

## Chapter #13

### RELATION OF LEARNING STYLE TO INTERCULTURAL SENSITIVITY AND INTERNATIONAL ATTITUDES AMONG JAPANESE UNDERGRADUATES

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#### ABSTRACT

This study empirically explored how learning style relates to intercultural sensitivity and international attitudes in the context of a Japanese university. A total of 109 undergraduate students completed three questionnaires: Kolb's Learning Style Inventory, Chen and Starosta's Intercultural Sensitivity Scale, and Yashima's International Posture as a measure for international attitudes. Because the factor structure with constituent items of the Intercultural Sensitivity Scale was unresolved, we first examined the configuration of its latent constructs and then identified four underlying components. In terms of intercultural sensitivity, results of regression analysis illustrated that a learning style with a focus on acting over reflecting significantly negatively related to Anxious Interaction and marginally related to Affirmative and Enjoyment Interaction. Results for international attitudes revealed that the same learning variable was significantly associated with Intercultural Approach Tendency, Interest in International Vocation, and Willingness to Communicate to the World, whereas the learning variable of thinking versus feeling was marginally negatively related to Intercultural Approach Tendency. In conclusion, the study suggests that the learning style dimension of action versus reflection has a stronger influence on intercultural sensitivity and international attitudes than the learning dimension of thinking versus feeling.

*Keywords:* learning style, intercultural sensitivity, international attitudes, Japanese undergraduates.

#### 1. INTRODUCTION

Through various initiatives over the past 25 years, the Japanese government has worked to internationalize Japanese higher education. The first initiative involved an increase in the number of international students from 10,000 in 1983 to 100,000 (Rothman, 2020). That goal was achieved in 2003 (MEXT, 2004). The subsequent initiative established the goal of receiving 300,000 international students from foreign countries until 2020 and increasing the number of Japanese students who study abroad (MEXT, 2008). In line with this initiative, the Japanese government offered a global human resource development program through selected Japanese universities. Since the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) articulated the magnitude of shifting towards globalization of Japanese higher education, many universities have continued to advance initiatives to prepare their students for globalized contexts. To facilitate the government initiative, the Japan Student Service Organization with the cooperation of Japanese firms launched a study abroad program for Japanese students in 2014. The program intends to send abroad a total of 180,000 Japanese university and high school students (MEXT, 2020a).

The implementation of the government strategy has allowed Japanese educational institutions to help Japanese students develop English proficiency (Toyama & Yamazaki, 2019a) with an emphasis on frequent communication (MacWhinnie & Mitchell, 2017). Although the number of foreign students in Japan has increased in higher educational institutions over the past few decades (MEXT, 2020b), the communication orientation in the strategy may be challenging for Japanese students due to their feeling of shyness in classroom situations (Doyon, 2000), which is a Japanese cultural tendency (Yamazaki, 2005), and more generally, due to Japanese ethnic identity (Goharimehr, 2018). Recent studies have further indicated that Japanese students have various complex perceptions related to the importance of intercultural understanding (Numata, 2013) and not one-size-fits-all attitudes towards cross-cultural matters (Kurahashi, 2017). It is crucial to foster students' capability to deal with cross-cultural and international situations based on a social psychological perspective of interpersonal relations, communications, behaviors, and attitudes (Yashima, 2001). It is thought that Japanese students need to learn in cross-cultural contexts where they feel, think, and act to acquire demanding competencies and knowledge that address intercultural situations. In line with this perspective, our study sought to understand if there is a relationship between a way of learning, which is called *learning style*, and psychological aspects of Japanese university students in terms of cross-cultural communication.

Research on the relationship between learning style and cross-cultural psychological aspects is not new. Indeed, literature in the domain of cross-cultural studies has shown that learning style is related to cross-cultural communications of high-context versus low-context dimensions (Yamazaki, 2005), cross-cultural psychologies of independent self versus interdependent self (Yamazaki, 2005), work satisfaction in an international context (Yamazaki & Kayes, 2010), and cultural intelligence (Li, Mobley, & Kelly, 2013). More generally, Barmeyer (2004) discussed that "learning styles are culture-bound cognitive schemes" (p. 591). However, when turning our attention to intercultural sensitivities and international attitudes examined in Japanese educational contexts (see Elwood & Monoi, 2015; Suzuki & Saito, 2016; Yashima & Zenuk-Nishide, 2008), we found very little research on how learning style relates to those psychological variables. The current study attempted to fill this gap.

