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## Evaluation of a Western training concept for further education in China

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### Abstract

This paper deals with the evaluation of a western training concept used by a German automobile organization for further education in China. As education in China is much more teacher-centered than in Western countries, the question for analysis is whether Chinese learners can adapt their learning style when faced with a learner-centered teaching style. We focused on three main aspects in which western training concepts differ from those used in China: collaborative learning, self-regulated learning and instructional support. Results showed that Chinese learners were able to adapt to a different teaching style, even though they were somewhat overtaxed by self-regulated and collaborative learning. Therefore, instructional support is very important for their learning success. Further on, there are first hints how to improve the training concept considering the cultural differences.

### 1. Introduction

As the globalization of the market increases, it is becoming more necessary to develop trainings which are applicable to different cultures. „As more and more organizations do business globally, training international employees becomes a critical issue for business success“ (Huang 1996:13). In recent years, China has developed into a very important marketplace for many companies. But even though there is a large volume of workers, they are often unskilled (Xu 2003). For this reason, it is challenge for companies to train their workers to produce highly trained employees. The central question is, whether it is possible to apply trainings that are based on a western perspective of teaching and learning in an eastern country such as China. While western learning concepts focus on active and constructive learning to foster knowledge application (Reinmann-Rothmeier / Mandl 1996), eastern concepts are mainly characterized by ex-cathedra teaching (Cheung / Lau 1985, Cortazzi / Jin 2001, Ho 2001). Hence, the question is whether it is possible for organizations to train their employees of a different culture (i.e. Chinese) in the same way as they train their employees in a western country. This is the main focus of analysis in this study.

### 2. Western and Eastern concepts on teaching and learning in further education

To find out how far cultural differences may influence the success of trainings, we must first take a closer look on the differ-

ences between Western and Eastern concepts of teaching and learning.

## 2.1. Western concepts of teaching and learning

In further education, Western concepts of teaching and learning focus on knowledge application. The transfer of acquired knowledge to the workplace is one main demand in designing powerful learning environments (De Corte 2003), because often, the knowledge learned in further education stays inert (Whitehead 1929). Therefore, learning environments are increasingly designed in a learner-centered way (Bransford / Brown / Cocking 1999, Pellegrino 2003). In this respect, learning is considered as a process with the following six characteristics (Reinmann / Mandl 2006):

- Learning is an active process which only takes place, when learners are actively engaged in learning.
- Learning is a constructive process, because learners have to connect new knowledge with their pre-knowledge to construct meaning which is necessary for learning.
- Learning is a self-regulated process, because learners have to regulate and control their learning process on their own.
- Learning is a situated process, because it is always linked to a specific situation and context, in which learning takes place.
- Learning is a social process, because knowledge is always disseminated from other people in a social situation.
- Learning is an emotional process, because learning only takes place, when learners are motivated and in a good mood to learn.

These characteristics of learning are constructivist. This means that learners do not acquire knowledge by participating in a learning scenario, but only by actively constructing and processing the learning material (Rogoff 1990, Resnick 1991, Greeno 1992). Therefore, learning scenarios must consider the individual learner to be successful.

According to Hofstede (2006) western countries can be classified as individualistic. This means that the ties between the individuals are loose. People are expected to superordinate their own interests and their immediate family. Individualist societies emphasize "I" consciousness, emotional independence, autonomy and individual initiative. Contrary to collectivistic cultures, individualistic cultures place more value on the satisfaction and expression of the individual's needs than on conformity to public norms (Triandis 1989, 1995, 1996, 1997, 2001).

In western cultures acquiring autonomy, self-esteem, self-reliance and assertiveness are important socialization goals (Chen et al. 1998). Children are encouraged to be independent, assertive and individual. That is why individualistic countries tend to focus on individualistic teaching approaches that allow learners to participate actively (Hofstede 1986).

The individualistic orientation of western countries can be traced back to liberalism. Liberalism blossomed in western culture as the primary philosophy which represents the concept of self and society (Kim 1995). Liberalism places a particular emphasis on the sovereignty of the individual.

