and industrial training direct supervisor at the CTS.
- (c) Head of industrial training program at the CTS.
- (d) Selected students direct supervisors at related industry.

The research sample is as follows:

- Selecting (6) supervisors responsible for industrial training programs in nine academic departments at the CTS.
- The head of industrial training program at the CTS.
- Selection (200) students representing the nine academic departments at the CTS.
- Selecting (6) industrial training supervisors in related industry (oil and electricity and water).

RESULTS AND DISCUSSION

The Characteristic of the Research Sample

A questionnaire was distributed to a sample of 250 students at the College of technological Studies, and 225 completed questionnaires were received. This represents 90% of the total sample. Kuwaiti students formed 96% of the total selected students. The distribution of students based on related departments was: (30%) Manufacturing Engineering, (20%) Electrical Engineering, (15%) Petroleum Engineering, (12%) Civil Engineering, (10%) Electronics Engineering, Chemical Engineering, (8%) Automotive and Marine Engineering, (5%) and Mechanical Power and Refrigeration Technology. An interview was also made with the head of industrial training programs at the CTS. The aim was to seek an in-depth information regarding the quality of industrial training programs and suggestion that would improve the standard of such vital program. Interviews with graduate's direct supervisors have been conducted in the Ministry of Electricity and Water and Oil Industry.

The Objective of the Industrial Training Programs.

The objectives of industrial training program as stated in the college plan are to "equip the students with technical, practical and management skills that would be applied in real place". The research showed no sign of industrial involvement in determining the elements embodied in the objectives of such vital program. In fact, industries indicated that they are willing in taking a positive attitude towards forming criteria's that would help in evaluating the success of industrial training programs. It was noted that, the objectives of industrial training program did not indicated the level of information, skills, and attitudes mostly needed by recipients industry. It would be more fruitful, if the departmental supervisors met with students direct supervisors in located industries. This would enhance the capability of students in managing and maintaining the imported technology used in local industry. All interview supervisors in local industries stress on the need of management involvement at the CTS in order to encourage the college supervisors to take a positive action towards strengthening the collaboration with local industries.

The College of Technological Studies Plan.

In examining the CTS plan, several deficiencies have been noted and analysed. There are no specific objectives concerning the enhancement of student's knowledge, skills and attitudes. In addition, no sign for an action plan that would specify the duration of the achievement of certain objectives nor

identifying the department responsible for the implementation and evaluating the quality of outcomes. The plan did not mention the criteria's that would indicate the success or failure of industrial training program. Despite the issue of encouraging collaboration with local industry, particularly in the industrial training programs, there is an obvious lack of concern to consider local industry as an essential partner. An interview with selected heads of departments revealed the lack of skills of setting an appropriate plan that meet the objectives and serve the overall need of country's economy of indigenous manpower. It would be essential to organised a meeting between the CTS supervisors and Industries in order to agree on several issues to enhance the quality of industrial training program. Among which are, the proper duration of the program, the role of both supervisors in the planning, implementing and evaluating the programs, the criteria's used to assess the level of participation and meeting the expected objectives, the methods of evaluation, and any obstacles that hinder the progress of industrial training program.

The Duration of Industrial Training Program.

In the summer term, students would attend industrial training program after completing 29 units. They have to spend seven weeks (4 hours a day and 4 days a week) in industrial allocated premises. Students also would attend a second industrial training program after completing 35 units, and spending 224 hours training. Students were allocated work place based on their specialisation. The number of students varies from each sector (Ministry of Electricity and water and Oil Sector). Recently, the management of the CTS has decided to wave the summer term industrial training program. The research revealed that 65% of the selected students stated that they spend only 30% of the allocated time in industrial premises. The industrial supervisors indicated that students are reluctant to stay the allocated time and period due to their negative attitude towards industrial training programs. Industries blame the CTS supervisors for not taking a serious action towards such attitude. It is worth mentioning that, the CTS management have not considered industries point of view regarding waving the first term industrial training program. Overall, 85% of the selected students disagree with the CTS management decision in regarding the elimination of the first term industrial training program.