In this study, we assumed that individuals learn, shape, and develop intercultural sensitivity and international attitudes according to their environment. Since individuals' intercultural sensitivity changes and develops over time in cross-cultural circumstances (Straffon, 2003), several studies have examined the effect of cultural sensitivity training on counselors' relationship with clients (Wade & Bernstein, 1991), on foreign language teaching (Bordie, 1970), and on health care workers (Bohanon, 2018). Similarly, with regards to international attitudes, the literature has suggested that individuals change their attitudes through diversity training where they learn attitudes. For example, the study of Tan, Morris, and Romero (1996) revealed that diversity training was effective in changing participants' attitudes and knowledge. Thus, it can be thought that intercultural sensitivity and international attitudes are learned based on experiences from participating in training programs. As learning involves "a holistic process of adaptation to the world" (Kolb, 1984, p. 31; Kolb & Kolb, 2017), it seems possible that a particular style of learning is related to intercultural sensitivity and international attitudes that can be learned in order to adapt to an international environment. Yet, we do not know much about how learning style is associated with these two cross-cultural psychological variables in the context of Japanese higher education. Accordingly, this study explored two research questions:

- How is learning style related to intercultural sensitivity in Japanese higher education?
- How is learning style related to international attitudes in Japanese higher education?

## 2. LITERATURE REVIEW

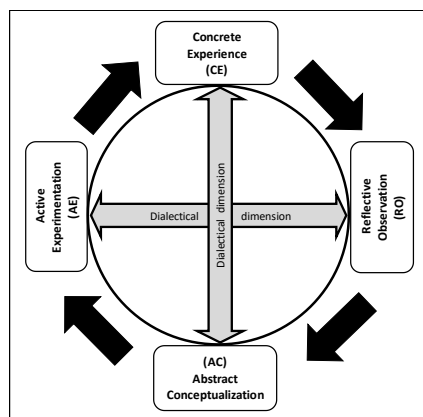
### 2.1. Learning style

Learning style is defined as “an individual’s preferred way of responding (cognitively and behaviourally) to learning tasks which change depending on the environment or context” (Peterson, Rayner, & Armstrong, 2009, p. 520). Over decades, many scholars, educators, and practitioners have focused on learning style (Kolb & Kolb, 2017), and various types of learning styles have been theorized (Peterson et al., 2009). Hawk and Shah (2007) argued that there are six learning models represented as a typical learning style paradigm (see Dunn & Dunn, 1978; Entwistle & Tait, 1995; Felder & Silverman, 1988; Fleming, 2001; Gregorc, 1979; Kolb, 1984). For example, learning style is relevant to individuals’ human function in order to process information through concentration, internalization, and retention (Dunn & Dunn, 1978). In addition, it is related to individuals’ skills or capabilities such as kinesthetic, aural, visual, reading, and writing (Fleming, 2001)—which was called the VARK learning style model (Fleming, 2001). Kolb (1984) illustrated that learning style describes individuals’ preferred approach to knowledge creation and skill acquisition through interaction between the person and the environment. Although different models of learning style exist with different definitions (Honigsfeld & Schiering, 2004), Demirbas and Demirkan (2007) explained that the approaches to the development of a learning style model used by theorists and researchers have been similar. Among multiple learning models proposed in the literature (Cassidy, 2004), we used Kolb’s (Kolb, 1984; Kolb & Kolb, 2017) experiential learning theory (ELT) and model because it has been applied in numerous cross-cultural studies (Yamazaki, 2005), which are thought to be associated with this study. Also, uniquely, Kolb’s ELT is characterized by a focus on individuals’ experiences as a source of learning (Kolb, 1984; Kolb & Kolb, 2017).