## **2.2. Eastern concepts on teaching and learning**

Education in the Eastern culture is more authoritarian and teacher-oriented than learning in the Western culture (Kelly / Wong / Pratt 1997). Studies in China (Stevenson / Lee 1997), as well as in Hong Kong (Mok / Ko 2000, Cortazzi / Jin 2001, Ho 2001) confirm the assumption that the learning process is strongly controlled by the teacher. Learning results from a virtually one-way process of teaching. There are no equal 'learning partnerships' (Mok et al. 2001) where learners have the opportunity to ask questions or interrupt when they do not understand the material. "The general view is that in Asia the teacher's role is to teach, teachers are expected to set rules. Students rely heavily on the teacher and seek specific instructions. [...] The teaching style is didactic and teacher-centered" (Nield 2004:190).

While in Western culture learning is a constructive process from the very beginning, in Eastern culture, learning is a stepwise process: First, learners have to acquire basic knowledge before they can develop analytical and critical thinking abilities, which are necessary to construct knowledge on their own. "Students need a sound factual knowledge base on which to build analytical skills and critical thinking. This could be called a step-by-step intellectual approach" (Kelly 1997:4).

Even though it seems that learners in China are not as involved in the learning process as learners in the Western culture, their performance is high (Stigler / Fernandez 1995, Harmon et al. 1997, Stevenson / Lee 1997). The question is, why this is the case and which special cultural characteristics are important in this context. To gain further insight into the cultural specificity of the Eastern culture, we present three main issues: Performance orientation, ambition of self-perfection, and reward structures.

### **2.2.1. Performance orientation**

In Eastern culture performance orientation is not based on individual motivation for learning, but on a collectivistic duty. „[...] [F]ailing examinations is seen not only as a personal failure, but a failure that reflects negatively on one's entire family“ (Aguinis / Roth 2005:154). In China as a collectivistic society (Triandis 1995) every individual is influenced by its social network in such a way that high performance is the duty of everybody to be part of a society (Lin-Huber 2001). Based on the ideology of communism (Hanisch 2003), individual preferences are put back in favor of society. This can be seen in families. Performance orientation is very important for families, because the performance of children functions as a social and an economic base. “Within the Chinese family [...] an individual represents the family's social reputation as well as its economic viability into the future“ (Pratt / Kelly / Wong 1999:254).

### **2.2.2. Ambition of self-perfection**

The ambition to perfect oneself is the main living aim for Chinese people according to Lee (1996:34): „The purpose of learning is to cultivate oneself as an intelligent, creative, independent, autonomous being.“ Learning is a process in which they can reach this aim. The Chinese model of learning called HXX (hao-xue-xin: learning with heart and soul) focuses on the seeking of knowledge and the passion for life-long learning. Learning is linked to diligence, accuracy, concentration, and persistency. The lifelong personal endeavor toward self-perfection was confirmed by a comparison study where Chinese students achieved higher scores in their learning ambition than Australian students (Kember / Gow 1991) and in a similar comparison study with Singapore (Chang 1989). Such high ambition for self-perfection is manifested in deep learning strategies. As several studies show, East-Asian learners use more often deep-level learning strategies than learners in the USA or Australia (Stevenson / Lee 1996, Smith / Smith 1999). Understanding the content is the main aim Chinese learners want to achieve when they engage in learning, despite repetition or memorization practice (Marton / Dall'Alba / Kun 1996, Dahlin / Watkins 2000).

### **2.2.3. Reward structures**

Very closely related to performance orientation and the ambition of self-perfection is the reward structure in the Eastern culture. Because everybody is very engaged in learning and regards it as his duty to his family and society, learning success is very important. Failure on the other hand is explained with lack

of learning motivation, and therefore often punished very hard by parents and teachers (Chen / Rubin / Li 1997). "Achievement through hard work is more highly valued than achievement through high ability" (Salili 1996:92). Learning competence is as ability not so important, because it could be compensated by hard work (Salili 1996). Diligence is a very stable predictor for learning success (Hau / Salili 1991, Salili / Mak 1988). Because of such controllable factors, Chinese mothers expect very much from their children as a study of Chao (1996) showed.

