

การพัฒนาทรัพยากรมนุษย์ในภาคอุตสาหกรรมไทย Human Resource Development in the Manufacturing Sector in Thailand

ดร.บุญอนันต์ พินัยทรัพย์*

Boon-anan Phinaltrup, Ph.D.

บทคัดย่อ

ในปัจจุบันมีความต้องการในเรื่องของการถ่ายทอดเทคโนโลยีจากต่างประเทศเพิ่มมากขึ้น มีนักวิจัยหลายคนได้นำเสนอผลงานวิจัยว่า วิธีทางหนึ่งในการพัฒนาบุคลากรและเศรษฐกิจให้เร็วและสามารถแข่งขันกับธุรกิจอื่นได้ คือ การถ่ายทอดเทคโนโลยี แต่อย่างไรก็ตาม มีปัญหาและอุปสรรคบ้างที่ทำให้ไม่สามารถจะพัฒนาโดยใช้วิธีการนี้ได้ ยกตัวอย่างเช่น การผลิตที่ยังคงใช้เทคโนโลยีล้าสมัย มีการทำวิจัยและพัฒนาน้อยมาก มีการจัดฝึกอบรมทักษะด้วยเทคนิคน้อย ขาดข้อมูลเกี่ยวกับการถ่ายทอดเทคโนโลยี และค่าใช้จ่ายสูง

ดังนั้น ในงานวิจัยชิ้นนี้จึงมีวัตถุประสงค์เพื่อศึกษาการถ่ายทอดเทคโนโลยีจากช่างฝีมือแรงงานต่างชาติสู่ช่างฝีมือไทย โดยใช้วิธีการวิจัยในเชิงปริมาณ ศึกษาจากเอกสาร สัมภาษณ์และการสังเกต ในโรงงานอุตสาหกรรม ผลของการวิจัยพบว่าช่างฝีมือแรงงานต่างชาติมีการถ่ายทอดเทคโนโลยีให้ช่างฝีมือแรงงานไทย วิธีการที่ใช้มากที่สุดคือ ฝึกในงานที่ทำจริง ฝึกอบรมภายในองค์กร ส่งไปฝึกอบรมทั้งในและนอกสถานที่ประกอบการ

* อาจารย์ประจำโครงการบัณฑิตศึกษาการพัฒนาทรัพยากรมนุษย์ สถาบันบัณฑิตพัฒนบริหารศาสตร์

Abstract

*There is an increasing need for the transfer of technology from abroad. Many researchers have showed that **the transfer of technology could assist the country in the development of human resources and the economy**. However, there are many problems that prevent Thailand from reaching that goal. For example, economic production is still struggling with old technology. There are less educational support for research and development activities, a lack of training and retraining for technical skill development, and a lack of information on technology available for transfer. In addition, there are high costs and restricted practices experienced by technology innovators.*

Therefore, this paper demonstrates how to transfer technology. The research objective was to study the effectiveness of technology transfer to Thai workers. The research methodology included a quantitative approach and a documentation approach, including interviews, observations and surveys in the manufacturing sector. The outcome showed that foreign workers have transferred their skills and knowledge to Thai workers. The most frequently used methods for technology transfer are on-the-job training, in-house training, overseas training and in-country training.

Introduction

There is a growing manufacturing sector in Thailand. Thailand itself wants to become industrialized like Japan and South Korea. In order to become so, technology transfer as an opportunity is an important element in the process of the industrialization of developing countries like Thailand. However, there are many problems that disrupt the country's reaching of that goal. For instance, the economy is still struggling with old technology and grappling with various constraints that prevent the acquisition and adoption of modern technology (Khanthachai, 1987). There are inadequate institutional support for research and development activities, lack of training and retraining for technical skill development, lack of information on technology transfer, limited incentives for the private sector, financial resource constraints, high costs and restricted practices experienced by technology innovators.

