

Public-Private Partnerships (PPPs) in Technical Vocational Education and Training (TVET): Lessons Learned from Singapore and U.S.A. and Implications for Public Management in Thailand

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Abstract

This paper presents a review of the research literature on public-private partnerships (PPPs) in the field of technical vocational education and training in Singapore and the U.S.A., two countries selected due to their notably successful programs in this domain. The paper also examines the current role of PPPs in Thai technical education and training as well as points out the urgency of strengthening this mechanism to meet workforce needs in the industrial sector with a national strategy. Finally, the paper discusses the lessons learned from the selected cases in Singapore and the U.S.A. and the implications for policies in Thailand. The paper deploys a qualitative research methodology with data collection based on literature reviews, round-table discussions, and in-depth interviews.

Research findings indicate that Thailand is in an early stage of implementing PPPs to strengthen Technical Vocational Education and Training (TVET) in comparison to the two case studies from Singapore and the U.S.A. Key recommendations derived from the study include strengthening government leadership and practitioners, decentralization and empowerment of local actors, active engagement of private stakeholders, long-term strategic planning and implementation of human resource development which aligns with national social and industrial master plan, and instilling a culture of evidence-based policies and practices.

Keywords: Public private partnerships, technical vocational education and training, lessons learned, Singapore, U.S.A., policy implications

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ความร่วมมือระหว่างภาครัฐและเอกชนด้านการจัดการศึกษาและฝึกอบรมเชิงเทคนิคและอาชีพ บทเรียนจากสิงคโปร์และสหรัฐอเมริกาสู่ทิศทางการปรับประยุกต์ในการบริหารงานภาครัฐของไทย

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บทคัดย่อ

บทความนี้เป็นการทบทวนแนวคิดและแนวทางการสร้างความร่วมมือระหว่างภาครัฐและภาคเอกชนด้านการจัดการศึกษาและฝึกอบรมเชิงเทคนิคและอาชีพ ในประเทศสิงคโปร์และสหรัฐอเมริกา ที่ประสบความสำเร็จอย่างโดดเด่นอันเป็นที่ยอมรับในวงกว้าง รวมทั้งศึกษาสถานภาพเรื่องบทบาทของความร่วมมือระหว่างภาครัฐและภาคเอกชนในการจัดการศึกษาและฝึกอบรมเชิงเทคนิคและอาชีพในประเทศไทย ในประเด็นที่ประเทศควรเร่งกำหนดยุทธศาสตร์เพื่อปรับเปลี่ยนกลไกดังกล่าวให้ตอบสนองต่อความต้องการด้านกำลังคนของภาคอุตสาหกรรม เพื่อวิเคราะห์บทเรียนจากประเทศสิงคโปร์และสหรัฐอเมริกาและนำแนวคิดที่เหมาะสมมาปรับประยุกต์ใช้กับการดำเนินนโยบายของประเทศต่อไป ระเบียบวิธีการศึกษาใช้วิธีวิจัยเชิงคุณภาพ โดยการทบทวนวรรณกรรม การสังเกตจากการร่วมประชุมอภิปรายและการสัมภาษณ์เชิงลึกกับผู้มีส่วนเกี่ยวข้อง

ผลการวิจัยพบว่า หากเทียบกับกรณีศึกษาจากประเทศสิงคโปร์และสหรัฐอเมริกา ประเทศไทยจัดอยู่ในระยะเริ่มต้นของการสร้างความร่วมมือระหว่างภาครัฐและภาคเอกชนเพื่อสร้างความเข้มแข็งด้านการจัดการศึกษาและฝึกอบรมด้านเทคนิคและอาชีพ ข้อเสนอแนะที่สังเคราะห์ได้จากงานวิจัยในครั้งนี้คือ รัฐบาลควรเร่งพัฒนาศักยภาพด้านภาวะผู้นำ และบุคลากรที่เป็นผู้ปฏิบัติ การกระจายอำนาจการมอบอำนาจแก่ผู้ปฏิบัติในระดับท้องถิ่น สร้างการมีส่วนร่วมจากผู้มีส่วนได้ส่วนเสียในภาคเอกชน การพัฒนาและดำเนินตามแผนกลยุทธ์ด้านการพัฒนาทรัพยากรมนุษย์ในระยะยาวที่สอดคล้องกับแผนแม่บทการพัฒนาสังคมและอุตสาหกรรม รวมถึงการสร้างวัฒนธรรมในการพัฒนานโยบายและแนวปฏิบัติที่มีประสิทธิภาพมาสนับสนุน

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Introduction

Public private partnerships (PPPs) have been implemented worldwide in various policy sectors to improve public service efficiency, enhance transparency, and strengthen engagement by stakeholders as part of democratic governance. Public private partnership initiatives to improve Technical Vocational Education and Training (TVET) have been widely used in numerous countries for many decades. Career academies in Brazil and the United States, the dual TVET system in Germany, Netherlands and Hungary exemplify the programs in which collective and collaborative efforts from multi-sectors have aimed at improving skills development for the workforce. In Thailand, the shortage of skilled workers is a major challenge and has been recently addressed by companies and government agencies through PPP initiatives. These initiatives seek to build the skills of students so they may become qualified members of the workforce for particular industries, but they are in their infancy. These partnerships are formed through bilateral agreements between individual employers and educational institutes. The employers may contribute cash support, technical knowledge, paid internships, mentors, machinery and equipment for students to use, and sometimes skilled technicians to teach. During the past few years, a new form of partnership has been formed by clusters of similar industries such as the petrochemical sector or automotive sector working together with schools. These clusters share similar shortages of skilled workers and face difficulties in recruiting qualified workers. The partnerships have been initiated to raise the quantity and quality of the pool of skilled workers available for their industries.