### **3. Main aspects for teaching and learning**

Recapitulating, we can say that teaching and learning in eastern countries is much more teacher-centered and authoritarian than in western countries. As the performance of Chinese learners is high (Stiegler / Fernandez 1995, Harmon et al. 1997, Stevenson / Lee 1997) the question is, whether the transfer of western instructional approaches to eastern culture is of relevance at all. But if the focus of teaching and learning is being shifted [because factual knowledge is not as important any more as applicable knowledge, and the retention of factual knowledge is therefore likewise not as important anymore] pedagogical reforms become necessary:

"An important educational goal is the development of educated citizens capable of learning independently; transferring their learning across contexts; and working with the production of knowledge. There need to be changes in instructional approaches concomitant with changes in social-cultural and educational contexts." (Chan 2001:200)

Western research has shown that designing learning environments in a learner-centered way can positively impact the transfer of knowledge. But it is clear that integrating learner-centered methods such as collaborative and self-regulated learning or providing a different form of instructional support such as coaching do not correspond to the traditional eastern teaching and learning practices. In order to clarify these concepts further, collaborative learning, self-regulated learning and instructional support in the context of China are discussed in the following section.

#### **3.1. Collaborative learning**

There are different views relating to the examination of collaborative learning. On the one hand, it is assumed that collaborative phases correspond to the collectivist culture in China (Stevenson / Stigler 1992, Biggs 1996), even though it is seldom evoked in the classroom (Wong 2004). Since Chinese learners are used to adapting to their social environment (Chan 2001), collaborative learning is not difficult for them. Furthermore,

they are taught that group performance is very important: When an individual fails, the whole group loses face (Ho 1993, Salili 1996).

In contrast, Lin-Huber (2001) assumes that Chinese learners prefer conformity and harmony in a group. In this respect, counter-arguments or confronting statements, aggressive conversation, critique and conflicts are avoided, which are sometimes necessary to achieve a better group solution (Doise / Mugny 1984).

To summarize, there are different assumptions about the implementation of collaborative learning phases in China. The main aspect is that collaboration is part of the cultural mentality in China, even though there is no ambition to debate in an extensive way when collaborating.

### **3.2. Self-regulated learning**

When analyzing self-regulated learning in China, we must again highlight that teaching in China is mostly teacher-centered and ex-cathedra. Hierarchical structures determine education. As self-regulated learning is not valued very highly in China, phases of learner-centered activity are rare: "It is also generally accepted that in most Hong Kong schools, qualities such as independence, individuality and creativity, if not actively discouraged, are less highly valued than obedience, conformity, discipline and diligence" (Chan / Spratt / Humphreys 2002:2). Chinese learners are often described as silent and passive in the classroom, since they expect that their knowledge acquisition will be lead by the teacher (Ho 1993, Scollon / Scollon 1994, Biggs 1996, Biggs / Watkins 2001). The main reason for this behavior are the teacher's authority (Ho / Peng / Chan 2001) and a socialization in which conformity is most important. "[...] [T]he common use of shaming, ostracism and moral education in Chinese homes and schools led to the development of strong internalized control, conformity and reluctance to express hostility towards authority among Chinese students" (Ho 2001:105).

Even though Chinese learners are not used to learn in a self-regulated way, they are not automatically passive. They are used to deal with content independent from the teacher (Jin / Cortazzi 1998), because in China learning takes place in four stages: Memorization, understanding, application and questioning or modifying what is to be learned. Due to the importance to save face, learners ask rarely questions in class, because it may include an implicit critique of the teacher. They prefer asking questions or asking for support after class privately.

To conclude: "Having been socialized into the Chinese culture of learning, it is not easy for the Chinese students to dramatically change their role conception to accept autonomy" (Li 1999:18), which is the basis for self-regulated learning.

### **3.3. Instructional support**

Concerning instructional support it should be emphasized that there are two reasons (Hofstede 2006) why Chinese teachers have a very high position and authority (Ho 2001, Salili 2001): First of all, the historical development and cultural heritage of China has been dominated by a central power. And secondly, the Confucius' philosophy describes a disparity in human society. Therefore, the Chinese culture is characterized by hierarchical structures which are also manifested in classroom: Disagreement and criticism from the learners is not accepted, praise is rare, and blame is common (Ho 2001, Salili 2001). "Praise cuts of discussion and highlights the teacher's role as the authority. It also encourages children to be satisfied with their performance rather than informing them about where they need improvement" (Stevenson / Stigler 1992:191).

