



Factors Affecting TVET Quality Improvement : A Case Study of Two Public TVET Institutions in Cambodia

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Abstract

The main objective of this study is to explore the factors that affect the TVET quality improvement at two public TVET institutions: National Technical Training Institute (NTTI) and National Polytechnic Institute of Cambodia (NPIC). The study employed a qualitative approach, using in-depth interviews. The study investigated the TVET quality dimensions in terms of students' prior knowledge, teacher academic qualification, teacher motivation, teaching and learning resources as well as the laboratory equipment, funding for TVET, curriculum, teaching competence and industry linkages. The study found out that students' prior knowledge, the availability of qualified teachers, the access to teaching and learning resources and laboratory equipment, the funding for TVET, curriculum, teaching competence and the industry linkages are affecting TVET quality improvement at the NTTI and NPIC.

Keywords : TVET; quality improvement

Introduction

Problem Statement

After the economic crisis, the Royal Government of Cambodia (RGC) has not only taken short-term opportunities for recovery but also shifted Cambodia's economic growth strategy to the next level to diversify the economic base on existing comparative advantages and to upgrade endowments to move up the ladder of comparative advantages of abundant land, a geographically strategic position and a low-cost labor force (World Bank, 2012).

¹ The Rectangular Strategy was first implemented in 2004, and Rectangular Phase II was then updated in 2008. In 2013, the Rectangular Strategy Phase III is the government's major socio-economic development policy agenda for the Fifth Legislature of the National Assembly (2013-2018). Capacity



Due to Cambodia's huge population of young people, young generation's abilities to acquire skills determine the future economic development, technological transformation, and new jobs. The skills of the workforce, which contribute to productivity, competitiveness, employment and more inclusive growth, undeniably affect a nation's performance in economic growth, poverty alleviation, and job creation. Consequently, the government has included the importance of skills acquisition as a part of the Rectangular Strategy for Growth, Employment, Equity and Efficiency.²

In this context, TVET plays a vital role in providing skills training for Cambodia's young labor force. However, the quality of the training provided is still a major concern for Cambodia. For example, only 20% of employers consider TVET graduates fully equipped with the required skills to perform the job and 31% find it difficult to train or upgrade their existing workforce. Moreover, the employers' satisfaction with the relevance of skills TVET graduates have seems very low (World Bank, 2012). Therefore, I would like to conduct my academic research on the factors affecting TVET quality improvement in Cambodia, particularly at two TVET institutions.

Definition of Key Terms

In Cambodia, TVET refers to the process of acquiring the skills, attitudes and knowledge needed to gain employment or self-employment, and to secure that job over a career and a professional life. TVET allows young workforce to begin with basic jobs such as a bricklayer or waiter and through pursuing further part-time studies climb up a career to senior position or management team in construction industries (NTB, 2008). Quality improvement, according to the TVET institutes, refers to the enhancement of the quality of education service and the relevance of the skills offered to the needs of the labor market.

²building and human resources development is one of its four growth pillars (Royal Government of Cambodia, 2004).



Objectives of the Study

The main objective is to explore the factors affecting TVET quality improvement at two prestigious public TVET institutions in terms of their provision of technical training programs. More specifically, this study aims at answering the following question in order to meet the objectives of the study. What are the factors affecting TVET quality improvement in Cambodia?

Significance of the Study

As Cambodia is opening its door to accept the flow of labor force from other ASEAN countries in 2015, it is essential that it improve the capacity and quality of its own skilled workers so that they can compete and survive in a more competitive labor market. Cambodia is now experiencing the boom in young labor force. For example, in 2008 nearly 60% of the population was under the age of 24, making Cambodia one of the most youthful countries in ASEAN, ranking the second after Lao PDR (UNDP, 2010). This has profound implications for Cambodia's education system, especially TVET, whose quality is still problematic.

Therefore, this study is of great importance for several reasons. First, it is more likely that it is the first study on the factors affecting TVET quality improvement in Cambodia. The findings of this research will provide better insights into the quality issues in TVET, and serve as an important reference for the future study on TVET in Cambodia as few researchers have studied TVET in Cambodia. The results will provide some policy implications for policy makers at the Ministry of Labor and Vocational Training (MOLVT); TVET institution directors, teachers, educators and researchers and other TVET stakeholders in designing and formulating policies to improve the quality of TVET, in designing and developing more relevant curriculum, in improving the teaching and learning processes and environment, and in selecting more qualified teachers and students.

