

## EXPLORING THE DEVELOPMENT OF A CROSS-CULTURAL FLEXIBILITY SCALE: A PRELIMINARY STUDY

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### Abstract

The aim of this study was to preliminarily explore the development of a cross-cultural flexibility scale based on a view of Kolb's experiential learning theory. To design the cross-cultural flexibility scale, we modified the existing measure within the theory called the Adaptive Style Inventory, which was invented to examine how people are adaptable and flexible in a learning situation. This study utilized the idea of theoretical commensuration between the Adaptive Style Inventory and Kolb's learning style model. To achieve the aim, we chose an international graduate school in Japan as a research site. One hundred twenty-six graduate students participated in this study who belonged to the international master's program. We conducted a correlation analysis between six key variables of the cross-cultural flexibility scale and those of the cross-cultural learning style questionnaires. Results of the correlation analysis revealed that each of the six variables of the flexibility scale was positively significantly related with the other of those of the learning style questionnaires respectively. The results suggested that this cross-cultural flexibility scale may potentially become initial foundation for the further development of measurement to analyze people's flexibility in a cross-cultural situation.

**Keywords:** *Cross-cultural flexibility, scale development, experiential learning theory, international graduate students.*

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### 1. Introduction

Over decades, a great number of cross-cultural skills and abilities for successful adaption to different, cultural environments have been discovered (Bird, Mendenhall, Stevens, & Oddou, 2010; Leiba-O'Sullivan, 1999). Among them, to our best knowledge, flexibility was relatively initially identified and published as one of crucial, effective skills when working abroad (Thomson & English, 1964). Since 1960s, several empirical studies also importantly described cross-cultural flexibility as various skill's names (Yamazaki & Kayes, 2004), including flexibility-rigidity (Stoner, Aram, & Rubin, 1972), interpersonal flexibility (Hawes & Kealey, 1979, 1981), cultural flexibility (Black, 1990), flexibility as a personality trait (Cui & Awa, 1992), flexibility-adaptability (Arthur & Bennett, 1995; Sinangil & Ones, 1997), and cross-cultural flexibility (Lin, Rogge, & Swanson, 2020).

To examine cross-cultural flexibility, different types of measurement of cross-cultural flexibility have been developed and applied according to what kind of human attributes/traits/contextual situations researchers are interested in. For example, the study of Caligiuri and Tarique (2012) used the Cultural Flexibility Scale developed by Black (1990) for expatriate management contexts. As another, Lin et al. (2020) developed the Multidimensional Psychological Flexibility Inventory in relation to Acceptance and Commitment Therapy. However, a cross-cultural flexibility scale for cross-cultural learning situations derived from the experiential learning theory (Kolb, 1984; Kolb & Kolb, 2017) has not been developed, yet. Accordingly, the aim of this study was to explore a design for a cross-cultural flexibility scale based on the experiential learning theory.

### 2. Kolb's experiential learning theory

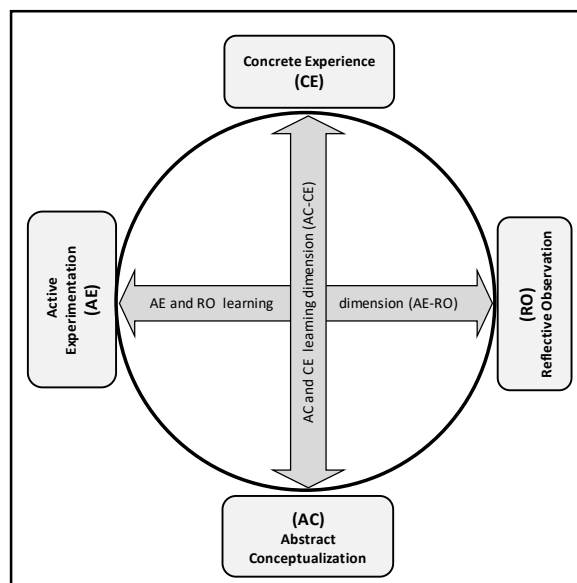
#### 2.1. Learning style model and the adaptive style inventory

