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Poon, J. M. L., Stevens, C. K. & Gannon, M. J. (2000). Effects of Training Method and Learning Style on Cross-Cultural Training Outcomes, *Research and Practice in Human Resource Management*, 8(2), 73-97.

Effects of Training Method and Learning Style on Cross-Cultural Training Outcomes

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ABSTRACT

The effects of traning method and learning style on cross-cultural training outcomes were examined. MBA students (N = 123) completed a learning style inventory and were randomly assigned to receive either didactic or experiential training. In the didactic training condition, cross-cultural concepts and issues were presented through lectures, discussions, and video clips. In the experiential training condition, participants role played a cross-cultural simulation game. Results indicated that cross-cultural attitude and trainee reaction were more positive when the training method matched trainees' learning styles than when it did not. This effect was mediated by perceived control. Implications of the findings and suggestions for future research are discussed.

Given the continuing trend toward globalization, there is a growing need for managers with cross-cultural understanding. A lack of such an understanding among managers can result in increased time to get a job done, increased travel time and costs, decreased revenues, poor work relationships, and lost opportunities (Goodman, 1994). A significant challenge for business schools is to improve cross-cultural understanding among students through cross-cultural training programs. In the workplace, cross-cultural training can provide managers on international assignments with the cross-cultural understanding that is needed to accomplish their tasks. Such training can also assist employees in overcoming the intercultural obstacles that could interfere with their work satisfaction and performance. Studies have shown that cross-cultural training can bring about significant changes in learning and performance (for reviews, see Black & Mendenhall, 1990; Deshpande & Viswesvaran, 1992).

Although both researchers and practitioners agree that cross-cultural training is beneficial, there is no consensus regarding the optimal method for delivering cross-cultural content. Studies on the differential effectiveness of various cross-cultural training approaches have generally yielded mixed results. One possible explanation for this is that the effects of different training methods may be moderated by trainee characteristics, such as information processing preferences. Effective instruction generally requires that instructors determine how students learn and tailor their instructional methods to match their learning preferences (Glaser & Bassok, 1989). Although widely used in the educational domain, learning style is a relatively new consideration in the design of training programs. Training practitioners have little or no knowledge of the research on learning styles that has been conducted in educational settings (Hayes & Allinson, 1997). The interactive

role of learning style, however, is important to consider because if learning style differences are randomly distributed among trainees and not controlled for when conducting training evaluation, it will be difficult to decipher accurately the results of such evaluation. In addition, trainees are the primary focus of the training system and understanding how they learn should be an important part of selecting training strategies if greater gains in learning are desired.

Therefore, the primary objective of this study was to examine whether matching training methods with individual differences in learning style would improve attitudinal (cross-cultural awareness) and motivational (self-efficacy and satisfaction) cross-cultural training outcomes. A second objective was to investigate mediating mechanisms for explaining these training outcomes.

Conceptual Background and Hypotheses

Cross-Cultural Training Outcomes and Approaches

Cross-cultural training methods can be classified using two dimensions (Gudykunst & Hammer, 1983). One dimension is the content focus, that is, whether the training approach develops a broad understanding of cultural differences (i.e., culture-general training) or provides detailed knowledge of a particular culture (i.e., culture-specific training). This distinction is important for determining which training outcomes should be studied when evaluating training program effectiveness. For example, culture-specific training is designed to improve knowledge and skills for interacting with members of a particular culture; therefore, cognitive learning and behavioral skill measures would be appropriate indicators of training effectiveness (Kraiger, Ford & Salas, 1993). In contrast, culture-general training is designed to increase awareness of how cultures affect values and behavior; as such, affective measures including cross-cultural attitude, self-efficacy, and trainee reaction would be appropriate indicators of training effectiveness. Because we expect the content of our cultural-general training to shift people ' s perspectives toward cross-cultural diversity as well as increase their level of self-confidence in dealing with cross-cultural situations, our training outcome measures were cross-cultural attitude and self-efficacy. We also assessed trainee reaction.