An Overview of the Methodology

I conducted the study from August 2, 2013 to September 2, 2013 at two public accredited TVET institutions in Cambodia: NTTI and NPIC, using qualitative methods. It started with the collection of preliminary data from the institutions



and utilized a qualitative approach, which included in-depth interviews employing open-ended and semi-structured questions with deputy director of Academic Affairs at the NTTI and deputy head of Academics Office at NPIC. Moreover, I conducted in-depth interviews with a total of eight teachers: four teachers from the Department of Civil Engineering and Department of Electrical and Electronic Engineering at NTTI, and the other four teachers from the Faculty of Civil Engineering and Faculty of Electrical Engineering at NPIC. I also interviewed twenty-two students majoring in the fields of civil engineering and electrical engineering from the NTTI and NPIC.

Research Findings

Students' Prior Knowledge

The study found out that students with lower grades represent the majority of the total students. Through the comparison of students' past academic performance and present output at the NTTI and NPIC, I found a positive relationship between past performance and the current output at the TVET schools. Students' poor academic backgrounds in pre-university education, especially in important subjects such as mathematics and physics, affect TVET outcome. Six of teachers from the NTTI and NPIC complained that they find it difficult to help the poorly-performed students catch up with the lessons because the students' previous academic background is so poor, and eight out of eleven academically weak students admitted that they have problems in understanding the lectures, especially in mathematics and physics-related subjects (Field Work, 2013).

Most outstanding students are those with good academic background before entering TVET institutes. For example, in the field of electrical engineering, the five outstanding students are the ones who received overall grades of C and D and grades A, B, and C for mathematics and physics from Grade 12 National Exam.

In short, students' previous academic background is found to be affecting the quality improvement of TVET because students with good grades in mathematics and physics tend to perform better than those with lower grades.



The Availability of Qualified Teachers

Teaching force is one of the most important assets of any educational institutions. According to the interviews with deputy director of Academic Affairs at NTTI and deputy head of Academics Office at NPIC, the availability of qualified teachers at two TVET institutions is still a major concern for their long-term survival. The two schools are still lacking highly-qualified teaching staff. They stated that holding bachelor degrees and teaching experience are the only important criterion in hiring part-time teachers because it is hard to find teachers with higher qualification. The deputy head of Academics Office at NPIC stated that the school has difficulties in implementing the curriculum in accordance with the already-planned order. For example, students sometimes have to wait until when they reach their fourth year to study the subjects in which they are supposed to learn in the third year because the school cannot find the specialized teachers to teach. The school cannot afford to send many teachers to attend long courses abroad because if more are sent, the school will not have enough teachers to teach students. Moreover, the deputy director at NTTI echoed a similar issue, mentioning that it is very hard to find specialized teachers, especially for third and fourth-year classes. She further mentioned that the knowledge of the subject matter of the internal teachers vary as teachers come from different educational backgrounds, and the school has no choice but to accept those teachers as they are assigned by the MOLVT (Field Work, 2013).

Concerning this issue, nine student respondents from NPIC expressed their dissatisfaction with new teachers, stating that the new teachers do not know how to transfer the knowledge because they have not attended teaching training program and have just graduated. Moreover, there are teachers who teach two subjects in one class at the same time. In addition, eight out of eleven students from NTTI said that a few teachers are teaching the subjects they do not have expertise in, and frequently tend to ignore students' questions. For example, they are teaching Technical English, while they have background in General English. They translate technical words the way they do in General English classes (Field Work, 2013). The availability of qualified teachers is limited and is found to have been one of the factors affecting TVET quality improvement at the NTTI and NPIC



The Access to Teaching and Learning Resources and Laboratory Equipment

The availability and quality of teaching and learning resources are one of the important factors affecting TVET quality improvement in Cambodia. The respondents from NPIC seem to be satisfied with teaching materials such as LCDs and OHPs, whereas the access to teaching material is very limited at NTTI. NPIC teachers stated that LCDs and OHPs are usually available for use; however, three out of four teacher participants at NTTI stated that they sometimes have to change their teaching methods because of the unavailability of LCDs or OHPs. Moreover, they usually have to use the pictures or videos of some teaching materials to show students because they are not available at school (Field Work, 2013).