In spite of the existence of these new partnerships, the literature related to PPPs in education focuses more on implementation and less on how institutional reasoning, partners' roles and responsibilities, and partnership goals have evolved over time. It is important to examine how the institutional settings of successful PPPs in TVET vary across different context and over time in Thailand and in the U.S.A. Moreover, by examining how key players interact and share resources to achieve common goals and how variations affect outcomes will lead to lessons learned about efficient resource mobilization.

Some scholars have posed challenges to the implementation of PPPs. Hodge, Greve and Boardman (2010: 156) point out that one of the major challenges to PPPs are their compatibility with the public governance framework. Therefore, this study has four objectives. First, to describe and analyze the process of PPPs for vocational education and training. Second, to explore variations in PPPs across different institutional settings for vocational education and training. Third, to identify factors that enables a partnership to succeed. Fourth, to understand the requirements for successful PPPs for TVET to succeed, and know how to sustain effective partnerships. This understanding will contribute to maximum resource mobilization in Thailand to develop the workforce that matches industry needs.

This paper is divided into four parts: the first part defines and gives the background of public and private partnerships; the second part examines the cases of PPPs in TVET in Singapore and in the U.S.A.; the third part describes some of existing PPP situation in Thailand; and the last part presents the lessons learned and their implications for public management in Thailand.

Methodology

The study will analyze literature reviews and use a multiple-case approach to study PPPs as this approach offers contrasting situations in which to test theory and is more robust than a single-case study (Yin, 2014). Literature reviews of the Singapore and the U.S.A. cases were conducted recently and both were found to be successful examples of using PPPs in TVET. In-depth interview were conducted with eighteen informants from government officials, project managers, Human Resource (HR) managers, faculty members, principals, teachers, and students who are involved in the programs.

Definition and background of Public-Private Partnerships

The meaning of public private partnership (PPP) is broad, ranging from co-sponsorship to subcontracting to joint development or provision of products or services. Hodge, Greve, and Boardman (2010: 4) define it as “[c]ooperative institutional arrangements between public and private sector actors”. The approach varies depending on the goals, context and formal structures (Dingwall et al., 2013). The goals of PPP include provision of goods and public services in many sectors including education, infrastructure, health care, energy, telecommunication, and utilities. Some aspects of PPPs are defined by international development organizations. The Organisation for Economic Co-operation and Development (OECD) defines PPP as “a long term agreement between the government and a private partner where the service delivery objectives of the government are aligned with the profit objectives of the private partner”. The European Commission (EC) (2003: 15-16) defines PPP as “a partnership between the public and private sectors for the purpose of delivering a project or a service traditionally provided by the public sector.”

The EC (2003) identifies a number of different types of PPPs dependent on the amount of the risk and responsibility to be transferred from the public to the private partner. In Figure 1, under traditional public sector procurement, the contractor would bear full responsibility of operating a project but the level of project responsibility transferred to the private partners’ changes incrementally through Build-Operate-Transfer (BOT), Design-Build-Finance-Operate Concession, and Build-Own-Operate (BOO) type of partnerships.

Patrinos et al. (2009) classifies PPPs in education by the level of private engagement assuming that the public sector is the main source of funding. It can be observed that this classification of PPPs in education is similar to the PPP classification used by the EC, shown in Figure 1, in terms of the responsibility for the service. Figure 1 shows that partnerships in which the public sector finances and runs the schools are classified as low PPP while situations in which the schools are managed by the

private sector and most of the funding comes from the government or the funding follows students as in voucher systems are considered high PPP.

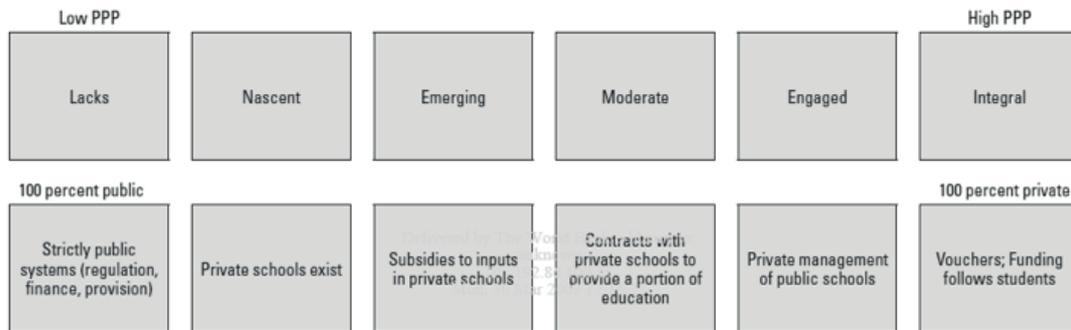


Figure 1. The continuum of public-private partnerships in education

Source: Patrinos et al. (2009: 16)

