

A Study of Global Manufacturing Education and Training for Chinese Company Manager

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ABSTRACT

Global economic recession, global market reduction, and the deteriorating economic recession are forcing the industry to reconsider the business plan and strategy related to supply chain regardless of the size of the companies. During the economic recession caused by financial anxiety, development of international collaborative producer is the key theme for a manufacturing industry to get over the situation. Especially, development of high-skilled people who are capable of handling global manufacturing management is the key factor in China which shifted from a world factory to a world market. In this background, we started the international project of global manufacturing education and training for Chinese company managers from 2009. In this paper, based on the research conducted by the universities and companies in China, a design of global manufacturing education and training is proposed. This presented design is based on the theory of Japanese production strategy and investigation of actual conditions for Chinese companies and the research methodology of business management practice with efficiency and productive for international level management organization. The effectiveness of the education design is evaluated by applying the international education and training project of Aoyama Gakuin Human Innovation Consulting Inc. and Vigor Management Technology Association.

Keywords: Manufacturing Training, Global Education Design, Human Resources, Supply Chain Management

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1. INTRODUCTION

Due to the prompt development of global manufacturing and market, the collaboration and sustainability in supply chain (SC) have received much attention (Nobuaki and Masaaki, 2012). The structure of the assembler-supplier relation of Japanese auto makers is a good example of strong coordination relations among SC play-

ers. This structure is called 'keiretsu', which enables Japanese auto assemblers to remain lean and flexible while enjoying a level of control over SC akin to that of vertical integration. Toyota and its partners (suppliers such as Denso) are a conspicuous example of the keiretsu structure (Ahmadjian and Lincoln, 2001; Schonberger, 2007; Sun *et al.*, 2012; Yin *et al.*, 2011).

For realizing the collaboration and sustainability of

SC, human resources for international collaborative production have become a key theme of international supplier (manufacturing company). This paper presents a design of global manufacturing education and training for Chinese company managers.

Over the last 10 years, developing high-skilled people who could handle global manufacturing management has become an important factor in China, which is shifting from a world factory to a world market. In this background, we started the international project of global manufacturing education and training for Chinese company managers from 2009.

Due to Chinese economic growth and the business competition, demands for management technology and consulting service for the market and the production site are increasing rapidly, and the business market of company training is expanding. In this paper, the current state of Chinese manufacturing training is analyzed based on the literature research and field investigation. Then, as an example, a training and educational institution in China is introduced. In addition, our work on Chinese manufacturing manager training and the education program is reported.

2. ANALYSIS OF THE SITUATION ON CHINESE COMPANY TRAINING

The increasing need for training investments by Chinese companies motivates our study.

2.1 Market Situation of Company Training

The enormous Chinese company training market has been divided into school sect of elite university (such as Tsinghua University, Beijing University, and Shanghai traffic universities) and practice sect of private training company that developed rapidly in recent years. Moreover, in recent years, the training course of the advanced country's universities, such as Brigham Young University, Waseda University, University of Sydney, The University of Warwick, National University of Singapore are popular in China too.

Figure 1 shows the forms of training that a Chinese company accepted and those availabilities in 2010. From Figure 1, it can be noted the first place of availability is training in the company which is used in the 61% company, because the content is designed to be