Therefore, the purpose of this paper is to express concern about the transfer of technology from skilled foreign workers to Thai workers in Thailand. The paper shows that the effectiveness of technology transfer to Thai workers is a major issue in the Thai manufacturing sector. Furthermore, the paper discusses the roles of human resources, including the human resource manager, foreign and Thai workers, and school administrators, who have played an essential role in supporting and encouraging the transfer of technology.

Research Methodology

The objective of the research was to study the effectiveness of technology transfer to Thai workers. The research methodology included a quantitative and a documentation approach, including

interviews, observations, and surveys of 350 persons in the manufacturing sector in the four regions of Thailand. These people were divided into four groups, human resource managers/entrepreneurs, Thai workers, foreign workers, and school administrators. (In addition, the literature was reviewed. Many books, journals, and other documents on the transfer of technology were also reviewed. The sources were Thai human resource and technology journals, organizational development journals, and the Internet). This information is not usually included in published research. The research took about 10 months.

The questionnaire was discussed by the team researchers many times in order to clearly define and make sure that all details were covered. Some of the questions for investigation are:

- With what technologies are Thai workers' skills not as good as they should be?
- Do manufacturers provide training to Thai workers?
- How do manufacturers transfer the technology to Thai workers?
- How do the manufacturers develop Thai workers after technology transfers?
- What are the advantages and disadvantages of hiring foreign workers?
- How can the government assist in the transfer of technology?

Then, the questionnaire was pre-tested in a factory in Ayuthaya province.

Discussion

The study has been undertaken on the technology transfer in four groups of people, human resource managers, foreign

workers, Thai workers, and school administrators the following paragraph discusses the results.

The research shows that human resource managers play an essential role in employee development. The role of the human resource managers includes providing support, providing advice on how to improve skills, and developing skilled labor in order to learn and gain more experience from foreign workers. Human resource managers are also called upon to act as specialists capable of assisting employees in solving organizational problems, planning for the future, and improving utilization of productive capacity to enhance Thai skills in manufacturing process development. In addition, their role is to take care of foreign workers so that they can get along with Thai people and live in culture. Both Thai and foreign workers can work together well because they understand each other. Furthermore, there are many advantages in hiring foreign workers. These advantages include the transfer of knowledge and technology to Thais, exchange of culture, making communication easier with the mother company, and providing a highly experienced and specialized staff.

The foreign workers are responsible for quality control, quality audits, organizational management, safety, product design, and many other things. They usually hold senior positions. Most of them come from Japan, Korea, China, Taiwan, the Philippines, Malaysia, Singapore, Pakistan, and India. A few of them come from the United States, Canada, Britain, France, Italy, and Australia. Examples of positions are mechanical manager, marketing manager, managing director, quality audit manager, shift supervisor, maintenance supervisor, and production manager. Many managers stated that some of these workers have transferred technology and increased the experience and knowledge of Thai workers. A part of their job is to transfer their skills and knowledge

to Thai workers. The methods of transfer of technology from foreign workers to Thai workers are mostly on the job-training, in-house training, training abroad and in-country training, are related to methods of production, organizational management, and marketing. However, it does not always work well. There is a language barrier, a communication gap, a cultural conflict, and sometimes mutual misunderstanding. Thai workers try to find ways to decrease these problems.

Foreign workers hold positions of senior managers in the manufacturing sector while Thai workers are junior managers. Foreign workers have an average experience of about 15 years while Thai workers have an average experience of about 5 years. This might be because the average age of foreign workers is much higher, 41 years, while the average age of Thai workers is only 31 years. The research shows that they should distribute their new and advanced knowledge to Thai workers who have less experience. The technique most-used by foreign workers for knowledge transfer is on-the-job-training.

The final group, school administrators, stated that they are trying to produce graduates who are able to think, be responsible, communicate in a foreign language, and be able to work efficiently in the work place. However, many institutions in Thailand have only old equipment and tools for students to practice with because of a lack of funds to purchase more up-to-date training equipment. When students get jobs, many manufacturers complain that Thai students produce low quality work and don't know how to use the machines. The manufacturers must retrain them which they feel is a waste of time. Therefore, the institutions have asked the government to provide more funds, provide more experienced instructors, establish a training center, and provide more scholarships so that the schools can produce better quality

graduates for the manufacturers. If the government makes a strong commitment, Thai manufacturers could compete in the world market and be leaders in the manufacturing sector in Asia.