This paper focuses exploring how some countries successfully engage participation from private sector in managing education resulting in effective resource mobilization and improvement of educational quality to meet the workforce demand. These resources are not limited to funding but also cover know-how and technology, technical assistance, mentorships and career inspiration for learners to be developed as qualified workforce in the future.

Public Private Partnerships for Technical Vocational Education and Training in Selected Countries: Singapore and the U.S.A.

Vocational education and training in Singapore and the U.S.A. have been selected as case studies because of their unique approaches to institutionalizing PPPs mechanism in two different settings. Singapore, a highly centralized government, has successfully transformed technical education institutions to be world-class public organizations in developing high-performing talents. In this research, The Institute of Technical Education (ITE) has been selected as the case study due to its extensive level of PPP adoption. Its outstanding success is attested by multiple awards such as the winner of the 2007 Harvard-IBM Innovations Awards in Transforming Government, the

2001 Public Service Premier Award in Singapore, and Public Service Best Practice Award in Stakeholder Engagement. The U.S.A.'s Career Academies program, implemented in a decentralized government system, has achieved in collaboratively working with local stakeholders especially private sectors at state and district level to contribute knowledge and resources for an improvement of vocational and technical education. The program has demonstrated a significant impact on the increase of student earnings through a renowned fifteen-year long and rigorous research project undertaken by MDRC (formerly Manpower Demonstration Research Corporation). Therefore, it is interesting to explore how Singapore and the U.S.A. have developed strategies and have implemented successful PPP mechanisms to improve their public governance which leads to significant impacts on program beneficiaries.

Singapore: Institute of Technical Education (ITE)

The Institute of Technical Education (ITE) in Singapore was established in 1992 under the Ministry of Education. It is the primary provider of career and technical education in Singapore as well as the key developer of national skills standards and certification. Each year, approximately twenty-five percent of the students graduating from secondary education or approximately 13,000 students, enroll in this institute. In January 2014, ITE's enrollment was 28,742 and eighty-four percent of these students graduated. Currently, it has a staff of approximately 2,500 of which two-thirds are academic faculty (ITE, 2014: 13). Besides its full-time programs, ITE also offers part-time students modular curricula.

The Singaporean government has made a large investment in building ITE's infrastructure and developing personalized learning programs that attract students. The three ITE campuses are located close to Singapore's major industrial parks so students can conveniently be transported to places of work. Its high success rate depends on collaboration with the companies that participate in governance, fund raising, and program design at ITE. These three aspects of the partnerships can be summarized as follows:

Governance

ITE has a unique governance model. Currently chaired by the Chairman of Jurong Engineering Ltd, half of the twenty member board of governors represent corporate partners. Its three colleges each serve approximately 7,200 students. The ITE headquarters oversees policy formulation, curriculum development, student intake, examinations, quality assurance, and the consistency of standards across the colleges.

Fund Raising

ITE has used a number of incentive strategies to attract funding from different entities to sustain its operations. It set up the ITE Education Fund with the status of an approved Institute of Public Character (IPC) which is governed by a Management Committee. The Education Fund is authorized to issue donation receipts to contributors for tax deductions up to 2.5 times the value of the donations. A donation of above S\$100 will be recognized via the ITE webpage while donation amounts over S\$5,000 will be recognized on both the webpage and on the ITE Donors Wall located at the ITE Headquarters. In addition, since 2010, the government of Prime Minister Lee Hsien Loong has provided matching grants for every dollar ITE has raised from private donors. Success stories about the students receiving scholarships from different donors are featured in ITE brochures which help attract additional donors. These strategies have enabled ITE to acquire funds from many stakeholders on a continuing basis.

Program Design

ITE programs involve the private sector in a number of ways which is illustrated in the following program components.

Centers of Technology and Centers of Excellence: ITE collaborates with its industrial partners to establish centers and certification programs. ITE assures learners that the designed curricula are based on appropriate job analysis and are aligned with industry needs and standards.

Traineeships: ITE partners with employers who are interested in recruiting secondary schools graduates with appropriate skills training to enroll in ITE designed and arranged programs that will lead to nationally recognized ITE certification. The program includes both on-the-job training at a company's site and off-the-job training conducted by ITE or an ITE approved training center on released days.

Approved Training Centers: ITE provides opportunities for employers to be qualified as approved training centers and provides advice on facilities and equipment set up, course design, curriculum and testing development, assistance for companies' trainers on pedagogical and instructional skills, coaching skills, and planning and implementation of on-the-job training.