Cross-cultural attitudes are important to assess because they have important consequences for both individual (e.g., motivate the initiation of intercultural interactions) and societal phenomena (e.g., reduce social conflict). Attitude change will occur when a person ' s beliefs about an attitude object change, and these beliefs may change when new beliefs are learned (Fishbein, 1967). Therefore, a change in trainees ' cross-cultural attitudes after learning cross-cultural content is an indication that learning has occurred. Research has shown that cross-cultural training can have a positive effect on cross-cultural attitudes (e.g., Earley, 1987; Pruegger & Rogers, 1994).

Self-efficacy deals with one ' s self-perceived ability to accomplish a specific task, and it changes over time in response to new information and experience (Bandura, 1986; Gist & Mitchell, 1992). Therefore, changes in self-efficacy may be a useful indicator of learning during training (Kraiger et al., 1993). Black and Mendenhall (1990) proposed that cross-cultural training could increase trainees ' self-efficacy for intercultural interactions. Past studies have also found training to have a positive influence on self-efficacy (e.g., self-management training, Frayne & Latham, 1987; problem-solving training, Gist, 1989; job search training, Eden & Aviram, 1993; military recruit training, Tannenbaum, Mathieu, Salas & Cannon-Bowers, 1991).

As with all other training, cross-cultural training will also impact on trainee reaction, that is, trainees ' opinions of and satisfaction with the training received. Many researchers regard trainee reaction to be less important than other training evaluation criteria such as learning and behavior (c.f. Alliger & Janak, 1989). However, to the extent that trainee reaction has motivation potential (e.g., motivate trainees to undertake future cross-cultural training), it is an important criterion to consider. Furthermore, trainee reaction has been found to play a moderator as well as a mediating role in explaining training effectiveness (e.g., Mathieu, Tannenbaum & Salas, 1992).

The second dimension of Gudykunst and Hammer ' s (1983) classification scheme is the instructional method, that is, whether the training uses didactic methods (e.g., lectures, films) that

convey cognitive knowledge or experiential methods (e.g., role plays, simulations) that convey the feeling of cross-cultural experiences. Many researchers (e.g., Black & Mendenhall, 1990; Brislin, 1989; Gudykunst & Hammer, 1983) view didactic methods as providing for low trainee involvement unlike experiential methods. Experiential methods provide trainees the opportunity to react to cross-cultural situations emotionally and behaviorally and are believed to be more efficacious than didactic methods for enhancing cultural awareness. This prediction, however, has not received much research support. For example, Earley (1987) compared documentary training (provision of written information) with interpersonal training (simulated interaction and field trips) methods and found both methods to be effective as measured by self-reports and supervisory ratings of performance. Similarly, Gannon and Poon (1997) and Pruegger and Rogers (1994) found no differences between didactic and experiential methods in their effects on cross-cultural attitudes. As suggested earlier, these results may derive in part from the failure to consider trainee attributes when examining training method effectiveness. One relevant attribute is learning style.

Learning Style

Learning style refers to an individual ' s habitual and preferred way of perceiving, organizing, and retaining knowledge. It explains individual differences for stimuli recognition and processing. Extant research in educational settings indicates that learning style is a valid psychological construct (Sims, Veres & Shake, 1989) and an important determinant of educational attainment (Dunn & Dunn, 1993). It differs from ability or intelligence in that one learning style is not presumed to be better than another; that is, it is not value-directional (Messick, 1994).

Of existing learning style models, the two that have the most relevance in management are the models developed by Kolb (1984) and Honey and Mumford (1986). According to KoIb ' s (1984) model, learning is a circular process that begins with the acquisition of concrete experience (feeling). This is followed by reflection and observation (watching), formulation of abstract concepts and generalizations (thinking), and active experimentation (doing). People vary in their preferences for information perception along an abstract-concrete dimension and in their preferences for information processing along an active-reflective dimension. The combination of preferences along these two dimensions results in four learning styles that Kolb has labeled converger, diverger, assimilator, and accommodator.

Using Kolb ' s (1984) theory, Honey and Mumford (1986) developed a learning style model and a written measure, the Learning Styles Questionnaire (LSQ), that has better reliability and validity than Kolb ' s (1985) learning style inventory (e.g., Allinson & Hayes, 1988). Honey and Mumford ' s model also comprises four learning styles – labeled reflector, theorist, activist, and pragmatist – that are similar to those proposed by KoIb (1984).

