

## **Human Resource Development for Thailand 4.0 Based on Dual Vocational Education**

**Yuwadee Vaitayachoti**

Dean, Faculty of Liberal Arts, Panyapiwat Institute of Management, Nonthaburi, Thailand

yuwadeevai@pim.ac.th

### **Abstract**

In the move towards Thailand 4.0, the preparedness of both workers in the business marketplace and newcomers is extremely important. The preparedness of the newcomers who have just stepped into the work environment depends on what they have previously learned from their schools, both in theory and in practice. Therefore, the quality of vocational education needs to be improved to meet the universal standard known as dual vocational education. In this form of education, a business provides an apprenticeship while a student learns in a genuine workplace and is provided with a salary; meanwhile, a vocational school is responsible for the standard evaluation curriculum. The involvement of all parties, e.g. school administrator, teacher, supervisor, firm executive, training supervisor, and trainer can lead to effective human resource development for Thailand 4.0. This study therefore aims to investigate the process of dual vocational education in order to analyze the key to the success of the development of human resources for Thailand 4.0

**Keywords:** Human Resource Development, Dual Vocational Education, Thailand 4.0

## **Introduction**

Thailand 4.0 is an economic model prescribed in the 20-Year National Strategy in the belief that it can help Thailand get free from being a middle-income country to become one of the first-world countries by 2032. In other words, Thailand will be secure, wealthy, and sustainable in the context of the Fourth Industrial Revolution based on the 20-Year National Strategy with 3 defined aims: 1) the national income will be increased by a value-based economy through competitive growth engines; 2) public security will be improved by an inclusive growth engine; and 3) sustainability will be created by a green growth engine. Hence, human resource development for the “absolute human in the 21<sup>st</sup> century” along with “Thailand 4.0 of the First World” is regarded as an important mechanism for the development trend of Thailand 4.0 (Division of Research Administration and Educational Quality Assurance, 2016). This study aims to: 1) investigate the process of dual vocational education, and 2) analyze the key to the successful factors for human resource development for Thailand 4.0. The document analysis is the main approach for the study.

### **The main challenge for Thailand 4.0**

The present world is moving quickly through different issues such as fast communications and information distribution with social networks, innovations of living conditions, and competitions on economical, political and social matters. So, the country needs to develop people to keep up with the progress of globalization. The country, like the U.S., promotes the concept of “The Partnership for 21<sup>st</sup> Century Skills”. It implies that the 21<sup>st</sup> century is the beginning of educational reform, technological innovation, artificial intelligence and the Internet of Things. Thus, the world needs quality industrial services with professional and multi-skilled employees who have creativity and innovative skills, information and communications technology literacy, and occupational skills (Ngourungsi, Narot & Wongwilairat, 2017). In order to move towards Thailand 4.0, jobs will require multiple skills which is the crucial need to cope with the changing world.

### **Human Resource Development for Thailand 4.0**

The 21<sup>st</sup> century is considered as a period of skill development covering 3 main areas: 1) learning and innovation skill, which is regarded as occupational preparation based on human skills in creativity, innovation productivity, critical thinking, and problem solving,

2) information management and ICT implementation skills, and 3) life and career skills (Ngourungsi *et al.*, 2017). “Thainess” is an essential resource for driving the country to the goal of the Thailand 4.0 model, so the development of all Thai people is needed. The young generation, in particular, has to be prepared to follow the Thailand 4.0 model. Another important thing is improving the limited knowledge and skills of Thai people to become better in the creation of innovation. Therefore, the learning process adjustment is a challenging issue in education and human resource development for Thailand 4.0 with the concept of “growth for people” to contribute to “people for growth” and bring security, wealth, and sustainability to the country based on the 20-Year National Strategy. The learning process has to be adjusted from: 1) passive learning to active learning, 2) duty-driven to passion-driven, and 3) standardized to personalized (Duangpummes & Kaewurai, 2017). In addition, learning for creating innovation known as generative learning should be adjusted from formal education, i.e. learning in the classroom or school, to informal education, i.e. learning outside the classroom or school. Also, fact-based learning should be adjusted to idea-based learning, and thinking inside the box should be adjusted to thinking outside the box. Most importantly, learning should be adjusted from transmitting to mentoring. This means that the Thai education system has to be reformed and adjusted in terms of the trend of educational management by teaching so that learners can connect a concrete entity to an abstract one, and an abstract entity to a concrete one (Harrison & Coll, 2007). Also, response to the workforce in the economic system should be highlighted in order to truly develop the country.