Certified On-The-Job-Training Centers: ITE provides technical assistance to help employers certify that employees meet their on-the-job training standards.

Industry Projects: ITE offers companies with services to develop new products or solutions using the latest technology and collaborating with ITE staff and personnel in its different schools.

Career Service Centers: ITE supports its students and graduates with career guidance and recruitment services which help them match their skills and qualification with the right market.

Training Grant Funding: companies investing in sponsoring on-the-job training or organizing off-the-job training at the company's approved training centers are entitled to receive four hundred percent tax deductions/allowances for up to S\$400,000 of expenditure per year. If the training is not accredited by Workforce Development Agency (WDA) nor approved or certified by ITE, the maximum claim would be only S\$10,000 per year.

Success Factors

ITE's success stems not only from careful management of the Institute but also from other factors which need to be taken into account in assessing vocational education and training in Singapore. Tucker (2012: 39-42) identifies the key factors as follows.

Good government: Lee Kuan Yew has developed Singapore's leadership by recruiting the best and brightest Singaporeans from among high school graduates with the highest potential and providing them with government scholarships to study in the finest universities in the world under the condition that they return to help run the government. Moreover, these officials are highly motivated as they receive decent compensation. The senior ministers are paid a package of S\$2 million a year. With such strong incentives, the government is able to retain talented individuals in the government and reduce the temptation for corruption. Through rotation from ministry to ministry, these leaders learn to work as a team with a shared vision. The high quality of Singaporean government officials is reflected in their shared strategic vision, careful decision-making, and the implementation of well-planned actions based on long-term and in-depth experience in their fields.

Political stability: The leadership of the dominant party, the People's Action Party (PAP), has provided the country with a unified, long-term outlook across the full range of development areas.

Coherent planning: All of the relevant agencies including the Ministry of Education, Ministry of Trade and Industry, Ministry of Manpower, the Economic Development Board (EDB), and WDA work collaboratively to develop coordinated and coherent plans that are aligned with the overall national development strategy. Most importantly, TVET is closely linked with economic development priorities.

A strong education system: Singapore has built a world-class compulsory education system. Even the graduates in the lowest quartile of performance who enter the ITE possess skills superior to the median level of performance of the OECD student population.

The “Factory School” model: By basing the TVET system on this model, Singapore is able to offer state-of-the-art training that meets industrial standards and offers students challenges similar to those that they will face in the real workplace.

Strong linkages with business: Singapore requires faculty members at ITE to work periodically in a company operating in the same field as their teaching disciplines; this allows them to up-to-date their knowledge and skills to the level required by the industry. Moreover, by involving employers in TVET goal-setting and program design, setting of occupation standards, assessment of candidates for certification, and supply of contemporary equipment and technology for instruction and training, Singapore maintains the excellence of its TVET programs.

Rebranding of TVET: By making a large investment of resources and carefully planning and executing public relations campaigns, Singapore has shifted the image of vocational education. Once perceived as the “dumping ground” of education, TVET is now regarded as a valued and respected option for students.

Meritocracy and support: Even students who show the least academic potential are valued and provided with high quality opportunities. The Singaporean government shows it values their potential and invests in their development to help them reach national standards and expectations.

A commitment to implementation: The Singaporean government is committed to translating policies into well-planned actions. Government officials are perceived as hard-workers who ensure that plans are efficiently executed.

In summary, the context in Singapore is different from Thailand in a number of ways. The size of its population is one of the major differences. However, its remarkable success and the basic principles that underlie it should not be ignored; many countries including Thailand have not yet achieved the strong leadership and effective public administration which has led Singapore to achieve its goals and become a global leader in economic and social development.

U.S.A. – Career Academies

The United States has not had the kind of systematic success at improving TVET that Singapore has experienced, but the Career Academies model launched in the U.S.A. over forty years ago has demonstrated its effectiveness. Career Academies have improved student outcomes during and after high school. Stern et al. (2010: 6) stated that by 2010, there were over seven thousand career academies in the U.S.A. with over one million students enrolled. According to the National Center for Education Statistics, a Career Academy is “a multi-year program in which the curriculum integrates academic and career/technical education content organized around one or more broad career themes.”

Program Structure

Career Academies were first introduced to reduce the student drop out rate and provide better vocational preparation. But they have taken on a broader mission, preparing students for enrollment in four-year colleges as well as the workplace. The designs of Career Academies vary widely, depending on the interests of the employers who are partnering with the schools, the job opportunities in the community, and the interests of the student population. The program funded by the state of California, for example, requires three academic courses each year in grades ten and eleven and one to three academic classes in grade twelve, together with career-related courses each year. The National Academy Foundation (NAF), a non-profit group that helps communities develop academies, usually focuses on the curriculum in grades eleven to twelve but there are some individual NAF academies found to also focus on grade ten. And there also are career academies that include community college partners and offer programs from grade ten to fourteen (Stern et al., 2010: 6-7).