By integrating and developing perspectives from influential scholars and researchers in the areas of Psychology, Philosophy, and Education, Kolb (1984, Kolb & Kolb, 2017) generated the experiential learning theory. This theory centered human experience that plays an important role in individual learning processes (Kolb, 1984; Kolb & Kolb, 2017). When people learn, they are required to apply four learning

modes: concrete experience (CE), abstract conceptualization (AC), reflective observation (RO), and active experimentation (AE). The CE mode is dialectically opposite to the AC one, while the RO mode is dialectically contrasted to the AE one. In a learning process, individuals typically tend to more use one learning mode than the other in the same learning dimension that relates to either of the two dimensions. One dimension concerns an abstract-concrete learning variable (AC-CE) and the other one represents an active-reflective one (AE-RO). These two variables are meant to show a learning style component as a relative learning preference. Accordingly, there are six important learning variables encompassed in Kolb's learning model: the four learning modes of CE, AC, RO, and AE mode, and two relative learning preference variables of AC-CE and AE-RO. Figure 1 illustrates Kolb's learning model. In order to assess individual's learning mode and style, the experiential learning theory provided Kolb's Learning Style Inventory (KLSI; Kolb, 1984; Kolb & Kolb, 2017). This study focused on those modes and variables relevant to cross-cultural learning situations. We utilized the cross-cultural learning style questionnaires modifying the KLSI in order to assess how people apply learning modes and variables in cross-cultural learning situations (Yamazaki & Toyama, 2022).

The experiential learning theory further shows us that people develop from the specialized stage to the integrated stage by repeatedly responding to different contextual demands in relation to the four learning-mode situations (Kolb, 1984). It seems to be assumed that people develop when they are adaptable and flexible in multiple learning situations and demands. The Adaptive Style Inventory (ASI; Boyatzis & Kolb, 1993) was invented to evaluate how people adapt to different learning situations. We would be able to see that people are flexible or inflexible to various learning situations. For example, if a person faces a learning situation that require using the mode of concrete experience, he/she may apply the CE mode even though his/her preferred learning style is strongly inclined towards the AC mode. It can be translated such a way that he/she is flexible because properly fitting to the environmental demand. In the same situation, however, if he/she still uses the AC mode that is against the environmental demand, he/she will be evaluated as being inflexible. The ASI measure is a forced choice type that requires people to select one of two options, each of which is conceptually related to one of the four learning modes. The ASI are thereby theoretically commensurate with Kolb's learning style model in the experiential learning theory (Mainemelis, Boyatzis, & Kolb, 2002).

Figure 1. Kolb's learning style model.



## 2.2. Cross-cultural flexibility scale

In this study, it was assumed that cross-cultural environmental demands are characterized as four learning modes of Kolb's learning theory. To design a cross-cultural flexibility scale, we applied and modified the ASI. The measurement of ASI had a total of 48 questions in eight personalized situations, each of which had six questions (Mainemelis et al., 2002). In this study, we designed the cross-cultural flexibility scale that consisted of 24 questions in four cross-cultural learning situations linked with the four learning modes. Each situation of this cross-cultural flexibility scale also had six questions, each of which requires selecting one of two options. An example of a learning situation is: "When I build a trustful relationship with people who are culturally different from me." Also, an example of a question

with two options to be chosen describes: (1) “I rely on my feeling” and (2) “I try to start to talk to the people.” These two options of the example here are related to the CE mode and the AE one respectively. To check this cross-cultural flexibility scale, the present study relied on the idea of the theoretical commensuration between the ASI and Kolb’s learning style model. Based on the idea, this study sought to investigate how the cross-cultural flexibility scale is conceptually matched with the cross-cultural learning questionnaires (Yamazaki & Toyama, 2022) through analysis of four learning modes and two variables between those two cross-cultural scales.

### 3. Methods

In order to develop a cross-cultural flexibility scale for this study, we asked international students of a graduate school in Japan to participate in the study. This graduate school was so unique in Japanese higher education system that the school officially applied English language, emphasizing global and international focused fields in a cross-cultural learning environment. One hundred twenty-six graduate students joined in this study, who pursued the specialization in international relations or international management. They were demographically diversified, including 36 countries, 58 females vs. 68 males, and the average age of 30.5 years old (s.d.=4.4). With regard to research ethics, the present study was approved by the university’s department of business administration where the authors belong.

The present study applied a correlation analysis between the cross-cultural flexibility scale and the cross-cultural learning style questionnaires in terms of six learning variables. Since overall learning style examined by those two scales is thought to be theoretically similar, the two relatively preferred learning style variables (i.e., AC-CE and AE-RO) of the cross-cultural flexibility scale should be correlated with those of the cross-cultural learning style questionnaires respectively. Also, the four learning modes of the flexibility scale should be correlated with those of the learning style questionnaires.