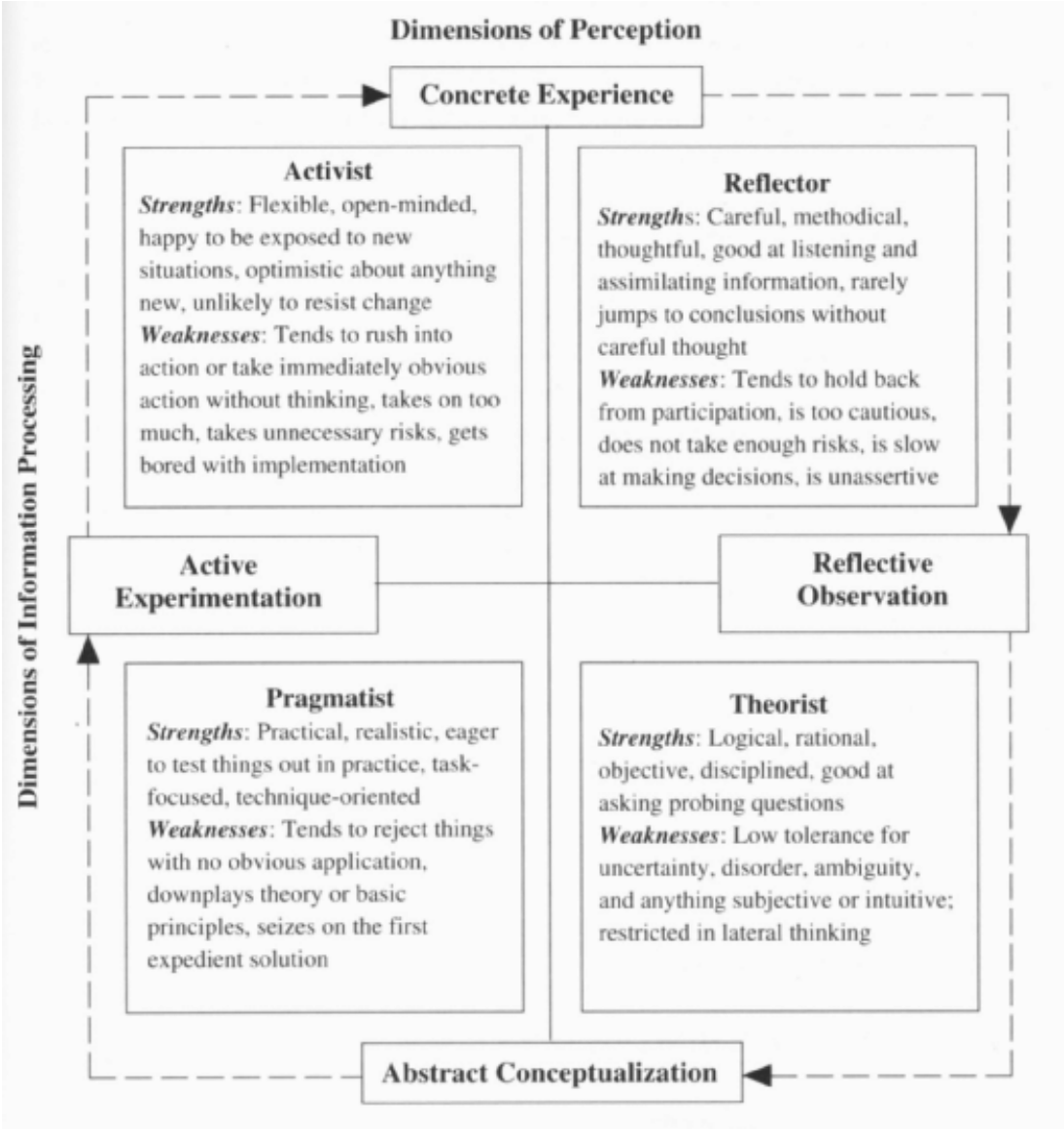
Reflectors (divergers) prefer to observe and ponder on what they have experienced; they learn best from activities that allow them to watch, think, and review what has happened.

Theorists (assimilators) prefer to think problems through in a vertical, step-by-step manner; they learn best when the content is offered as part of a concept, system, model, or theory.

Activists (accommodators) prefer the challenge of new experiences and involvement with others; they learn best when they can engross themselves in immediate tasks (e.g., role-playing exercises).