Among the unique characteristics of Career Academies is that they offer students an introduction into promising career fields – health, engineering, technology, law enforcement, and so on – as well as continuing their academic development. Career Academy programs are usually developed in occupational fields that are attractive to students and which also attract support from local employers in the field. For a Career

Academy to be successful, employers must be willing to provide financial and technical support as well as serving as sponsors and as advisory committee members and providing speakers, mentors, internships, field trips, and sometimes faculty for the programs. The selected field should be in an emerging and healthy industry that is creating jobs. This ensures that some students will be able to find job opportunities after they graduate from the program while others may continue postsecondary education in the particular field.

Program breadth is another important aspect of successful Career Academies. If the career field is too narrow, the career choices for students will be limited; if the field is too broad, there may be problems in curriculum design and identification of relevant and interested employers. Effective Career Academies find a balance between the opportunities created for students and the needs of a local industry (Brand, 2009).

Funding and Legislation to Support PPP mechanism

Career Academies vary in their sources of funding. According to the U.S. Department of Education's Small Learning Communities (SLC) Awards Database, some SLC grants were used to support Career Academies. In California and other states, Career Academies have received state funding to cover development costs. And many Career Academies, perhaps most, have received public funding from local school districts. However, most Career Academies have received support from local employers or business groups. For example, the Philadelphia Academies mobilized contributions from corporate funding and resources to support development while the city school district supplies oversight, teachers, and classrooms.

Federal legislation has also been passed to support the replication of the Career Academies including amendments to the Perkins Act which supports vocational education. It is worthwhile to explore how the Perkins Act has encouraged states and local school districts to implement high-quality programs. Brand (2009) notes that Career Academies were endorsed by the Carl D. Perkins Career and Technical Education Act, or the Perkins Act, when it was renewed in 2006 to emphasize the linkage between academic and career-technical instruction. Fiscus (2008: 17) stated that the Carl D.

Perkins Career and Technical Education Act of 2006 is the primary vehicle through which federal support for vocational-technical education is distributed to states, local school districts, and postsecondary institutions.

The Perkins Act promotes high-quality career and technical education programs with the following expected features. Firstly, the funds that states receive have to be divided with 85 percent for use by local actors and the remaining fifteen percent going to states to implement local activities under leadership and administration categories that benefit the career technical education (CTE) program. Secondly, the grants funded by states should go to consortia of local education agencies (LEAs), post-secondary institutes, and employers. These stakeholders have to be involved in the development of a plan which states have to submit to the Secretary of Education detailing how they will use Perkins funds. At least one LEA which serves a high-concentration of students from low-income families must be included. Post-secondary institutions must offer two-year degrees. Other partners could be employers, industry associations, labor organizations, public-private workforce entities, and other institutions including research universities.

Furthermore, to receive Perkins funding, each state must raise private sector resources to meet a matching requirement. This matching requirement could be cash or in-kind resources such as equipment, training facilities, start-up capital, and technical assistance. Also, the distribution of Perkins funds must be based on competition, and allocated to those consortia which demonstrate the ability to implement high-quality CTE programs for high-growth industries and for high-demand occupations identified by the state and be available for all students, regardless of background. Finally, the state should provide technical assistance to the consortia to ensure equitable opportunities in accessing the funds. Moreover, program data system collected at the state level should enable the use of performance-based funding in which the awarded consortia demonstrate their programs impact student outcomes and close performance gaps across student subgroups.

By setting up this type of funding mechanism, states can encourage local actors to implement programs that have higher impacts on student outcomes and contribute to equitable access to quality career technical education program. Moreover, it helps create a results-based culture which leads to continual improvement of CTE systems.

Implementation Process

It is interesting to observe that the implementation of Career Academies involves private stakeholders at different levels. They play significant roles in ensuring that the programs meet the workforce demand of the engaged employers while aligning the programs with the development needs defined by the state. These processes of participation may include forming an advisory board, identifying/preparing academic staff, coordinating the academy with the high school, developing curriculum, recruiting and selecting students, preparing facilities and equipment, planning motivational activities, business speakers and field trip programs.

In sum, there are lessons to be learned from the how Career Academies have evolved over forty years of implementation in the U.S.A. Apparently, the success of Career Academies is connected to the decentralization of education in the U.S.A., and the empowerment of states and local school districts. However, it is apparent that the strong involvement of relevant local stakeholders – public and private – has been shaped through a well-planned federal funding scheme that defines the conditions that contribute to the development of high-performing programs together supporting technical assistance by states. This cannot happen without good information management systems with data aggregated at the state level which enables state officials to monitor performance of the awarded programs over time.

Educational Context and Public Private Partnerships in Thailand

The Thai context is both similar to and different from that of Singapore and the U.S.A., with lessons that can be drawn from these two aforementioned cases that might be applied to PPPs in Thailand. The rationale for strengthening PPPs in Thailand, particularly in TVET, is based on extensive literature reviews, round-table discussions,

and in-depth interviews. PPPs seem to offer a viable mechanism for strengthening vocational and technical education and training. The major reasons for promoting PPPs are outlined below:

First, in Thailand, improving the quality and efficiency of education has been one of the key priorities for government over the past decade. Amidst rapid industrial growth especially in manufacturing such as the automotive and energy sectors, Thailand has suffered from a serious shortage of skilled workers as well as a skills mismatch between employer needs and the skills of new graduates from the educational institutions.