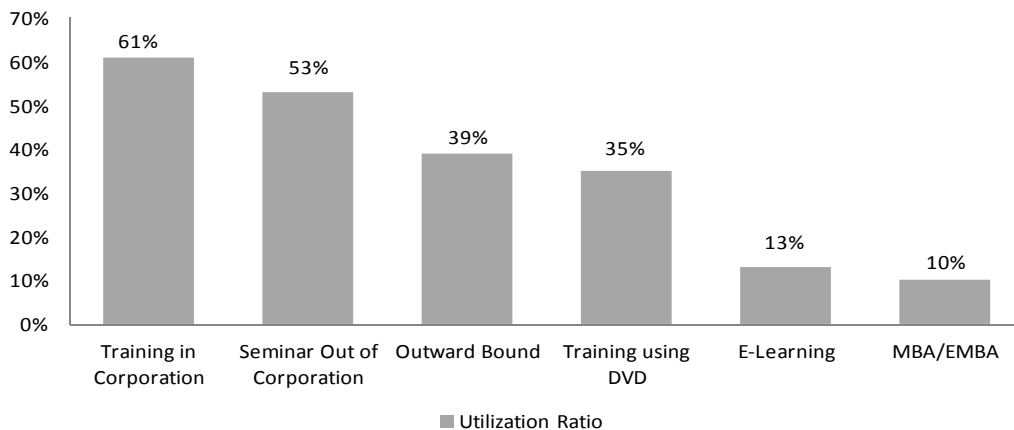


Figure 1. Training form and utilization ration of Chinese company.

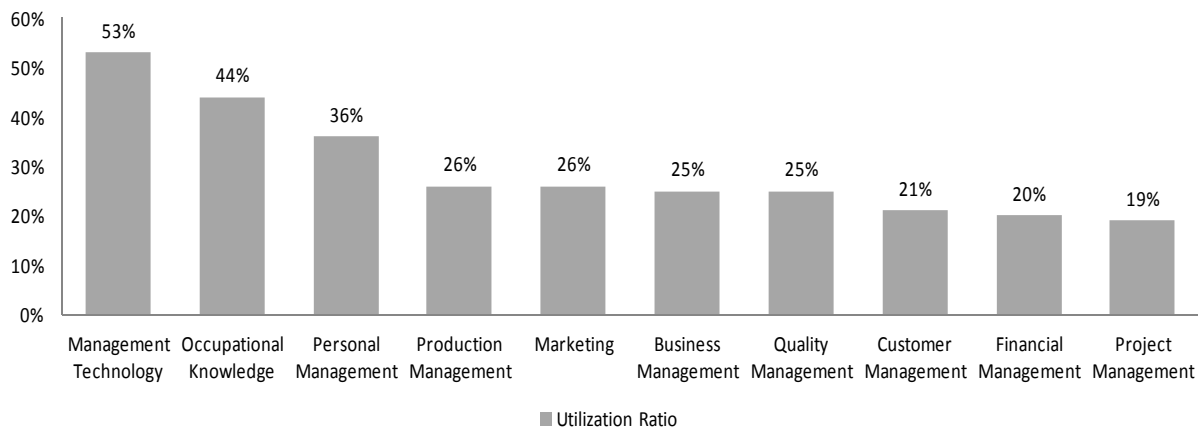


Figure 2. Ranking top 10 of the training theme inside Chinese company.

suitable for learner needs and the cost for a learner is not high. The second place of availability is the seminar outside the company which is used in the 53% company.

Figure 2 shows the ranking top 10 of the Chinese company training theme in 2010. From Figure 2, it can be noted that the first place of availability is company technology which is used in the 53% company. As a result, it has been understood that a lot of companies value manager and employee's job skills, and the concern for the occupation attainments is also high.

Figure 3 shows the ranking top 10 of the training theme outside of Chinese company in 2010. From Figure 3, it can be noted that the first place of availability is management technology which is used in the 70% company. The course of the management technology is basically for the manager more than the interlayer. As a result, it can be said that a lot of companies place a greater emphasis on the interlayer manager's training.

2.2 A Case of Consulting and Training Company in China

In this chapter, as an example of the business of the training company, Vigor Management Technology Association (VMTA) will be introduced. Because VMTA also is a research collaborator of this training project, Section 2.2 is described as a background of this research, too.

VMTA Group is established by Mr. Shih Shui Yeh in Taiwan in 1989. With a view to the tremendous potentiality of the economic development in mainland China, VMTA group come to mainland China in 1990 and constructed Vigor Management Technology Association, Vigor Management Technology Academy which provided with complete campus establishment and peaceful environment in 1998. In addition, VMTA had set up dense service network based on Ningbo headquarters to emit radiations to 14th branch offices, such as Guang Dong, Shang Hai, and Hong Kong, etc.