Finally, *pragmatists* (convergers) prefer to try out theories, ideas, and techniques to see if they work; they learn best when there is an obvious link between the subject matter and a problem (e.g., when there is high face validity in the learning activity). Figure 1 depicts Kolb ' s dimensions of perception and information processing and the corresponding learning style preferences Honey and Mumford proposed.

Figure 1.
Map of KoIb ' s (1984) perceptual and information processing dimensions and Honey and Mumford ' s (1986) learning styles.



Empirical evidence from the field of education suggests that instructional methods are differentially effective for students with different learning styles (for reviews, see Dunn, Beaudry & Klavas, 1989; Hayes & Allinson, 1993). For example, Sein and Robey (1991) found students classified as convergers and assimilators to perform better when trained with an abstract-model training approach than with an analogical-model training approach. In contrast, students categorized as divergers and accommodators performed better when trained with an analogical-model training approach than with an abstract-model training approach.

Researchers, however, have not investigated whether learning style moderates the effectiveness of didactic and experiential methods when delivering cross-cultural content. Nonetheless, there are reasons to anticipate this relationship. Because cross-cultural content challenges trainees ' paradigms for understanding human relationships and interactions, trainees may be naturally resistant to the implications of this material. It may be easier for trainees to discount or ignore cross-cultural content when it is presented using methods that are incompatible with their preferences for perceiving and processing new information. Insofar as training methods match trainees ' learning styles, they may be more effective in stimulating learning of cross-cultural content.

Recall that cross-cultural training methods have been classified as didactic or experiential in nature (Gudykunst & Hammer, 1983). Didactic methods require trainees to observe and interpret the content that is presented (reflective observation) as well as to induce conceptual relationships from what is presented (abstract conceptualization). These methods would be best suited for reflectors and theorists, who prefer contemplative learning environments as a way to identify and master relationships among concepts. Experiential methods, on the other hand, require trainees to involve themselves actively in some activity (active experimentation) that is generally designed to elicit

some affective response (concrete experience). These methods should facilitate learning among activists and pragmatists, who prefer to apply their knowledge to practical problems and to generate their own insights and feelings. Using this reasoning, we advance the following hypotheses.

> *Hypothesis 1a: When trained with a didactic method, reflectors and theorists will experience more positive cross-cultural attitude change, report higher self-efficacy, and be more satisfied with the training received than will activists and pragmatists.*
>
> *Hypothesis 1b: When trained with an experiential method, activists and pragmatists will experience more positive cross-cultural attitude change, report higher self-efficacy, and be more satisfied with the training received than will reflectors and theorists.*

Mediation of Matching Effects

Although anecdotal and empirical documentation suggests that matching training method and learning style will produce positive learning outcomes, few theoretical rationales for this idea have been developed or tested. In this study, we identify and explore two possible mediators for explaining the effects of matching training method and learning style on cross-cultural training outcomes. Specifically, we examined a cognitive variable (i.e., attention allocation) and a motivational variable (i.e., perceived control over the learning process) as potential explanations for matching effects in improving training outcomes.

According to Kanfer and Ackerman (1989), the learning process imposes demands for attention allocation. In the early phases of learning, greater attention must be devoted to the task at hand. If attentional resources are diverted to other activities (e.g., off-task cognition), learning is impaired. In the cross-cultural training context, a match between training method and learning style may facilitate the allocation of attention to learning. Conversely, a mismatch between training method and learning style may require trainees to allocate attentional resources to adapt to a non-preferred learning environment. This diversion of attention may hinder the primary task of learning the training content. Thus, we predicted that differences in attention allocation would mediate the effects of matching training method to trainees ' preferred learning style.

A second explanation derives from the effects of matching instructional method and learning preferences on learners ' motivation. According to Gregorc (1979), all instructional approaches cause learners to experience some degree of stress. This stress may be increased when the instructional method is at variance with learners ' preferred mode of learning. Individuals who feel stressed during instruction may find it difficult to learn or enjoy the learning process. Conversely, individuals who perceive a sense of control over the learning process may experience less anxiety. One way to foster this sense of control over the learning process is to adapt the instructional method to learners ' learning styles.