The limited access to resource books, computer laboratories and Internet is a serious issue for the two TVET schools. According to the interviews, the deputy director of Academic Affairs at NTTI and deputy head of Academics Office at NPIC admitted that the schools cannot afford to buy new books. Most of the books are donated by NGOs and they are out of date. Moreover, most of the books are written in English or Korean, and only around 20% of the books in the libraries are in Khmer. Their libraries are so small and not well-equipped. Teachers showed their frustration about the lack of modern textbooks. Seven out of eight teacher respondents stated they do not usually go to the libraries because most books are out of date and so few books are written in native language. Moreover, eighteen of the students from the NTTI and NPIC expressed a strong dissatisfaction with the lack of resource books, access to the computer laboratories and fast Internet service. They added that it is hard for them to find good and up-to-date books in libraries. Students are not allowed to use the computer laboratories after the class hours and the Internet is so slow; sometimes it cannot be accessible (Field Work, 2013).

Because practical hands-on work is extremely essential for students in TVET institutions in acquiring skills, equipment for workshops and laboratories is initial prerequisite for TVET institutions to ensure the quality of training and proper functioning. According to my interviews, the deputy director of Academic Affairs and deputy head of Academics Office admitted that their institutes are encountering the very limited access to equipment for laboratories and workshops. However, the issues seem more serious at NTTI. The deputy director from NTTI stated that



due to a growing number of students, the needs for equipment have become greater (Field Work, 2013).

The deputy head of Academics Office said that some broken equipment cannot be repaired because spare parts are not available in the country. Two teachers at NPIC echoed a similar problem, saying that sometimes they have to use the pictures or videos for the modern equipment when they teach their students about some new equipment because it is hard to find the same equipment used in the industries. Eight of the student respondents at NPIC stated that sometimes they have to bring their own equipment such as brick trowels, mortar baskets, water meters, screwdrivers, land sample and lamps because they are told the equipment was broken by their seniors. Some equipment remains untouched and one surveying machine is used by more than 20 students. The rest of the respondents at NPIC expressed their satisfaction with the equipment, saying that it is acceptable compared to that in other schools (Field Work, 2013).

According to the results of the interviews, nine of the student respondents at NTTI expressed their strong dissatisfaction with the equipment in the workshops and laboratories. They said they have to bring the equipment such as lamps, electrical pens, conductors, and transformers from home. Moreover, they sometimes have to work in a group of 10 students and do not have chances to practice. Sometimes they can learn only one part of the practice, while the other part is completed by other students in another group. Most of the equipment is very old and what they usually do for practice is laying bricks from second to fourth year (Field Work, 2013). The access to teaching and learning materials at NTTI and NPIC, particularly up-to-date textbooks and resource books in native language, and the laboratory equipment is found to have affected TVET quality improvement.

Funding for TVET

The study found out that the total public expenditure for TVET has increased over the years; however, it is still very low compared with that of neighboring countries. For example, between 2002 and 2005, Cambodia allocated 1.9% of its GDP for education sector, while Lao PDR spent 2.3%. Consequently, TVET institutions in Cambodia face a serious lack of funding to support their operation.



TVET institutions that provide long courses heavily depend on the revenues generated from tuition fees, covering between 70 and 90% of annual expenditure.

The lack of funding is also one of the serious issues NTTI and NPIC have encountered. The deputy director of Academic Affairs at NTTI and deputy head of Academics Office at NPIC admitted that the government only provides salary supports to its full-time staff and utility payments. They are not able to purchase modern equipment for their laboratories and textbooks and journal articles for their libraries because they are so expensive. Moreover, they cannot afford to pay high salaries for qualified and experienced part-time teachers as other universities do. Financial support plays a vital role in the survival of TVET schools in general and improvement of the quality of education they provide as it can help cover the annual expenditure and TVET institutions invest in hiring qualified and experienced teachers from the industries and purchasing other necessary resources for the training. Therefore, the lack of funding is found to have influenced the quality improvement of TVET.