In 2014, the Ministry of Labor disseminated survey questionnaires to 40,431 companies registered with the Social Security Office in twenty-nine industrial sectors in Thailand. The findings indicate that almost all of the key industries (including energy, hospital and health services, logistics, automotive and auto parts, electrical and electronic parts, rubber products, chemical, and food and animal feeds) have faced serious workforce shortages. Over seventy percent of the needed workers in these industries, except hospital and health services, require educational credentials lower than a bachelor degree. For example, in the automotive/auto parts and petrochemical industries, which are the industries requiring high levels of scientific and technological skills, the shortages of labor with vocational and higher vocational/associate degrees accounted for sixty-three and fifty percent of their unmet labor needs. These numbers are not matched by the supply of students graduating from the current education system, with only twenty-nine percent of the total students graduating from vocational and higher vocational education.

The challenge of the addressing the shortages in the skilled workforce has been raised by the World Bank and Thailand Development Research Institute (TDRI), which have both made similar recommendations about involving the private sector to alleviate the problem. The World Bank pointed out the urgency of upgrading workforce skills in Thailand in their recent study “Leading with Ideas: Skills for Growth and Equity in Thailand” (World Bank: 2012) which recommends that Thailand strengthen workforce

skills and enhance innovation through private sector engagement in order to move toward a more knowledge-intensive, innovation-driven economy which would produce higher incomes and promote greater equality. Their recommendation is aligned with the findings of TDRI which were presented in its annual seminar “Revamping the Thai Education System: Quality for All”. TDRI researchers recommended that the mismatch of skills in the workforce needs to be addressed by initiating work-based learning programs. TDRI noted that these programs require the involvement of the private sector to help participants develop skills matching private sector needs.

Second, inefficient management of the current education system is seen by many business leaders as the main obstacle to strengthening career technical education. Inefficiencies have been identified in several areas: the lack of a unified human resources development plan to coordinate efforts of different ministries; an unfair distribution of educational resources across schools with small to medium-sized schools receiving inadequate resources while larger schools receive more; and a lack of accountability for outcomes which leads to too little attention being directed to the quality of teaching and learning.

Lack of collaboration and coordination among different government organizations, especially in terms of education, skill development, and national industrial development are major challenges facing the nation. The lack of coordination of workforce development is reflected in the widening gap between the numbers of students in vocational education programs and those in academic programs; the ratio between the two tracks is thirty-five to sixty-five in spite of the increasing demand for technical workers from emerging industries during the past decade. This gap is exacerbated by low social awareness about the value of vocational education which has discouraged parents and students from pursuing these programs. The low value placed on vocational education is particularly evident among the large schools under the Office of the Basic Education Commission (OBEC) where students focus on being admitted to the universities with minimal understanding of what careers they might want to pursue. Furthermore, many schools administered by OBEC do not encourage

students to pursue vocational education unless they are considered ineligible for academic programs due to poor results or family poverty. Even in small extended opportunity schools or medium-sized schools located in high poverty areas, many teachers under OBEC do not encourage students to enroll in vocational education because they believe that the students will not have stable career paths. As a result, most of the current collaboration between OBEC schools and Office of Vocational Education Commission (OVEC) schools arises from local initiatives undertaken by school principals seeking to motivate students who are not interested in academic education and have a high tendency to drop out.

Resources are distributed among small and medium-sized schools in an inequitable and inefficient manner. Schools serving fewer than five hundred students are responsible for fifty-four percent of all students in Thailand. These primary schools and extended opportunity schools (offering courses from kindergarten to grade nine) have inadequate educational resources in all areas including administrators, teachers, equipment, and facilities. These schools face such serious obstacles that their principals often seek promotion to larger schools. As a result, they lack the dedicated leadership required for school improvement. Many students who attend these schools come from families struggling with poverty and working hard just to survive. Therefore, the students often lack the parental support required to motivate them to learn. Some of these students pursue vocational study after finishing grade nine, and some principals in these schools voluntarily initiate collaboration with local vocational schools to encourage students who are not interested, or judged unable to pursue academic education, to continue their study in vocational education.

Teaching and learning in these smaller schools are heavily dominated by rote memorization and are weakly linked with employability skills. Neither teacher training programs nor the available professional development are providing teachers with the pedagogical content knowledge and teaching practices needed to promote critical and analytical thinking of students. Furthermore, the existing incentives for teachers to improve or to reflect on their practice and the educational quality assurance system do not give sufficient weight to teaching practices which are directly linked to better student learning and performance.

Third, there are some interesting PPP initiatives aimed at strengthening technical and TVET in Thailand that merit close examination. These initiatives fall roughly into three categories: bilateral initiatives, multi-lateral initiatives, and networks. These patterns of partnership are best defined through examples:

Bilateral initiatives are one-on-one partnerships between a school or academic institution and a company or business group. These partnerships may be initiated by either party. One such partnership has been created by Isuzu UNT Co., Ltd. and Samutprakarn Technical College to train students in automotive service skills.