Measuring student's perception towards the role of the CTS supervisor in the industrial training program.

An attempt has been made to identify and examine whether the CTS supervisors have emphasis essential issues regarding industrial training program. Among the issues discussed are shown in table (1) below:

| Elements | Agree | Disagree |
|---|-------|----------|
| Clarifying the objectives of industrial training program | 100 | 0 |
| Defining the duration of industrial training programs | 100 | 0 |
| Determining the assessment methods | 100 | 0 |
| Solving problems | 55 | 45 |
| Proper selection work places | 45 | 55 |
| The suitability of machines and tools in work place | 25 | 85 |
| Ensuring safety and healthy work place | 100 | 0 |
| The availability of work manuals | 100 | 0 |
| Coordinating with work place supervisor | 35 | 65 |
| Ensuring students wearing safety and health clothes | 15 | 85 |
| Ensuring students attend work place on time | 10 | 90 |
| Ensuring students acquire required skills | 15 | 85 |
| Enhancing students positive attitude | 10 | 90 |
| Ensuring students using efficiently the right machines and tools | 20 | 80 |
| Taking students comments seriously | 45 | 55 |
| Ensuring that work place supervisors provide assistant to students | 40 | 60 |
| Ensuring that industrial training programs have achieved the expected objectives. | 25 | 75 |

The above findings showed that the majority of students have "disagreed" on the main critical elements regarding the role of the CTS supervisor in industrial training program. 85% of the selected students stated that the machines and tools in workplace are not suitable. All selected students agreed that work place provide safety and health apparatus as well as related manual. However, 85% of the selected students revealed that the CTS supervisor is neglecting students wearing safety and healthy clothes. When asked whether the CTS supervisor ensure students attend work place on time, 90% disagree. In fact, 80% of the selected students has stated that the CTS supervisor is not ensuring that students using efficiently the right machines and tools in work place. When asked whether the CTS supervisor ensure

that students acquired the right skills and attitude, 87% of the selected students found disagree. Only 45% of the selected students agree that the CTS supervisor take students comments seriously, was helpful in clarifying the objectives of the program (100%), defining the program duration (100%), and determining the assessment methods (100%). However, students voice discomfort that the CTS supervisors was reluctant to solve problems (45%) and did not properly selected work place that meet students expectation (55%). In respect to the role of industrial supervisor in proving the right assistant, 60% of the selected students found to disagree. Overall, when ask to indicate whether the CTS supervisor ensured that the industrial training program has met the expected objectives, 70% of the selected students disagree.

Measuring the CTS supervisors views towards industrial training program.

An attempt has been made to interview (telephone interviews) those supervisors responsible for monitoring and assessing industrial training program in the CTS. All selected supervisors stress on the important of industrial training program in shaping students knowledge and skills. However, no sign of attention has been given to enhancing students positive attitudes in working in real work place. When asked whether they are monitoring and assessing student's performance in located industries, all interviewed supervisors gave "positive" answer. However, when asked to mention the name of students direct supervisors in located industry, 80% of the selected supervisors were not sure. All selected supervisors voice complains about students behaviors in local industry in regards students attendance and performance. 50% of the selected supervisors blame industries supervisors for not taking a serious action towards student's absence. In addition, preventing students in using those machines and tools related to their specialization.

Measuring student's perception towards the role of industries supervisors in the industrial training program.

An effort has been made to identify and examine whether the industries supervisors have played an active role in improving the quality of industrial training program. Among the issues discussed are shown in table (2) below:

| Elements | Agree | Disagree |
|--|-------|----------|
| Clarifying the objectives of industrial training program | 100 | 0 |
| Using criteria's for assessing students performance | 50 | 50 |
| The availability of the right number of machines and tools | 30 | 70 |
| The availability of raw materials | 55 | 45 |
| The availability of safety and health procedures | 85 | 15 |
| Ensuring safe and health work environment | 75 | 25 |
| Ensuring students using the right machines and tools | 45 | 55 |
| The diversity in presenting real cases studies | 35 | 65 |
| The availability of notes and manuals | 70 | 30 |
| The coordination with the CTS supervisors | 25 | 75 |
| Ensuring students gain the right skills | 25 | 75 |
| Enhancing the concept of work ethics | 45 | 55 |
| Enhancing communications skills | 35 | 65 |
| Enhancing the concept of team work | 40 | 60 |