Curriculum

It is widely accepted that a modern, high-quality curriculum can help enhance the overall education quality and its relevance to meet the students' and societal needs. The relevance of curriculum at the NTTI and NPIC is still a major concern as all of the employers who participated in this study expressed their strong dissatisfaction about the irrelevance of TVET curriculum; moreover, the employers are still not satisfied with the working behaviors of most graduates and find it difficult to train them to work in teams, saying that a few of the newly-recruited engineers tend to look down on their team members who come from poorer educational backgrounds and lower social classes.

All of the respondents dealing with civil engineers stated that: "Procurement – mainly dealt with the preparation for project bidding - is one of the skills that we really need from our engineers, but it is not taught at the two institutes". The three employers working with electrical engineers also maintained that the following skills such as plumbing system, access control system, building management system, programmable logic controller, ducting system and fire-fighting system cannot be found from NTTI and NPIC graduates (Field Work, 2013). Moreover, the



employers also expressed their dissatisfaction with the capacities of the graduates' performance of some important skills for civil engineers, which are taught at schools but do not meet the industry requirements.

The lack of soft skills³ among NTTI and NPIC graduates is also another concern for employers. It is a good reflection of NTTI and NPIC curricula in which soft skills are not included. The employers of civil and electrical engineers showed their frustration toward to the lack of soft skills among their employees. Four employers stated that the graduates from NTTI and NPIC are weak in team work; it takes time, sometimes up to one year, for new staff to work well in groups. The employers still need to train the new employees about team work because they cannot deal with the problems well. Curriculum plays a vital role in producing qualified skilled workers with relevant knowledge and skills to the industry demands. Regularly-updated curriculum with the participation from the employer sides can help ensure the relevance of skills the training programs provide to the needs of the firms. Therefore, the curriculum, especially its irrelevance, is found to have been affecting TVET quality improvement.

Teaching Competence

Although improvement in teacher's use of teaching method has been witnessed, it is still not satisfactory due to the fact that more than half of all TVET teachers still employ teacher-centered approach and not all teachers have attended the teacher training program. According to the interviews, eighteen of the student respondents from two schools stated that around 50% of the teachers are still using teacher-centered approach. Students have few chances to engage in the teaching and learning processes. The teachers just keep talking all the time. The quality of classroom management is found to be improving but still a concern. According to the interviews, all student respondents from the NTTI and NPIC stated every semester between 30 and 40% of the teachers do not know how to manage the classes. They stated that their classrooms are sometimes very noisy because some students, especially those at the back, are talking while the teachers

³ Soft skills are defined as thinking skills, both critical and creative, and behavioral skills, including perseverance, self discipline and teamwork (The World Bank, 2006 as cited in UNDP, 2010, p. 50).



are explaining. Teachers just ignore them and continue their teaching (Field Work, 2013).

Another important aspect is teacher's preparation. Generally, the teacher preparation is good but there are still some problems. All of the students are disappointed with 30% of the teachers whose lesson preparation is so poor. They explained that experienced and old teachers only follow the contents in the course books, and rarely provide extra documents. They just open book and teach. They seem to be very busy and come to class late, sometimes 30 minutes late. Teachers use other teachers' documents or slides to teach, and they sometimes spend some time to find out what is wrong with the lessons when students raise questions. Therefore, the use of teaching method is found to be still problematic at NTTI and NPIC and to be one of the factors affecting the TVET outcome.

Industry Linkages

The study found out the linkages with the industries is still very weak. The deputy director of Academic Affairs and deputy head of Academics Office stated that that NTTI and NPIC have never received equipment or fund from the industries to conduct the research.

Moreover, due to the growing number of students, it is very difficult to find companies for students' internships. Those employers think that it is a waste of their time and only accept a small number of students for internship each year. Usually, the schools let their students find the companies for themselves first and if they cannot, the institutes will try to find the companies for them. Moreover, the employers have never participated in the process of developing the curriculum although the schools tried to invite them. Therefore, the industry linkage is found to have affected the quality improvement of TVET in Cambodia.

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