### 4. Results

Table 1 summarized results of the correlation analysis between the cross-cultural flexibility scale and the cross-cultural learning style questionnaires with regard to six key learning variables. Results of the analysis revealed that all relationships between the same two modes of the two scales was significant (CE vs. CE,  $p < 0.01$ ; AC vs. AC,  $p < 0.01$ ; RO vs. RO,  $p < 0.01$ ; AE vs. AE,  $p < 0.01$ ) and those between the same two relatively preferred learning variables were also significant (AC-CE vs. AC-CE,  $p < 0.01$ ; AE-RO vs. AE-RO,  $p < 0.01$ ). Thus, all six variables between those two scales were positively statistically related to each other, indicating that the cross-cultural flexibility scale is closely, theoretically associated with the cross-cultural learning style questionnaires. Thus, the results suggested that the cross-cultural flexibility scale is built as conceptual foundation at an initial stage of scale development.

Table 1. Results of correlation analysis between the two different scales with 126 participants.

		Cross-cultural flexibility variables					
		CE	AC	RO	AE	AC-CE	AE-RO
Cross-cultural learning style variables	CE	0.30**	-0.12	-0.23*	0.00	-0.24**	0.13
	AC	-0.22*	0.34**	-0.04	-0.07	0.31**	-0.02
	RO	-0.13	0.10	0.38**	-0.32**	0.13	-0.42**
	AE	0.07	-0.27**	-0.18*	0.38**	-0.19	0.33**
	AC-CE	-0.29**	0.26**	0.11	-0.04	0.31**	-0.09
	AE-RO	0.11	-0.20*	-0.30**	0.38**	-0.17	0.40**

Note. CE=concrete experience, AC=abstract conceptualization, RO=reflective observation, AE=active experimentation, AC-CE=relatively preferred learning variable of AC vs. CE, and AE-RO= relatively preferred learning variable of AE vs. RO. \*\*  $p < 0.01$ , and \*  $p < 0.05$ .

Table 2. Results of correlation analysis of the cross-cultural flexibility scale with 126 participants.

	1	2	3	4	5
1 CE					
2 AC	-0.56**				
3 RO	-0.45**	-0.02			
4 AE	-0.15	-0.38**	-0.42**		
5 AC-CE	-0.90**	0.87**	0.26**	-0.11	
6 AE-RO	0.17	-0.22*	-0.84**	0.85**	-0.22*

Note. CE=concrete experience, AC=abstract conceptualization, RO=reflective observation, AE=active experimentation, AC-CE=relatively preferred learning variable of AC vs. CE, and AE-RO= relatively preferred learning variable of AE vs. RO. \*\*  $p < 0.01$ , and \*  $p < 0.05$ .

This study also examined relationships among six key variables within the cross-cultural flexibility scale. As illustrated in Table 2, results supported the theoretical relationships among them: the CE mode was negatively related to the AC mode and the AC-CE variable; the AC mode was positively associated with the AC-CE variable; the RO mode was negatively connected with the AE mode and the AE-RO variable; and finally, the AE mode was positively related to the AE-RO variable. In other words, the cross-cultural flexibility scale seemed to work well in general. Yet, we observed significance of other four relationships: the CE mode and the RO mode; the AC mode and the AE mode; the AC mode and the AE-RO variable; and the RO mode and the AC-CE variable. Those relationships should be independent of each other in theory. One possible explanation may be a learning style tendency of the participants, whose learning style was included towards more abstraction and reflection. Such a learning style tendency might be influential on those results.

## 5. Conclusions

As a preliminarily study, we explored the development of cross-cultural flexibility scale through a view from Kolb's experiential learning theory. The scale was modified, based on the Adaptive Style Inventory, which is theoretically commensurate with the learning style model. This study relied on the idea. Results of our study indicated that the cross-cultural flexibility scale designed may become the initial foundation for further development. We will offer a methodological implication. The present flexibility scale was designed not by a Likert type scale as a normative form, but by a forced choice type. This type of scale seems more complex for scale reliability and validity. To test a reliability, a future study will be a test-retest examination as one of possible analyses. To investigate validity of the present scale, the next step for this scale development may be to conduct factor analysis as a promising study.

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