In developing ELT, Kolb drew on the perspectives of influential scholars including William James, John Dewey, Kurt Lewin, Jean Piaget, Lev Vygotsky, Carl Rogers, Paulo Freire, Carl Jung, and Mary Parker Follett (Kolb & Kolb, 2017). Kolb’s learning model consists of four learning modes: concrete experience (CE), reflective observation (RO), abstract conceptualization (AC), and active experimentation (AE). The CE mode requires feeling and sensing in the immediate experience of a learning situation, while the AC mode, in contrast, calls for thinking and using logic to form concepts based on the experience. The two modes in this dimension involve different ways of grasping experience, and they are dialectically opposed to each other. The RO learning mode requires reflecting on the experience, while the AE mode involves action to examine the conceptualized idea. The two modes in this dimension serve to transform an individual’s experience in a distinct way, and they are also dialectically opposed. Each person tends to prefer one learning mode over the other in each learning dimension.

In Kolb’s experiential learning model, the CE mode calls for grasping proximate experience, which leads to a foundation of reflection in applying the RO mode. Subsequently, the RO mode serves to transform the experience from apprehensive knowledge into comprehensive knowledge, which the AC mode does through employing logic and concepts. Then, the abstract form of comprehensive knowledge becomes a basis for the AE mode, which requires transforming abstraction to a new experience that the CE mode grasps. Figure 1 illustrates Kolb’s learning style model.

Figure 1.  
Kolb's learning style model.



## 2.2. Intercultural sensitivity and international attitudes

Intercultural sensitivity has been studied in the field of cross-cultural studies for several decades. Several scholars defined intercultural sensitivity as “a sensitivity to the importance of cultural differences and to the points of view of people in other cultures” (Bhawuk & Brislin, 1992, p. 414), “the ability to discriminate and experience relevant cultural differences” (Hammer, Bennett, & Wiseman, 2003, p. 422), and an “individual’s response to cultural differences and perspectives” (Straffon, 2003, p. 488). Since intercultural sensitivity is thought to be a skill set of intercultural competence (Moore-Jones, 2018), individuals can acquire and develop this ability in a learning situation. Within the cross-cultural literature, scholars have largely agreed that individuals who are more interculturally sensitive will become more interculturally competent (Wang & Zhou, 2016). Chen and Starosta (2000) developed the Intercultural Sensitivity Scale with 24 items. The scale was designed to measure individuals’ intercultural sensitivity as the affective component of intercultural communication, which is the core construct of an upper layer built on affective, cognitive, and behavioral aspects (Chen & Starosta, 2000). The Intercultural Sensitivity Scale has a five-factor structure: Interaction Engagement, Respect of Cultural Differences, Interaction Confidence, Interaction Enjoyment, and Interaction Attentiveness. However, several studies documented inconsistent factorial configurations, including a three-factor structure (Suzuki & Saito, 2016) and a five-factor structure with different constituent items (Petrovic, Starcevic, Chen, & Komnencic, 2015). In this study, we attempted to examine the configuration of the Intercultural Sensitivity Scale before applying it for analysis.

Since intercultural sensitivity is mainly related to emotions (Wang & Zhou, 2016), it seems to be relevant to the concrete experience (CE) learning mode of Kolb’s learning model that requires using feeling and sensing to catch immediate experience. However, intercultural sensitivity also involves the cognitive and behavioral facets of interaction (Wang & Zhou, 2016), as discussed earlier. In this regard, it is thought that intercultural sensitivity requires applying entire human functions of feeling, thinking, and acting; thus, it entails applying the learning modes of abstract conceptualization (AC) and active experimentation (AE), as well as the CE mode. It could be inferred that intercultural

sensitivity is related to learning style, but the question remains how learning style variables link with it, which corresponds to our first research question.

International attitudes have been investigated in the domain of English as a foreign language as the concept of International Posture proposed by Yashima (2002, 2009). This concept was influenced by Gardner's construct of Integrativeness, developed to identify individuals' attitudes towards cross-cultural or international situations/events (Denies, Yashima, & Janssen, 2015). The International Posture measure originally had five subscales corresponding to five factors. For this study, however, we eliminated the subscale of Ethnocentrism due to its low psychometric values, as reported by Yashima (2002). The other four factors of International Posture include Intercultural Approach Tendency, Interest in International Vocation, Interest in Foreign Affairs, and Willingness to Communicate to the World.