The above findings revealed that industries supervisors were helpful in clarifying the objectives of industrial training program (100%), ensuring students wearing health and safety cloths (75%), the availability of manuals and notes (70%), and ensuring healthy and safety work environment (75%). Surprisingly enough, 70% of the selected students confirmed the lack of the right number of machines and tools in work place, 45% indicated the lack of raw materials in work place, 55% not able to use the right machines and tools in work place, 75% ignoring the role of industries supervisors in ensuring students gain the right skills, 55% disagree on stressing on the issue enhancing communications skills and encouraging the concept of team work.

Students (75%) stated that the coordination between the CTS supervisors and industries is below the accepted standard.

Measuring industries supervisor views towards industrial training program.

An effort has been made to investigate the view of industries supervisors towards the quality of industrial training programs. There is a common believe among those interviewed (telephone interviews) that the

majority of students are not eager to learn and/or acquired those skills needed to manage and maintain the technology used in work place. As indicated by a senior supervisor in the oil sector that "students are reluctant to learn and avoid working outdoor and thus prefer desk work". Another view was provided by a projects manager in the Ministry of Municipal t that "students showed negative respond to the information and skills provide and number of students absent is high". A senior officer in Al-Zoor and Doha electrical station both confirmed that the level of student's knowledge in their field of specialisation is below the accepted standards. Surprisingly enough, industries supervisors blame the CTS supervisors for not monitoring and assessing student's behaviour and performance in local industries. An interview was also carried out with local private industry to evaluate student's performance in industrial training program. The majority of those interviewed confirmed that students are not taking such important program seriously. For example, a human resource manager in one of the private company stated "it is a waste of time to send the CTS students in our premises since their behaviour are not improving for years ago".

SUMMARY AND CONCLUSIONS

The role of industrial training programs or sandwich course is highly stressed in related literature. It is where students spend some times in related industry hoping to acquire certain knowledge, skills and attitude. It provides students with the ability to transfer what has been taught in the college into real work practice. Students would have the chance to thoroughly examine their future work place and the expectation required from industries to main highly quality of performance. However, the success of industrial training programs relay on the mentality of those who run the CTS as well as those in related industries. The fact is that managing an academic institution is completely different from vocational and technical institution. In addition, there is a differentiation between running and managing a vocational and technical institution. The research findings provide concrete evidence that the concept of running the CTS is highly applied rather than managing the activities of the CTS. There is no sign for a scientific and practical plan that encompasses those elements related the enhancement of the quality of industrial training program. The relationship between the CTS and related industry seems in most cases an active and not sufficient that would produce a satisfactory outcome. There is no doubt that the issue of sincerely and willingness of the CTS supervisors to execute their duties in a professional manner is highly noted in this research. The majority of those interviewed in the CTS confirmed without doubt that students are gaining the right knowledge and skills in assigned work place. However, when contacted students direct supervisors in work place gave a contradiction view. The majority of selected Industries supervisors express their frustration from student's negative attitude towards learning in work place. The absence of students in workshops and laboratories, resistance to collaborate with their supervisors, inability to read manuals and the lack of basic knowledge of their specialisation are among those symptoms voice by industries supervisors. Industries blame student's supervisors in the CTS as well as their lectures and trainers who from their views" are responsible for the unacceptable level of knowledge, skills and attitude". In addition, the CTS management must dedicate efforts to monitor and assess the quality of industrial training management and hold those responsible for not meeting an acceptable level of outcomes. The CTS management must appreciate and practice the transformation of the country's manpower objectives in reducing dependency on expatriates. Failing to achieve such significant objectives, the country would depend on expatriate for years to come.

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