Teachers in China determine an individual's entire education by being very strict and authoritarian, but also through caring (Watkins 2000). Chinese teachers are responsible for the development of the whole person in relation to cognitive, affective and moral aspects (Gao / Watkins 2001). This could be seen, when teachers talk with only one student privately. Then, their interaction is friendly, full of respect and sense of responsibility (Kelly / Wong / Pratt 1997).

Instructional support is very important for Chinese learners, because it is one main duty of the teacher. Structure and guidance is one aspect (Chan 2001), caring and fostering the individual development the other one (Ho 2001). But as can be seen: Learners would not ask their teachers in front of the class to give help, because they want to save their teacher's and their own face.

## **4. After-sales Training**

### **4.1. Relevance of the after-sales training**

For companies which sell their products world-wide, it is necessary to have highly educated employees to guarantee the satisfaction of their clients. When we look at the automobile industry, the repairing of cars is one main important aspect of relevance. Therefore, employees need after-sales trainings to increase their quality in services. Especially technical trainings are



of relevance. In this study, we take a closer look at a training course on automotive electrics and electronics. This training aimed to provide workers with the skills needed to repair, service and diagnose faults in automotive electrical systems and components.

#### **4.2. Tasks of the Training and didactic design**

The training was conceptualized for four days from 9 am to 5 pm. The content included the following topics: Analogue/digital signal, signal level, switching element, power amplifier, operational amplifier, integrated circuit, storage, shift register, micro-computer/micro-controller, data communication, and bus control unit. To teach these topics, the didactic design focused on collaborative and self-regulated learning as well as on instructional support.

- Collaborative learning: Learners had to solve problems collaboratively, mostly working in teams of two. They had to exchange their ideas on the solution for the problem before the problem was solved by group of learners as a whole.
- Self-regulated learning: Learners had to solve authentic and practical problems at the car with the help of electric and electronic test and measuring equipment. Self-regulated learning was mainly necessary when collaborating with a partner.
- Instructional support: The trainer supported the learners by asking them whether they had any comprehension problems. After the problem solving, the trainer summarized the correct solution and gave feedback to the participants.

#### **5. Question**

The main question we are interested in is, whether a learning concept based on Western assumptions of teaching and learning could be integrated in China, where learners are used to Eastern training concepts. More precisely, we took a closer look at three aspects which are mainly different in Western and Eastern culture: collaborative learning, self-regulated learning and instructional support. Learners in Western cultures are used to learn collaboratively and in a self-regulated way. Closely connected to this is their demand to get instructional support. The culture in China is very collectivistic. Therefore, we assume that collaborative learning is very much accepted by Chinese learners. But they will have more problems in their self-regulated learning, because usually their learning process is strictly controlled by a teacher. To compensate such deficits,

instructional support is very important for their learning success. In contrast to learners in Western countries, they are not used to demand such instructional support, when they notice their misunderstandings.

## **6. Method**

### **6.1. Sample**

The sample included 21 participants who took part in the automotive training offered two times in Beijing in October 2005. The first training consisted of 10 participants, the second of 11. Both groups were taken together for further analyses, because the training and the trainer were the same. Further on, participants did not differ in their pre-requisites, which is a main influencing factor of learning (Ertl / Kopp / Mandl 2006). All participants were male and the majority had four years of professional experience ( $M = 49.95$  months,  $SD = 33.65$  months).

### **6.2. Design**

The study was of a pre-post-design. Before the training, participants were given a questionnaire about the main three aspects which were of interest concerning teaching and learning: Collaborative learning, self-regulated learning and instructional support.

After the training, participants again received a questionnaire with these three aspects. The rate of return was 100 per cent. All 21 participants filled in both questionnaires.

### **6.3. Data collection**

The two questionnaires comprised closed-ended questions on a five-point Likert scale (Bortz / Döring 2005). They measured the degree of agreement with a rating scale from "totally disagree" to "totally agree". The coding was from 1 for totally disagree to 5 totally agree. In addition, participants could reply "I do not know". The ability to give this response should reduce the ambiguous interpretation of moderate ratings (Bortz / Döring 2005).