Perceived control refers to the belief that one can determine one ' s behaviors and influence one ' s environment (Wallston, Wallston, Smith & Dobbins, 1987: 5). This construct is primarily a function of one ' s appraisal of specific situational demands and resources for coping with those demands (Lazarus & Folkman, 1984: 69). Perceived control has been found to predict a broad range of motivational and cognitive outcomes including job satisfaction (e.g., Greenberger, Strasser, Cummings & Dunham, 1989), acquisition of salary negotiation skills (e.g., Stevens, Bavetta & Gist, 1993), and academic performance (e.g., Skinner, Wellborn & Connell, 1990).

In the training context, perceived control refers to the extent to which trainees believe they have control over their learning and are able to participate actively in the learning process. When trainees are confronted with a learning situation that is congruent with their preferred learning style, they are likely to experience heightened personal control over the learning process. Additionally, trainees who feel in control are likely to have higher outcome expectations that, in turn, might motivate them to tackle the learning content. Conversely, motivation to learn will be attenuated for those who feel they have little control.

Given the lack of empirical evidence regarding the role of attention allocation and perceived control in mediating matching effects in the context of cross-cultural training, we advance the following general hypothesis.

> *Hypothesis 2: The effects of matching training method and learning style on training outcomes will be mediated by attention allocation or perceived control or both.*

METHOD

Participants

New MBA students at a large public university participated in the study for extra credit. Of the 123 participants (78 men, 45 women), 50% were U.S. Caucasians, 39% were foreign nationals, 3% were African Americans, and 3% were Latino Americans. The mean age of this sample was 26 years (SD = 3.37), and the mean years of work experience was 3.5 (SD = 2.76).

Procedure

Participants attended a cross-cultural training workshop as a requirement of the MBA program. A week before receiving training, participants were told of the general purpose of the study and invited to participate. They then completed a self-administered pretest questionnaire that assessed demographic information, learning style, and baseline cross-cultural attitude and self-efficacy.

All participants underwent 3 hours of training designed to introduce them to cross-cultural issues and foster positive attitudes about cultural diversity. Participants were randomly divided into two groups after blocking on learning style. This process ensured roughly equal numbers of trainees with each learning style across training method conditions. One group received didactic-based training while the other received experiential-based training. Immediately at the end of this training session, participants completed a series of posttest measures.

Training Methods

In the *didactic method condition*, the third author, who has several years of experience in teaching cross-cultural courses, conducted the training. Cross-cultural concepts and issues were presented by means of lectures, discussions, video clips, and short exercises. The lecture focused on various frameworks for understanding cultures [e.g., Gannon ' s (1994) cultural metaphors, Hofstede ' s (1991) five dimensions of national cultures]. To illustrate the concepts presented, short video clips of cross-cultural encounters were shown.

In the *experiential method condition*, two experienced trainers served as facilitators. Participants in this training condition role played a cross-cultural simulation game, BaFá BaFá (Shirts, 1977). Following a brief introduction, participants were randomly divided into two groups and taught one of two fictitious sets of cultural values, communication styles, and behaviors. Participants listened to cassette tapes for all game instructions. After practicing in their own culture for a while, participants took turns interacting with members of the other culture through brief visits. They then reported back to their own group about the other group ' s culture. At the conclusion of the game, participants were brought back together for debriefing and a group discussion of the simulation experience.

Although the topics covered in the experiential condition were not identical to those covered in the didactic condition, nearly all of the key issues presented in the didactic training also surfaced during participants ' discussion in the experiential training. Furthermore, *t* test analyses revealed no significant differences between the two conditions with regard to participants ' assessment of the trainer or the cultural learning that took place, suggesting equivalence of the two conditions.

Measures

Learning style. Learning style was assessed using Honey and Mumford's Learning Styles Questionnaire – an 80-item questionnaire that relies mostly on statements of observable managerial behaviors to tap individual learning styles. Honey and Mumford (1986) have reported test-retest reliabilities ranging from .81 to .95 for the scales. In our study, supplemental analyses revealed kappa = .61 between participants' LSQ scores and their self-reported learning style, when given a verbal description of each of the four styles.