Multilateral initiatives are partnerships between more than one school or academic institution and one or more companies. This type of partnership often is initiated by a group of companies; for example, General Motors (Thailand) Co., Ltd. is collaborating with ten vocational colleges in Thailand to develop the Automotive Service Educational Program (ASEP) that will prepare students at the higher-vocational education level to be qualified technicians. A similar program is the collaboration between the Petrochemical Group consisting of SCG Chemical, PTT Global Chemical, UBE Chemicals Asia, Star Petroleum Refinery, the Federation of Thai Industries (FTI) and the Map Ta Phut Technical College to develop the Vocational Chemical Engineering Practice College (V-CHEPC) targeting students at both the vocational and higher-vocational education levels.

Networks are partnerships between public and private networks. For example, the cooperation between FTI, the Thai Auto Parts Manufacturers Association, the Department of Skill Development, and OVEC to establish a program in automotive and auto parts workforce development would be considered a network. Fifteen vocational colleges are participating in this program together with a group of automotive and auto parts manufacturers led by Mr. Thavorn Chalassathien from Denso (Thailand) Co., Ltd. Moreover, there is a partnership between the National Science Technology and Innovation Policy Office (STI) and OVEC to develop a Science-Based Technology Schools (SBTS) Program. This new program includes five vocational colleges in five regions.

Nevertheless, while concerned educators and far-sighted business leaders have launched these and similar initiatives, their efforts are reaching only a small proportion of the countless numbers of Thai students who need employability skills and these initiatives have not yet led to the broader policy reforms needed to replicate these programs and practices such as making adjustments in the core subjects in the K-12 curriculum in order to more effectively meet the workforce needs of business and industry or providing more effective career guidance in lower secondary schools or changing the time allocations for subjects. At present, schools and other academic institutions do not have the flexibility needed to adjust their curricula to match the demand side. The existing partnerships are not holistic systems that include all of the components required to provide a quality end-to-end education to employment system. This would require establishment of a committee of advisors and a sub-committee for each industry sector, a public relations campaign to promote a more positive image of vocational education, policy planning by academic institutions for workforce development aligned with the demand from each industrial cluster, development of curricula and teaching materials for the actual jobs in each cluster, teacher development programs, assessment systems, internship programs in companies, a process of credit transfer among academic institutions, development of occupational standards and professional qualifications and aligned examinations, a recruitment and selection process, and an evaluation of the program. There is a great deal of work to be done to create an effective TVET system in Thailand.

Lessons Learned and Implications for Thailand

When comparing case studies from Singapore and the U.S.A. with the situation in Thailand, it is clear that Thailand is in an early stage of implementing PPPs to strengthen TVET. The following lessons have been learned from these two cases and below are implications for the reform of Thai education management.

The governance of a workforce development system requires long-term planning and dedicated implementation. Both centralized Singapore and the decentralized U.S.A. have demonstrated that success of workforce development planning relies heavily on the continual involvement of partners especially from the engaged employment sectors. The governing board of ITE in Singapore and State and Local Boards of Education in the U.S.A. play critical roles in developing strategies for skilled workforce development direction at the national and state level respectively. These governing bodies are advised by committees of employers. In Thailand, a committee has been established, according to National Committee on Skill Development and Coordination of Occupational Training under the regulations of the Office of the Prime Minister B.E. 2542 (1999). This national committee is chaired by the Prime Minister with the Minister of Labor serving as the vice chairman. The membership includes the permanent secretaries of fourteen ministries and representatives from significant agencies and organizations such as the National Economic and Social Development Board, TDRI, the Chamber of Commerce, and the Federation of Thai Industries. Moreover, the Director General of the Department of Skill Development serves as the secretary of the committee. This committee aims to coordinate all government efforts to promote and to align them with national policies and the economic and social development plan. Sub-committees have been set up for major industries to formulate strategies and to implement a plan at the industry level. In addition, provincial committees chaired by the governors have been established to ensure that implementation is carried out. These existing mechanisms are an important first step, and could be leveraged as the platform for ongoing collaboration between the public-private sectors to strengthen workforce development policies and programming.

Strategic planning for human resource development must be in alignment with the development stage of the nation. In both the Singapore and U.S. cases, priorities are placed on upgrading people from the bottom of the economic pyramid to be better off. Both ITE and Career Academies are used by their governments to make serious and continued efforts to address inequities by targeting low-performing students and upgrading their skills to improve their long-term livelihoods. In Thailand, the human

resource development budget has not been equitably allocated to serve the majority of the people. The Department of Skills Development (DSD) and vocational education institutes receive less than five percent of the total national budget allocated to basic education, vocational education, higher education, and workforce development combined. In particular with DSD, only 1,495 million baht was allocated to this agency which has the critical mission of upgrading the skills of a workforce of more than thirty-eight million people. Interestingly, higher education which serves more affluent students was allocated nearly twenty-five percent of the budget. It is necessary to review these allocations and determine how the education and human resource development budget can be used efficiently to reduce poverty. Gaps in access to training might be addressed by monitoring budget allocations and spending and focusing on investing where there are proven results and impact.