The first questionnaire comprised the scales collaborative learning, self-regulated learning, and instructional support. All three dimensions were subdivided into the attitude toward these three kinds of learning and the experiences with it.

Collaborative learning was measured with 3 items on the preference of collaborative learning like "I like working in groups" with a Cronbach's Alpha of .73, and 4 items on the experience

of collaborative learning like “My experiences with collaborative learning are positive” (Cronbach’s Alpha .60).

Self-regulated learning comprised 3 items on the attitude towards it like “Self-regulated learning is necessary to understand learning content” (Cronbach’s Alpha .60) and 3 items on experiences like “My experiences with self-regulated learning are positive” (Cronbach’s Alpha .57).

Instructional support was measured with 4 items on attitude (“I accept instructional support”; Cronbach’s Alpha .70) and 4 items on experiences (“My experiences with instructional support are positive”; Cronbach’s Alpha .74).

The second questionnaire was used after the training to estimate its design concerning collaborative, self-regulated learning, and instructional support. Collaborative (Cronbach’s Alpha .95) and self-regulated learning (Cronbach’s Alpha .87) were both rated with 3 items, while the dimension instructional support was measured with 4 items (Cronbach’s Alpha .70). All items were explicitly related to the training like “I liked collaborating in the training” for collaborative learning, “Self-regulated learning phases were helpful for understanding the content of the training” for self-regulated learning, and “I accepted instructional support from the trainer” for instructional support.

## 7. Results

To see whether the training concept was successfully implemented in Eastern culture, participants assessed collaborative learning, self-regulated learning and instructional support before and after the training.

### 7.1. Collaborative learning

Participants rated collaborative learning very highly in the beginning ( $M=4.79$ ;  $SD=0.39$ ). They already had experiences with collaborative learning ( $M=4.24$ ;  $SD=1.04$ ) and these were positive ( $M=4.18$ ;  $SD=0.61$ ). But they also thought that they were a little bit overtaxed by collaborative learning ( $M=3.52$ ;  $SD=1.25$ ).

After the training, collaborative learning was rated with a score of 4.87 ( $SD=0.32$ ), which was even higher than in the beginning. Furthermore, learners requested more phases of collaborative learning ( $M=4.62$ ;  $SD=0.59$ ) during the trainings.

There were no significant or substantial changes in the assessment of collaborative learning in the two points in times – before and after the training.

## 7.2. Self-regulated learning

Self-regulated learning was middle-rated in the beginning ( $M=3.21$ ;  $SD=0.91$ ). Learners also had experiences with self-regulated learning ( $M=3.81$ ;  $SD=1.17$ ) and these experiences were moderate ( $M=3.79$ ;  $SD=0.83$ ). They also felt somewhat overtaxed by self-regulated learning ( $M=3.60$ ;  $SD=1.23$ ).

With a score of  $M= 3.52$  ( $SD=1.22$ ), self-regulated learning was not rated much higher after the training. Even though this rating was much lower than the rating of the collaborative learning, participants were of the opinion that more self-regulated phases would improve the training ( $M=4.05$ ,  $SD=1.09$ ).

When we have a closer look at differences between the first and the second rating, there were no significant effects of the training. However, self-regulated learning was rated a small degree higher than in the beginning.

## 7.3. Instructional support

Instructional support concerning content-specific or emotional aspects was very positive in the beginning ( $M=4.83$ ;  $SD=0.31$ ). The Chinese participants appreciated the instructional support, especially the structuring and leading of the teacher ( $M=4.95$ ;  $SD=0.21$ ). The participants' experience with instructional support was very high ( $M=4.25$ ;  $SD=0.59$ ). That means that learners always learned when they were supported by an instructor.

Although the rating of the instructional support after the training was very positive ( $M=4.75$ ;  $SD=0.41$ ), the Chinese participants would have liked even more instructional support ( $M=4.57$ ;  $SD=0.68$ ).

There was a decrease in the ratings of instructional support from the first to the second questionnaire. However this effect was not significant.

## 8. Summary and Discussion

### 8.1. Relevant cultural aspects for interpreting the data

Before we summarize the results and discuss them, there is one main aspect to be considered: The cultural differences in using questionnaires. In Eastern cultures, there are mainly three reasons, why there could be a cultural bias in answering questionnaires: Social desirability, answering tendencies and acquiescence.