Since her establishment over 20 years ago, VMTA

Group has been engaging in 3T (Total Quality Management [TQM], Toyota Production System [TPS], Total Productive Maintenance [TPM]) strategic and e-Management, and chiefly engaging in professional consultation and talents training. Because VMTA Group has offered consulting services for more than 4,000 clients in Taiwan, trained over 200,000 managerial talents for the companies throughout China, she is also leader existence of the consulting market in the Chinese coast region. The main company training and the consulting item are as follows.

The main company training:

- Production management
- Marketing management
- Human resource management
- Quality management
- Management and administration
- Locale management
- Finance management
- New production research and development
- Improvement on management ability
- Training on motivation

The main consulting:

- Consultation of the TQM, TPM, and TPS
- Consultation of supreme quality award
- Consultation of international certification
- Others consultations (ERP, 6σ, human resource management, marketing strategy, and new production development).

3. PRACTICE OF PERSONNEL TRAINING FOR CHINESE MANAGER

Due to the developing of Chinese global market and production, fostering of the manager who leads international cooperation business becomes an important problem. The personnel training in the manager who can do

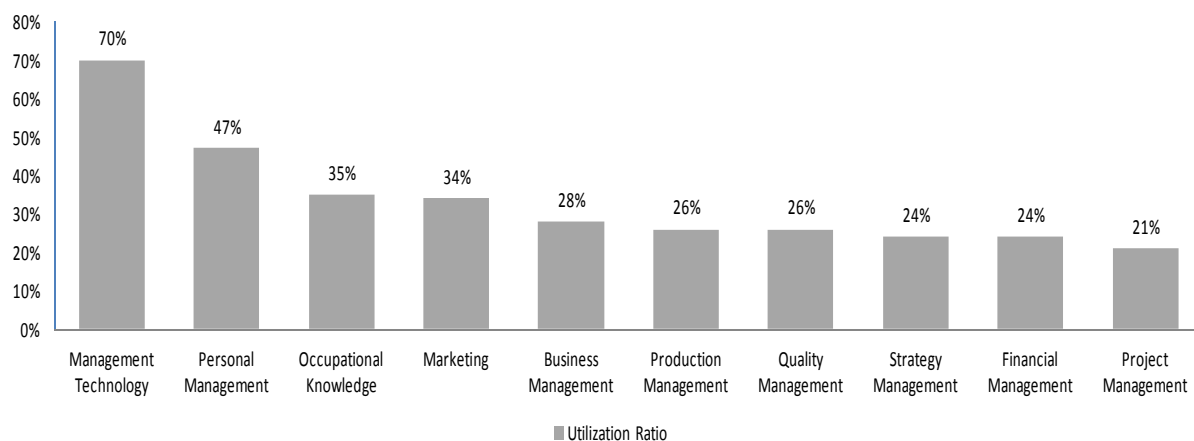


Figure 3. Ranking top 10 of the training theme outside of Chinese company in 2010.

the production management from a global aspect is paid to attention. In this section, as an example, a training and educational institution in China is introduced, which is also a collaborative research of a training project between VMTA and Research Center for e-Learning Professional Competency (eLPCO). In addition, our work on Chinese manufacturing manager training and the education program will be reported.

Global economic recession, global market reduction, and worsen of economic recession force industry connected by supply chain, regardless size of company, reconsider a business plan and strategy. During the economic recession caused by financial anxiety, development of international collaborative producer is the key theme for a manufacturing industry to get over the situation. Especially, development of high skilled people who capable handle global manufacturing management is the key factor in China, which is shifting from a world factory to a world market.

This research presents a design of global manufacturing education and training. The design is based on theory of Japanese production strategy and actual investigation of actual condition for Chinese companies and research methodology of business management practice with efficiency and productive for international level management organization.

The contents of the presented design include three parts—the design purpose, promotion procedure, and training curriculum, which will be introduced in Section 3.1 to Section 3.3.