While doing this research project, the importance of technology and related skills to the Thai manufacturers became very apparent. If the Thai economy is to become strong again, Thais must learn, adapt, and develop human resources as human resources are at the heart of development of the sector.

Thai Experiences in Manufacturing

This research analyzes the major issues of technology transfer and skill enhancement in Thai manufacturing as reflected in human resources and training. It shows a link between two major factors and results in lifelong learning in Thai workers' mind. Human resources regardless of their functional area, must work effectively and cooperatively deal with manufacturing issues. They need to know the manufacturing business, work together closely in order to create effective communication, establish effective partnerships, receive the transfer of technology, and value employees as a key element in the manufacturing process. Training and development lead to improved performance, higher morale and increased employee potential.

Employees work and improve themselves through training. During the process of training, there is a learning that occurs for employees to keep improving their performance. It is imperative that employees be encouraged and know how to learn and to take responsibility for learning throughout their life. It is a new way of learning, a way of living, rather than earning a living. The engagement in lifelong learning offers benefits in terms of economic productivity as well as longer-term benefits for employees. Therefore, the

following paragraphs will explain more details on these three factors: human resource managers, training and development, and life long learning.

Human Resource

Human resources in this case includes human resource managers, foreign and Thai workers, and school administrators. Foreign workers must be willing to transfer technology. The managers and the schools must know their roles and be ready for the technology transfer. Human resource managers must have a vision of where the economy is going and motivate their people to do their best. School administrators must produce quality graduates who are able to work efficiently. They all must support, plan, and coordinate all the time. There is a need to create a link between the manufacturers and the schools since the schools are the ones who produce the graduates to work for the manufacturers. These links can take the form of a curriculum committee made up of members from both groups, or the setting up of sandwich courses, or doing the actual job in the work place. A policy needs to be put in place to regulate and monitor technology agreements between schools and manufacturers with strong support from the government. Such a policy could restructure the education system based on manpower requirements. Many institutions should invite experts from foreign joint-venture manufacturers to give lectures and provide practical training for students. This can help to produce the right quality of graduates for the manufacturers. It could also establish a link between schools and the manufacturers.

Training and Development

Training and development is seen as the primary vehicle for building Thai workers' capacity to work efficiently. Training typically focuses on providing workers with specific skills in the short and long term while development is seen as an effort to provide workers with the abilities needed in the future (Gemez-mehia; Balkin & Candy, 1996). From the study, there are three popular training methods implemented by manufacturers in Thailand. The three kinds of training can help to enhance skills. These training methods have a great impact on skilled labor and will create better workers in the long term. The three training methods are retraining, peer training, and team training.

Retraining emphasizes giving workers the skills they need to keep pace with their job requirements. It not only involves getting the presently employed up to speed but also providing training assistance to work better.

Peer training is a way to help workers develop their skills through learning from their colleagues who are specialists in that area and usually high-performing workers. Peer trainers must be selected carefully. After he/she has been chosen, he/she must work closely with his/her co-workers, be patient and be motivated to work.

Team training can make workers work effectively and efficiently. Team training should be done in a small team in order for it to work well. Since workers work as a team, they must be given training in communication skills. This is a way to encourage mutual respect among all team members, and everyone learns to listen to each other. Training also should emphasize the interdependence of team members, and remind everyone on the team that team goals and individual goals are not always the

same. There should be a plan or strategy for dealing with conflict if it occurs. Flexibility should be emphasized since team work always gives rise to unexpected situations (Gomez-Mejia, Balkin and Cardy, 1998).