Social desirability is due to the fear of social condemnation or due to the desire of gaining social acceptance. Individuals try to

answer in culturally-sanctioned ways (Crowne / Marlowe 1964). There are two steps relevant in this context (Johnson / van de Vijver 2003): Based on cultural experiences, individuals assess, whether the questionnaires include socially desirable aspects. In a second step, there are individuals who try to answer the questionnaire as exactly as they can, and others who answer it according to the social norm.

Eastern cultures are associated with socially desirable response styles, because of the increased conformity in collectivist cultures (Bond / Smith 1996), a reduced motivation to provide outside group members with accurate information (Triandis / Suh 2002) and a lower ambition to self-disclosure (Smith / Bond 1998).

The tendency to say yes, respectively the acquiescence, can be assumed as the individual's tendency to agree with questions regardless of the item or aspect. This learned behavior must be seen in connection with social conformity (Uskul / Oyserman in press). Societies which are based on interdependence, and social harmony, and are characterized by fear, uncertainty, and strict norms and rules, are pre-determined for acquiescence. There is also a correlation to collectivist cultures (Smith 2004).

Against this background, we interpret the results of this evaluation. This means that even small differences in the ratings are seen as changes in assessment.

## **8.2. Summary and discussion of the data**

When we analyze collaborative learning, we see that the already very high rating increased even further due to the training. Moreover, we discovered that the Chinese participants would have liked even more collaborative phases in the training. Our explanation for this is that Chinese learners like collaboration, because they have been socialized in a collectivist culture in which groups play a crucial role in social life. Therefore, they accept this kind of learning to quite a high degree.

In contrast to this, self-regulated learning was rated much lower – both before and after the training. Even though the rating increased a small amount, we could not assume that learners fully accepted these phases. Another finding showed that the Chinese learners felt overtaxed when they had to learn in a self-directed manner. These experiences with autonomous learning could be ascribed to the cultural differences in the teaching style. Since in China the learning process is mainly directed by the teacher, Chinese learners felt somewhat overtaxed when they had to regulate and control their learning process on their own.

The relevance of instructional support achieved almost the maximum score. That gives us an indication of how important the guidance of the teacher is for Chinese learners. However, the assessment of the instructional support decreases during the training. That means that learners were not as satisfied with the teaching style of this training as they were before the training took place. This could be explained by two reasons: First, it is possible that Chinese learners expect teachers to extensively guide their learning process because they are culturally used to it. And secondly, it is possible that Chinese learners could not adapt to the Western teaching style in which learners just ask for help when they need it. Even though the trainer offered help, learners frequently did not accept it, because they wanted to save face for the teacher.

In summary, the results confirmed our hypotheses that cultural differences play an important role when transferring training concepts. To avoid such phenomena, cultural specifics should be taken into account.

### **8.3. Further improvements and outlook**

As mentioned beforehand, the cultural differences are very important when transferring a training concept from the Western to an Eastern culture. Like Michael Sadler already outlined one century ago: "We cannot wander at pleasure among the educational systems of the world, like a child strolling through a garden, and pick off a flower from one bush and some leaves from another, and then expect that if we stick what we have gathered into the soil at home, we shall have a living plant" (Sadler 1900:310).

To guarantee the acceptance and to achieve sustained success of the training, the following aspects should be taken into account:

Learners should be gradually introduced to the different teaching and learning culture to avoid problems and the potential for reduced acceptance. This includes that the teacher explains the purpose and process of the use of new methodologies and that he offers adequate instructional support (Kember 2000).

On the other hand the western training concept should be adapted to the learner's culture. This includes the notion that different communication and interaction practices should be considered when developing a western teaching concept. As Chinese learners are not used to asking questions or communicating with the teacher during lessons, there was hardly any communication in class between teacher and learners in this training. Therefore, the design of the learning environment must consider these differences. One method is giving learners

the possibility to ask questions anonymously (Aguinis / Roth 2005).

These suggestions are only a selection of further improvements. But generally spoken, to get further insights into cultural differences, more research must be done in this field which should focus among other things on experimental studies and a higher sample.

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