### **Dual Vocational Education: Solution of Human Resource Development for Thailand 4.0**

The 20-year National Education Plan (2017-2036) is seen as a challenge and has to be closely monitored for human resource development and production in the Thailand 4.0 economic system. This is because the plan is the goal and the trend of educational management in Thailand to improve the potential and competency of people of all ages to be able to acquire knowledge and learn from their experiences for all their lives. Vision, a high-quality and meaningful education, and living with happiness by following the sufficiency economy philosophy are particularly significant to the country’s development. The major change in the 21<sup>st</sup> century is to have Thailand bridge the trap of being a middle-income country with inequality in the country while following the relationships between the National Education Plan, the 20-Year National Strategy, and the Thailand 4.0 Policy. The National

Education Plan consists of 6 strategies, and one major strategy is the production of a workforce to have enough competitive competencies to meet the labor market's needs as well as the economic and social development of the country. This leads to an urgent policy to promote vocational education with 3 main focuses: 1) producing an available workforce in 5 target groups for technology and industry, 2) cooperation of the civil state for vocational promotion, and 3) expanding dual education to develop workforce skills in required fields for the labor market. Therefore, practices are specified according to the policy as follows (Rodklai, 2017):

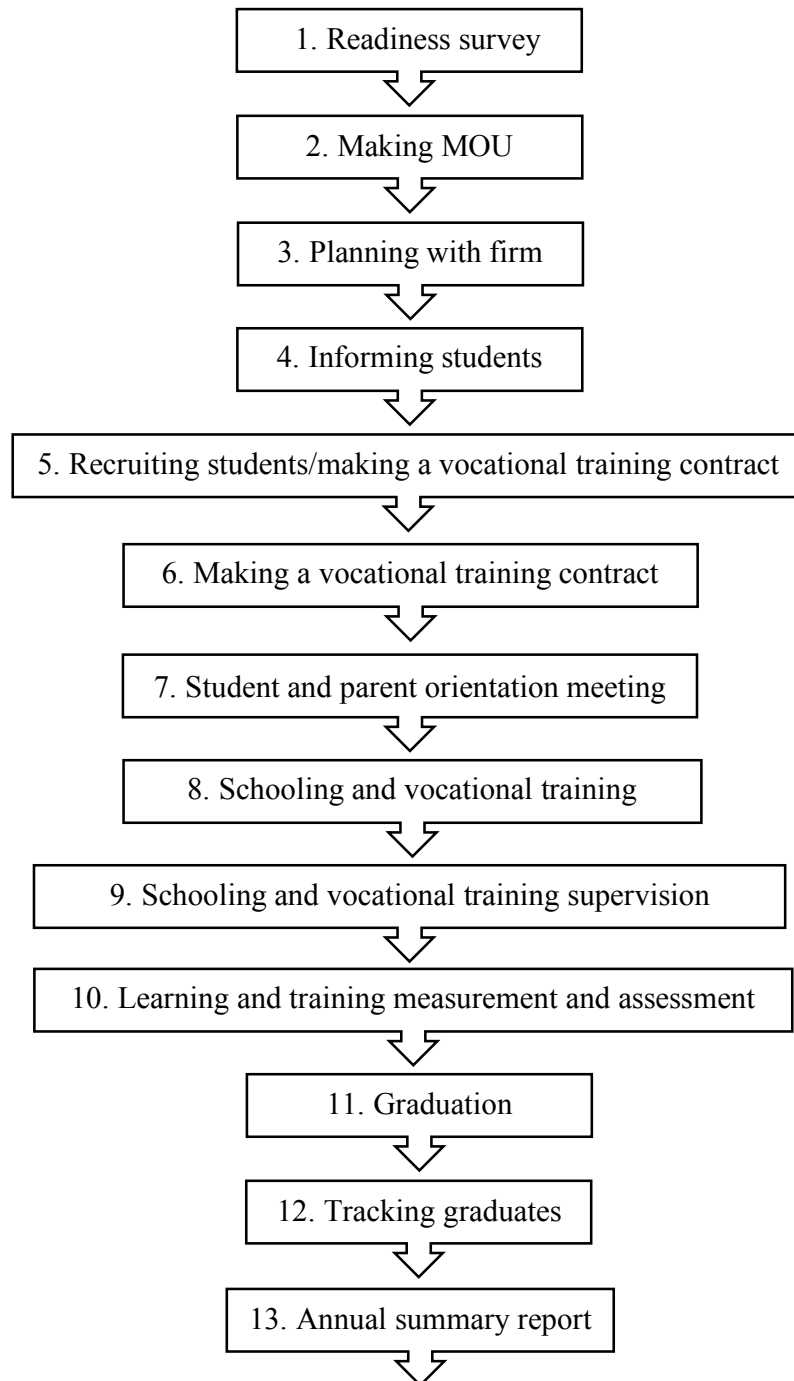
1. Emphasizing competency for 5 groups of industry including work readiness,
2. Providing competency-based learning and accrediting vocational qualification,
3. Organizing dual study,
4. Cooperating with the private sector in producing a competitive workforce,
5. Cooperating with universities in producing and developing vocational education teachers in related fields and talented teachers,
6. Promoting vocational schools related to the Thailand 4.0 model such as colleges of agriculture as well as industrial and community education colleges.