When considering the relationship between learning style and international attitudes, it seems important to understand the complexity of the structure of attitudes (see Ajzen, 1989). According to the tripartite model of attitudes, three components represent affect, behavior, and cognition (Breckler, 1984). Like the three aspects of intercultural sensitivity, when international attitudes are configured as those components, it would seem that international attitudes are also associated with learning style modes. Our second research question directly addressed this issue.

### **3. METHODS**

#### **3.1. Sample**

Participants for this study were 109 undergraduates of a Japanese university located near Tokyo. They belonged to the departments of business administration and information society. Seventy-three (67%) students were majoring in business management, including 19 sophomores (26%), 44 juniors (60%), and 10 seniors (14%), while 36 students (33%) were majoring in information society, including 31 (86%) juniors and 5 seniors (14%). Of the 109 participants, 44 (40%) were women and 65 (60%) were men. Their average age was 20.1 years ( $SD = 0.65$ ). In the spring 2019 semester, one of the authors explained the purpose of this study in class and distributed and collected survey questionnaires from the students. After gathering the survey questionnaires, the authors entered the data and then kept paper copies in a locked cabinet.

#### **3.2. Instruments**

The study applied three questionnaires—Kolb's (1999) Learning Style Inventory, the Intercultural Sensitivity Scale, and the International Posture measure—with the addition of demographic questions. To analyze the learning style of Japanese undergraduates, we used the third version of Kolb's (1999) Learning Style Inventory (LSI). The LSI is composed of 12 questions. Each question includes four choices that are consistent with the four learning modes. A sample LSI question is "When I learn, (1) I am happy, (2) I am careful, (3) I am fast, and (4) I am logical." Students are required to rank the four choices in order from 4 (most preferred) to 1 (least preferred). The degree of a student's learning tendency is calculated from the sum of the score for each learning mode. Subtraction of one total score from the other in the same learning dimension determines the student's relative learning preference (i.e., concrete experience vs. abstract conceptualization; reflective observation vs. active experimentation); the two dimensions are regarded as learning style variables in this study.

For the Intercultural Sensitivity Scale (Chen & Starosta, 2000), we examined its factor structure of 24 items through exploratory factor analysis, applying the method of maximum likelihood with the direct oblimin. The results showed that five factors were initially extracted. Then, we employed a technique of a factor loading of at least 0.5 due to the sample size of 109, the guideline of eigenvalues  $> 1$ , and consideration of items that had cross-loading with another factor. Consequently, we finalized four factors with a total of 15 items. Subsequently, confirmatory factor analysis showed a chi-square score of 210.04 ( $p < 0.01$ ), goodness of fit of 0.83, comparative fit index of 0.84, and root mean square error of approximation of 0.10. The four factors comprised Affirmative & Enjoyment Interaction (6 items), Anxious Interaction (3 items), Negative Perceptions (3 items), and Respect of Cultural Differences (3 items). The Cronbach's  $\alpha$  coefficients for those components ranged from 0.70 to 0.84, all of which were acceptable. A sample question item for Affirmative & Enjoyment Interaction is "I enjoy interacting with people from different cultures"; for Anxious Interaction, "I find it very hard to talk in front of people from different cultures"; for Negative Perceptions, "I think people from other cultures are narrow-minded"; and for Respect of Cultural Differences, "I respect the values of people from different cultures."

To investigate students' international attitudes, this study employed the International Posture measure developed by Yashima (2002, 2009). For this measure, the Cronbach's  $\alpha$  coefficients were 0.78 for Intercultural Approach Tendency (7 items), 0.72 for Interest in International Vocation (6 items), 0.58 for Interest in Foreign Affairs (4 items), and 0.66 for Willingness to Communicate to the World (6 items). A sample question item for Intercultural Approach Tendency is "I want to make friends with international students studying in Japan"; for Interest in International Vocation, "I want to work in a foreign country"; for Interest in Foreign Affairs, "I often read and watch news about foreign countries"; and for Willingness to Communicate to the World, "I have thoughts that I want to share with people from other parts of the world."