Lifelong Learning

Since there is a relationship between human resources and training, it is my impression that the training is seen as an investment. This investment in training will have long-term benefits for both workers and manufactures. The benefit to the manufacturers will be of workers' space skills enhancement and work performance efficiency. The benefit to the workers will be not only of job performance proficiency but also of several tangible incentives. These consist of the following: increased accumulated vacation time, increased promotions, and increased monetary rewards. Moreover, workers' intangible incentive will consist of the following: pride that comes from a job well done, honor and recognition from colleagues, and acceptance as a role model by peers. Again we want to stress the idea of an investment—that begins and is continuous. **We want to stress the need for an investment in training that begins and is continuous throughout the life of the workers, that continuously enhances the life of the worker and his contribution to the manufacturer.**

The concept of lifelong learning appeared while I interviewed many foreign and Thai workers. They all said that they need to develop themselves and constantly improve as the economy changes. This is where the concept of lifelong learning comes in. The concept of lifelong learning is a way of constantly adapting to the conditions prevailing at any particular time. This is something positive, not something which is a burden. In a sense,

it is the gift of a changing economy (Patton & McHahon, 1999). It is important because the modern world is always changing. This makes it necessary to continue, renew, and upgrade the skills, knowledge, and attitudes of workers. Throughout a worker's life, there are three stages— education, working life, and retirement. Learning happens at every stage. We begin when we are born. We must attend elementary and secondary school, which is the compulsory education. Some people enter the workforce right after they complete school. Many people continue to further their education in the field that they are interested in, so they enter the labor force later. If we take a closer look at the labor force, workers are always working and receiving training in the work place in order to upgrade their skills. Even after they retire, many workers still teach and supervise others. It shows that learning occurs at every place and at every time. It is a process that helps to develop workers' confidence in being a lifelong learner as well as the desire to be one. Thus, it is imperative that every Thai worker must be adequately prepared for the context in which they will be living and working.

It would seem that the concept of working and lifelong learning are inseparable. It is reflected in responses from the questionnaire that work and learning are major factors for human development throughout life. Lifelong learning consists of learning about what one is interested in, what one values, about the organization's culture, learning about the world of work, and learning about processes including decision making, communication, and teamwork.

In sum, since the world is constantly changing, manufacturers must keep up with it in order to grow in foreign trade and investment as well as for the economic development of Asia. Thai manufacturers must keep in mind three factors, human resources,

training and development, and lifelong learning, in order to create the opportunity for ourselves to lead the world.

Suggestions and recommendations

This section presents some suggestions from the findings of the research study. These suggestions may be useful for the transfer of technology and adapting such technologies in order to better manufacturers' performance. These suggestion may be divided into those directed at the manufacturers, the government, and institutions.

1. Manufacturers should be encouraged to form associations, which can possibly fill the role of being a transfer center for technology throughout Asia.

2. Manufacturing association must develop and strengthen research and development capabilities to adapt the technologies to local condition and requirements, in this case to Thai employees and Asia.

3. The government of Thailand must strongly encourage the manufactures to provide training and development and lifelong learning to improving the economy and social infrastructure, including education and training.

4. The government of Thailand must constantly review and make necessary improvements in the country for facilitating corporate efforts in technology importation, adaptation, diffusion, and development.

5. The government of Thailand should reinforce and improve their industrial policy for technology transfer, adaptation, diffusion, and development. In addition, the government must also provide financial and fiscal assistance to those manufactures in order to accelerate their productivity.

6. Thailand has not established any explicit policy on the transfer, adaptation, and development of technology in relation to foreign direct investment. Therefore, it is desirable that enhancement of technology and skills for Thai employees should be stated explicitly as one of the foreign investment promotion criteria. A goal for the transfer of technology and management, as well as a master plan to select and import foreign technology, should be established.

7. The establishment of a center for the development of manufacturing technology should be set up. The purpose is to take action to improve the technological base, the development of new products and processes, and the adoption and improvement of existing technologies.

8. Improving the quality of employees through education and training is a must. Effective technology transfer depends on the quality of the people who are involved in the process. For this reason, in order for transfer to be effective, the quality of Thai employees must be improved through education and training.

9. Textbook, handbooks, and manuals should be translated and printed in Thai. The Thai versions of such materials will help to accelerate technology transfer since most Thai employees use Thai as their primary language.



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