However, according to the Vocational Education Act B.E. 2551 (2008), section 8, dual vocational education is an agreement between a vocational school and a firm in carrying out the curriculum, instruction, and measurement and assessment. Students are allowed to learn the theoretical part in the school and practical part in the firm. Lesson plans, vocational training, and measurement and assessment are provided to produce and deliver graduates at technical and practical technology levels with high knowledge, skills, morals, ethics, a professional code of conduct, and appropriate characteristics. Moreover, they will have adequate competency according to occupational and competency standards in their field of study to work as a freelancer. It can be said that dual vocational education in Thailand has been developed with collaboration between schools and firms since 1984 based on different systems in the 4 following periods (Dual Vocational Education Center, 2014):

1. Dual-System Program 1984 – 1994
2. Dual Vocational System Program 1995 – 1998
3. Half-Course Internship 1999 – 2007
4. Dual Vocational Education 2008 – present

Reflecting the importance of the above, the Ministry of Education set out the Standards of Dual Vocational Education Management as the guideline for schools and

firms to organize dual vocational education with high quality and efficiency, as shown in Figure 1.



**Figure 1** Guideline on dual vocational education: steps of management process between school and firm (Dual Vocational Education Center, 2014)

Dual vocational education in Thailand has been carried on with the different systems as mentioned above for 33 years. However, the World Economic Forum Human Capital Report 2016 has found that Thailand has 14.4% of skilled labor, while Sweden, Germany,

Singapore, and Finland whose 4.0 readiness is higher than Thailand have a skilled labor ratio between 43% and 55% (World Economic Forum, 2016). Calculating the figures of those four countries as a mean, gives a skilled labor ratio of 48% on average. If the mean of the skilled labor ratio of those countries is employed as a base for calculation, the important thing for achieving Thailand 4.0 is that Thailand must have a skilled labor force totalling 18.28 million or 48% of the population. According to the employment status of the population surveyed by the National Statistical Office, the number of employed people in 2016 is 37.98 million. If 14% of the employed people are skilled workers, it means that there are now only 5.47 million skilled workers in Thailand (Lounkaew, 2017). As a result, 12.81 million Thai workers have to be promoted to become skilled workers. This number includes both new graduates and existing employees in the labor market.

Dual vocational education management from the past until the present indicates both success and obstacles. Yimjun (2010) studied the implementation of the higher diploma vocational education curriculum on the dual vocational training program in business management of Srisamrong Industrial and Community Education College, Srisamrong District, Sukhothai Province; this dual education was in cooperation with 30 firms. The findings showed that students applied their knowledge to their work including sharing it with colleagues as well as related parties at higher levels. Moreover, a work plan was always made by the students before starting, and the equipment was effectively used by them. The students could also analyze any problem they faced while working and could solve it efficiently. They were additionally accepted by the firms where they worked because they were hard working and got along well with other workers. Moreover, not only were the students somewhat skillful in adapting modern technology to their work, but they were generous and friendly and followed the rules and regulations conscientiously. Nevertheless, there were so many obstacles found in the management process. In terms of the curriculum administration, teachers were responsible for teaching many courses of both regular and dual programs including their extra jobs, so this led to a low readiness of teachers for dual vocational education management. In the area of curriculum implementation, teachers lacked knowledge on accreditation of experience because they had not been trained on data management and proper practice. In the aspect of instruction, the numbers of dual education service officers were insufficient, and meetings between teachers and students were not continuously conducted. As a result, all parts of the dual vocational education had to be planned, prepared, and run simultaneously by all those concerned, i.e. teachers, staff, and students.