3.1 Development of Education Program

The purpose of training program for international manager in Chinese manufacturing company is shown as follows:

- i) Investigation and research of theory and actual condition of Japanese production management strategy for management of Chinese company,
- ii) Design and develop a framework of certificate system corresponded to the competency which focus on a development of international collaborative producer, a curriculum system and each education sub-program to achieve (i).

To achieve above, research on the actual situation was done through visiting to university in China, hearing investigation to business administrator, factory site survey, in addition, lecturing in Economic Forum for Chinese manager.

Visiting to university in China

The interview was executed to the professors at the Ningbo University Business School, which is about research trend of international management, market development, supply chain management, and the production management training in Chinese university.

Investigation of actual situation to local company

We visited to Shenzhou International Group Holdings Limited, which is a representative of advanced international in China, and discussed with the manager about the following theme: 1) problem concerning business activity of current state of product development, production, and sales of Chinese company and each section and 2) needs of personnel training in global business in China.

Lecturing in Economic Forum for Chinese Manager

Prof. Tamaki of Aoyama Gakuin University lectured on following three themes, in the Economic forum in which 600 managers of Chinese top-level have gathered (Tamaki, 2009).

- 1) Historical transition and future view of Japanese production strategy,
- 2) Practice of Japanese TQM,
- 3) Theory and practice of Toyota production method.

3.2 Promotion of Education Program

Based on investigation of actual conditions, the education program was promoted by the following procedure.

- Total framework design and system quality assurance for certification system of education completion.
- Construction of a curriculum system of education program.
- Detail design of each training sub-program.
- Formulation of education efficiency of evaluation method for learner.
- Issue a certificate for successful candidate (Aoyama Gakuin Research Center manger).
- Improvement feedback to training evaluation result.

3.3 Practice a Training Curriculum

Figures 4 and 5 show the sceneries of training seminar for Chinese manager in Japan.



Figure 4. Scenery of Toyota production system Doujo training.

Table 1. Training seminar curriculum for Chinese manager in Japan

Data	Time	Schedule	Staying	Content
9/12(Sun)		Airport arrival		
		Movement of airport-hotel	Nagoya	
9/13(Mon)	8:30-12:30	TPS Doujyo training (A-Group)		◦ Discovery of uselessness in simulation line of radiator,
		Sightseeing (B-Group)	Nagoya	◦ learning of the improvement technique, basic
	13:30-17:30	TPS Doujyo training (B-Group)		◦ explanation of TPS, combinations chart, Tact time etc.
		Sightseeing (A-Group)		◦ By two lecturers who acquired experience for 40 years in Toyota
9/14(Tue)	9:00-11:00	Factory visiting (Toyota Corporation)		◦ Motomachi factory. Operation form August, 1959
	13:30-16:00	Factory visiting (Honda Corporation)	Nagoya	◦ 7,681 employees, 80,000 during year
9/15(Wed)	10:00-12:00	Toyota techno museum		◦ Visiting establishment ground of Toyota automatic weaving machine and exhibition of fiber
	12:00-12:30	Lunch	Nagoya	◦ and vehicle technology
				◦ Learning of historical of Toyota and TPS
	13:30-15:30	Factory visiting (Asahi Breweries, Ltd)		◦ Visiting the manufacturing process of the beer
				◦ Which has a tasting corner
9/16(Thu)	9:30-11:30	Factory visiting (Denso Corporation)	Tokyou	◦ Learning improvement activity and approach to TPS
	Afternoon	Movement (Nagoya-Tokyou)		◦ Visiting production line of parts related to speedom eter, air conditioner and engine.
9/17(Fri)	9:30-12:00	Seminar (Aoyama Gakuin University)	Tokyou	◦ Practice and new development of Toyota production system
	Afternoon	Sightseeing		◦ Lecture concerning Japanese TQM, organization of industry, and manager reader ship
9/19(Sun)		Homecoming		



Figure 5. Souvenir picture after seminar of Aoyama Gakuin University.