## 4. RESULTS AND DISCUSSION

### 4.1. Research question 1: Learning style and intercultural sensitivity

Regression analysis was used to determine how learning style relates to intercultural sensitivity, as well as how learning style and intercultural sensitivity relate to international attitudes. Results indicated that a learning style variable of more acting over reflecting (AE – RO) significantly related to Anxious Interaction ( $\beta = -0.26$ ,  $p < 0.01$ ) and was marginally associated with Affirmative and Enjoyment Interaction ( $\beta = 0.19$ ,  $p < 0.10$ ). However, other relationships between learning style variables and intercultural sensitivity variables were insignificant. This result implies that individuals who learn by using more action than reflection will have less anxiety when interacting with culturally different people and tend to have more Affirmative and Enjoyment Interaction. Table 1 summarizes results of the regression analysis.

Table 1.  
Results of Regression Analysis of Learning Style and Intercultural Sensitivity.

Variable entered	Dependent variables			
	Affirmative & Enjoyment Interaction	Anxious Interaction	Negative Perceptions	Respect of Cultural Differences
	$\beta$			
AC-CE (thinking vs. feeling)	0.03	-0.13	-0.01	-0.02
AE-RO (acting vs. reflecting)	0.19 <sup>†</sup>	-0.26**	-0.15	0.03
<i>F</i>	1.84	4.04*	1.25	0.09
<i>R</i> <sup>2</sup>	0.03	0.07	0.02	0.00

\*\*  $p < 0.01$ , \*  $p < 0.05$ , <sup>†</sup>  $p < 0.10$ .

The results seem to be consistent with those of prior studies that investigated learning style and state and trait anxiety (Ayalp & Özdemir, 2016; Toyama & Yamazaki, 2019b). Compared with those with a Converging learning style (with a focus on AC and AE), those with a Diverging learning style (with a focus on CE and RO) had more state and trait anxiety (Toyama & Yamazaki, 2019b) and more test anxiety (Ayalp & Özdemir, 2016). It is thought that too much reflection without action elicits pessimistic feelings that lead to anxiety in general. In contrast, those with an action orientation in a learning situation tend to have optimistic feelings when facing challenges and taking risks, leading to increased opportunities for development of the ability of affirmative and enjoyable interaction.

#### 4.2. Research question 2: Learning style and international attitudes

Table 2 illustrates results of the regression analysis for how learning style variables relate to four international attitudes. The results showed that the learning style variable of more thinking over feeling (AC – CE) was marginally negatively related to Intercultural Approach Tendency ( $\beta = -0.18$ ,  $p < 0.10$ ). Since the learning mode of concrete experience (feeling) is linked with a competency of forming good human relationships with others (Boyatzis & Kolb, 1991), those who use the feeling learning mode more than the thinking learning mode may tend to be more communicative and more involved with foreigners. The results also indicated that a learning variable of more acting over reflecting (AE – RO) was significantly associated with Intercultural Approach Tendency ( $\beta = 0.28$ ,  $p < 0.01$ ), Interest in International Vocation ( $\beta = 0.39$ ,  $p < 0.01$ ), and Willingness to Communicate to the World ( $\beta = 0.19$ ,  $p < 0.05$ ). An active orientation toward learning might lead to development of more interests relevant to the outer world, in contrast to a reflective orientation of learning that engages the inner world.

Table 2.  
Results of Regression Analysis of Learning Style and Intercultural Attitudes.

Variable entered	Dependent variables			
	Intercultural Approach Tendency	Interest in International Vocation	Interest in Foreign Affairs	Willingness to Communicate to the World
	$\beta$			
AC-CE (thinking vs. feeling)	-0.18 <sup>†</sup>	-0.09	0.01	-0.09
AE-RO (acting vs. reflecting)	0.28**	0.39**	-0.08	0.19*
<i>F</i>	7.55**	11.45**	0.37	2.84 <sup>†</sup>
<i>R</i> <sup>2</sup>	0.13	0.18	0.07	0.05

\*\*  $p < 0.01$ , \*  $p < 0.05$ , <sup>†</sup>  $p < 0.10$ .