Preparation for Thailand 4.0 needs to rely on cooperation from all sectors; firms and the people involved, e.g. executives, training supervisors, and trainers, particularly in promoting vocational education to the universal standard of dual vocational education. Those involved have to cooperate with each other in creating occupational training programs; in other words, firms and schools prepare documents identifying the process of the development of an occupational trainee (dual vocational student) in advance based on on-the-job training. Also, the learning process is systematically organized to increase knowledge, skills, ability, and attitude as well as ensuring that authentic measurement and assessment of learning has to be based on data from authentic tasks. Dual vocational education can produce qualified graduates who are ready to work immediately after graduation. The students must pass the vocational education standards of each program and level in all 3 aspects: 1) desirable characteristics, 2) core and generic competencies, and 3) vocational competency, and the training duration is based on the defined training program that allows the vocational competency to meet the requirements of a firm. This can indicate that the employable graduates are an important mechanism to drive productivity in the Thailand 4.0 economic system.

Furthermore, we are aware of the needs for change in the educational outcomes, and the overall process related to teaching and learning. The teachers have to undertake more the role of a facilitator. It means that the teacher guides and helps students to understand and manage information, enabling them to co-operate with others and be creative by developing critical thinking which becomes valuable life experience (Burgen, 1996). So, education is a tool for developing people's quality of life. The quality of education is a basic factor which helps determine the capacity and efficiency of the manpower that enters the economy, politics and society. Learning processes, outputs, and outcomes including development of the educational management system are procedures related to industrial production. The Office of the National Economic and Social Development Board (2016) provides a conceptual framework for developing education as: 1) To develop the quality of education, 2) to produce and improve manpower to reinforce efficiency for the nation's competition, 3) to establish knowledge of technology and innovation to support the country's sustainable development, 4) to help Thais acquire lifelong learning, 5) to develop Thailand's management of its education systems to be efficient in accordance with good governance with participation from all sectors.

## Conclusion

Promoting dual education particularly in vocational education to the universal standard is definitely significant to human resource development for Thailand 4.0, a policy set by the government, because the Office of the Vocational Education Commission has previously encountered the inadequacy of vocational teachers. To reduce the problems of personnel shortage and obstacles to learner development, dual vocational education has to be cooperatively managed by schools and firms because the essence of dual vocational education is learning for future work in any firm. Therefore, firms, private companies, and factories are like classrooms for vocational students to learn occupational skills well, and the staff members, who are skilled and understand well the problems at work, serve as coaches or trainers which are similar to medical students learning medical skills in a hospital after their first year at university. This kind of vocational education is also found in many countries especially in Germany, which is a model country for dual vocational education. In consequence, vocational education does not actually lack teachers because there are a lot of skilled teachers all over the country including those providing modern instructional devices in factories or firms. The students are taught by the firms and can learn in real-world situations with a salary provided at the same time. Schools are responsible for examining and certifying the standard of the programs designed by the firms to evaluate credits in accordance with the program structure for graduation evaluation.

An important aspect of dual vocational education in developing human resources with cooperation between the public and private sectors is not only the production of vocational and diploma students, but also the lifelong education for everyone. This kind of education allows people of all ages, whether employed or unemployed, to have a chance to join in short-term, or informal, or formal courses of dual vocational learning or training. Another important aspect is to develop occupational standards or vocational qualifications in order not only to correspond with labor competency, but also to justify the employment and to promote the value of vocational education.

The key success factors for the implementation of vocational education in developing human resources can be concluded as follows:

1. Setting clear quantitative and qualitative goals of educational management and human resource development;
2. Providing programs of different levels associated with core skills and competency development for Thailand 4.0;



3. Focusing on analytical thinking and active learning;
4. Developing instructional skills and competencies of teachers to promote students to Thailand 4.0;
5. Creating a human resource database for educational management to meet the requirements of each industrial group and the labor market; and
6. Prescribing measurements of provided educational subsidies for crucial dual vocational schools including promoting tax deductions for associated firms for Thailand 4.0.

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