The planning should be driven by both social goals and industrial demands aligned with the national economic development strategy. This national strategy has to take into consideration the direction that Thailand wants to pursue. Based on a speech given by the Minister of Science and Technology at the National Reform Council meeting on 27th April, the Thai government has made considerable effort to move the country out of the middle income trap in which the majority of the workforce possess low and medium levels of skills. It is essential that the government invest in upgrading the workforce through multiple channels. Moreover, multiple industries which require highly skilled workers need more support. Resources must be shifted from preparation of workers for labor-intensive industries to those requiring highly skilled workers. New incentive schemes must be implemented to promote industries that have long-term plans to upgrade the skills of their workers to drive the country into an innovation-driven economic development stage.

Decentralization of decision-making and the empowerment of local public agencies to work with the private sector are essential steps in this process. By allocating funds to incentivize PPPs for skill development programming, the central government can promote more efficient and effective use of resources. Government agencies have

used this approach in both Singapore and the U.S.A. In Thailand, education funding has not been decentralized to the provincial level. Based on in-depth interviews with education stakeholders in the provinces, although there has been some decentralization of government decision-making through provincial local administrative organizations, the provincial budgets are largely spent on infrastructure development rather than on human resource development and education. Therefore, changes in regulations or laws to encourage higher spending on education and the engagement of the private sector are needed. Moreover, it is important that the national committee with its multi-sector engagement oversees such spending and program implementation and serves as the check and balance mechanism to ensure accountability and transparency of the provincial programs.

Thailand must invest in the long-term capacity development of government agencies. Based on the Singapore case, technology and knowledge transfer has been accomplished through step-by-step use of joint investments in institutions utilizing well-planned knowledge transfer. Singaporean leaders engaged experts from different countries such as Germany, France and Japan to provide technology and knowledge transfer to develop high-quality training institutions. With a well-planned approach to capacity building, government officials learned about the latest technology through technical assistance provided by overseas experts from these governments. Eventually, they were able to establish and lead the new training institutions. Based on in-depth interviews with Thai government officials, when it comes to using PPPs in TVET, due to the higher levels of technology and expertise in the private sector, public officials in TVET need to make a difficult transition from program operators to facilitators, regulators, and consultants. It is important that they shift their role from delivery of training to the workforce to one of quality control and consultants on work productivity improvement.

Thailand must place greater importance on recruiting highly talented people into leadership roles and gaining their commitment to development of the nation. This is of the utmost importance for long-term growth and sustainability of the nation's

economic growth. Singapore's officials have been highly recognized for their transparency and its 2014 corruption perception index ranked 7th in the world compared to Thailand's ranking of 85th (the better ranking denotes the higher transparency). Singaporean government officials are highly paid and well-trained. From in-depth interviews with Thai government agencies, personnel development budgets are very limited. Moreover, the equipment available in technical and training institutes is outdated. With these limitations, it is difficult for government agencies to develop the leaders they need to provide quality public services which meet the changing needs of the emerging economic and social environment.

Thailand's leaders must develop a mindset and a culture of empowering local actors to create and nourish partnerships for public service delivery through grant making and fund matching. Both Singapore and the U.S.A. are good role models for making strategic utilization of funding to encourage cooperation among private actors and civil organizations in the creation and implementation of TVET programs. Thailand has always been dominated by central authorities who set priorities, develop plans, spend budgets through their activities, and attempt implementation on their own. It is critical for government leaders and civil servants to instill a fresh mindset that recognizes that stakeholder engagement is essential to sustainable development especially in the skills development area where the private sector has advantages due to its leading-edged technology, know-how, and expertise. From in-depth interviews, it is clear that there have been partnership programs in which the private sector has led in developing strategic plans and in implementing effective programs. Therefore, developing a culture of public private partnership requires a shift in the mindset of Thai leaders so they recognize that through partnerships, public services can be improved and expanded through a synergy of public and private efforts and expertise.

More attention needs to be given to evidence of what works. By employing evidence-based policies and practices, the U.S.A.'s Perkins Act exemplifies how government policies can play an important role in developing a culture of evidence-based practice by providing grants that require the use of evidence to support the policy and program

decisions. In Thailand, policies usually rely on the preferences of political leaders, not on evidence of how such policies and programs impact potential beneficiaries. To change this, the mechanisms for budget and project approval need to be changed. Use of multi-year budgeting with regular outcome and impact monitoring and evaluation will help. Moreover, support for independent evaluations and policy research is necessary. This means that the capacity of the researcher community needs to be considered and strengthened. One barrier to promotion of this culture is that professional advancement of educators is determined by generation of research papers which are not tied to practices and student outcomes but often to superficial theories which lack evidence supporting their impact on teaching and learning.

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