### 4.3. Implications

The study results have practical implications. Results showed a relationship between learning style and two psychological variables—intercultural sensitivity and international attitudes—indicating that a learning style with a stronger active than reflective mode has a strong effect on those cross-cultural psychological factors. If a university wishes to decrease students’ anxious interaction with foreigners and enhance their international attitudes, particularly in terms of Intercultural Approach Tendency, Interest in International Work, and Willingness to Communicate to the World, instructors should work to develop students’ AE learning mode (active experimentation). When students are hesitant to take an active role in class, instructors should encourage them and motivate them by giving positive, warm, and friendly feedback. In a group session, instructors should create a safe atmosphere, which is called psychological safety (Edmondson, 1999). In such a place, students feel that they can take risks without penalty or criticism. An accumulation of active behavior could develop the AE mode that leads to an increase in international attitudes.

The study results also have implications for higher education in Japan. In Japanese higher education, a traditional teaching method is favored that focuses on lectures with reading assignments in order to transfer knowledge from teachers to students; the educator acts in the role of subject-matter expert (Kolb & Kolb, 2017). In this context, Japanese students get used to watching and listening in class but have difficulty expressing their thoughts and opinions. Since the results illustrated the significance of the active over reflective orientation for intercultural sensitivity and international attitudes, it is suggested that teaching methods shift from a teacher-centered to a student-centered approach in higher education. This shift may develop Japanese students’ active learning orientation in class to better foster a fundamental capacity of intercultural sensitivity and international attitudes. To respond to this challenging shift, it is important to study teachers’ perspectives. Promising studies include a question of how teachers behave with their students, how they educate them in class, and what competencies they need to develop in terms of cross-cultural contexts.

Finally, in the COVID-19 pandemic, face-to-face cross-cultural interactions in higher education are limited. Again, since our study showed that an active learning orientation is likely to relate to part of intercultural sensitivity and international attitudes, higher education should better utilize an interactive instructional method through online rather than one-way communication approach like videotapes or instruction by documents. It is thought that a more interactive method better develops an active learning mode, compared



with a one-way method. Also, it may be good to create an online platform where students with different cultural backgrounds exchange views and ideas in order to not only understand other cultures but also learn and acquire an active, affirmative learning tendency towards them.

## 5. CONCLUSIONS

Our study explored how learning style is associated with intercultural sensitivity and international attitudes. The results led us to conclude that learning style relates to intercultural sensitivity and international attitudes, but the relationship depends on the type of learning style variables and the type of underlying factors in intercultural sensitivity and international attitudes. More specifically, a learning variable of active over reflective modes tends to be more influential than that of thinking over feeling modes in terms of sensitivity and attitudes in a cross-cultural context.

## 6. LIMITATIONS

One study limitation concerns methodology. Among the three measures, the Intercultural Sensitivity Scale needs to be improved based on the fit indices described in the confirmatory factor analysis. The root mean square error of approximation of 0.10 indicated a poor model fit regarding factor structure because it was larger than 0.06 (Hu & Bentler, 1999). Also, two subscales of International Posture had low reliability, with scores of 0.58 for Interest in Foreign Affairs and 0.66 for Willingness to Communicate to the World; thus, these two subscales should be strengthened in terms of their reliability. Another limitation related to the demographic characteristics of the sample. This study involved students majoring in management and information society in a Japanese university. Most intended to work for business-type organizations. To generalize our conclusion of the importance of the learning variable of active versus reflective modes in relation to intercultural sensitivity and international attitudes, further studies should include participants with different majors and from different universities in diverse countries. Also, this study was limited to 109 undergraduates, and a future study should use a larger number of participants. Finally, our study focused on three variables and explored the relationships among them by applying quantitative methods. Although several statistically significant relationships were found, it is critical to employ triangulation with a different approach such as a qualitative study design including participant interviews to offer richer information on how the variables are related.

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