Table 1 shows the developed training curriculum. The main three training contents are shown below.

In TPS Doujyo training, the improvement technique, basic explanation of TPS, combinations chart, tact time, etc. are learned. Also, uselessness is discovered in production site where Toyota assembly production line was imitated.

Factory visiting include Toyota, Honda, the Toyota Techno Museum (industrial technological pavilion), Asahi Breweries Ltd., and Denso that are the representative company in Japan.

In Aogaku simmer, Prof. Tamaki lectured concerning Japanese TQM, organization of industry, manager leader ship, and practice and new development of TPS.

To experience traditional and present cultures of Japan, sightseeing and shopping were set in the training curriculum.

3.4 Evaluation of Educational Program

As an evaluation of this educational program, a questionnaire was done by learners. The criterion of questionnaire has five levels: I, not interested; II, interested only a little; III, some interest; IV, interesting; and V, interested very much.

Figure 6 shows Chinese manager's interest degree to the contents of training tour. From Figure 6, it can be noted that the high ranks of level V (interested very much) are show as follows:

- 1st place: Factory visiting (Denso Corporation)
- 2nd place: TPS Doujo training
- 3rd place: Seminar (Aoyama Gakuin University)

From Figure 6, it also can be noted that the learner of Chinese manager are interested in visiting production

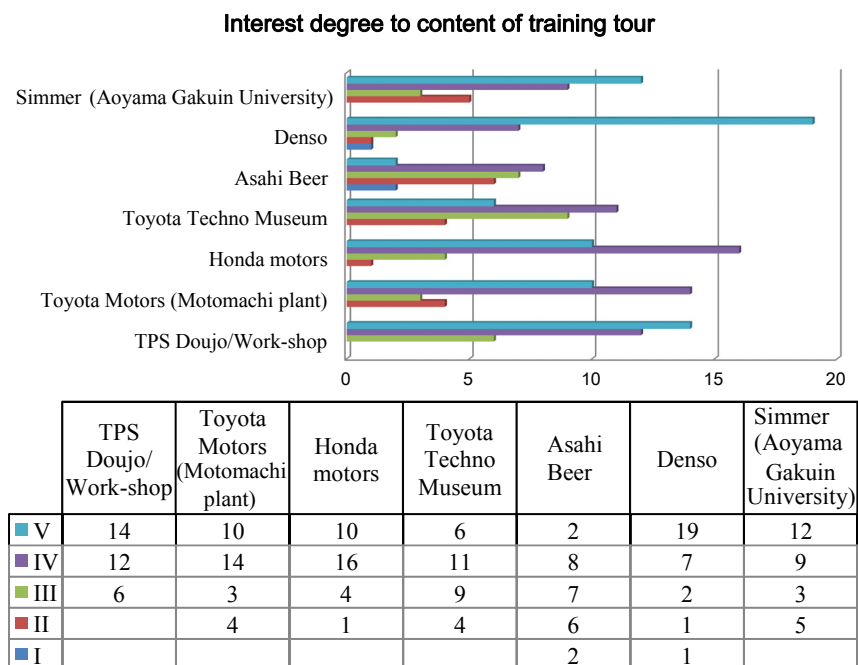


Figure 6. Questionnaire result of Japanese corporate training of Chinese manager (level I, not interested; II, interested only a little; III, some interest; IV, interesting; and V, interested very much).

site, practicing experience which will lead to own production improvement activity, production strategy from science aspect, management leadership.

4. CONCLUSIONS

In improving the collaboration and sustainability of global supply chain management, educating and training managers capable of leading international cooperation business becomes an important problem. In this paper, we considered the international manufacturing training in China. First, the current state of Chinese company training was analyzed based on the literature research and field investigation. Then, based on the research of universities and companies in China, a design of global manufacturing education and training was proposed. Finally, education design was evaluated by applying to an international education and training project of Aoyama Gakuin Human Innovation Consulting Inc. and VMTA. The effectiveness of the proposed education program was confirmed.

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