Participants who were classified as not having a dominant learning style (n = 28) were not included in the hypothesis testing analyses. (These participants did not differ in demographic or other measures from those who had one dominant style.) For the analyses, we classified participants with specific learning styles into two learning style categories: activist-pragmatist (n = 37) and reflector-theorist (n = 58). This classification differentiated participants who prefer action-oriented approaches (i.e., activists and pragmatists) from those who prefer contemplative approaches (i.e., reflectors and theorists), while maintaining acceptable sample size.

Cross-cultural attitude. We developed a cross-cultural attitude measure for this study using the attitude measurement and cross-cultural literatures (e.g., Goodman, 1994; Triandis, 1971). In line with the attitude literature (c.f. Eagly & Chaiken, 1993; Mueller, 1986), we constructed this measure to assess participants' beliefs (e.g., "Time is a general concept that has about the same meaning from culture to culture"), feelings (e.g., "People should work to increase their cross-cultural knowledge"), and behavioral intentions (e.g., "I intend to interact more with people from other cultures") regarding cross-cultural matters. All responses on this measure (20 items; α = .82 and .85 for pretest and posttest measures, respectively) were made using a Likert-type scale with endpoints of 0 (Completely Disagree) and 10 (Completely Agree). Scores for this measure were derived by averaging responses across all items. Factor analysis results used to guide the selection of items for this measure are presented in Appendix A.

Self-efficacy. We measured cross-cultural self-efficacy by assessing participants' general judgment about their capability to execute cross-cultural behaviors (e.g., "I can socialize successfully with people from different cultures"). Participants appraised their level of confidence for 11 self-efficacy items (α = .88 and .90 at pretest and posttest, respectively) using a Likert-type scale labeled from 0 (Not at all Confident) to 10 (Totally Confident). We computed self-efficacy scores by averaging confidence ratings across items.

Trainee reaction. We measured participants' satisfaction with the training (e.g., "Overall, I am very satisfied with the training that I've just received") with four items (α = .86) using a Likert-type scale labeled from 0 (Completely Disagree) to 10 (Completely Agree). The items were averaged to form a composite measure of trainee reaction.

Mediating variables. We assessed participants' perceptions of their attention allocation with five items (α = .80; e.g., "I daydreamed during the training session") and perceived control with three items (α = .59; e.g., "I felt on top of things during the training"). Trainees responded using a Likert-type scale labeled from 0 (Completely Disagree) to 10 (Completely Agree). Scores for each of the two scales were derived by averaging responses across all items of each scale.

All items on cross-cultural attitude, self-efficacy, trainee reaction, attention allocation, and perceived control are listed in Appendix B.

RESULTS

Preliminary analyses indicated that the assumptions of normality, linearity, homoscedasticity, multicollinearity, homogeneity of variance, and homogeneity of regression were met. Descriptive statistics, reliabilities, and intercorrelations of the major study variables are shown in Table 1.

Table 1
Descriptive Statistics and Correlations for Major Dependent Variables

Variable	1	2	3	4	5	6

Pretest						
1. Cross-cultural attitude	(.82)					
2. Self-efficacy	.30**	(.88)				
Posttest						
3. Cross-cultural attitude	.76**	.19*	(.85)			
4. Self-efficacy	.24**	.69**	.22*	(.90)		
5. Trainee reaction	.28**	.04	.48**	.05	(.86)	
6. Perceived control	.22*	.24**	.40**	.17	.41**	(.59)
Mean	7.81	7.05	8.10	6.92	8.36	7.52
Standard Deviation	1.06	1.36	1.02	1.36	1.48	1.51

Note. Values enclosed in parentheses represent alpha reliabilities. N = 123.
*p<.05, two-tailed. **p<.01, two-tailed.

HYPOTHESIS 1: MATCHING EFFECTS

We tested Hypotheses 1a and 1b using planned comparisons with one-tailed tests because of the a priori and directional nature of these hypotheses. The dependent variables were posttest cross-cultural attitude, self-efficacy, and trainee reaction. Pretest cross-cultural attitude was treated as a covariate; thus, the planned comparisons were made on adjusted means for the cross-cultural attitude variable.

Hypothesis 1a predicted that, in the didactic method condition, reflectors and theorists would express more positive cross-cultural attitudes, higher self-efficacy, and more positive trainee reaction than would activists and pragmatists. Pairwise comparisons results indicated that compared to activists-pragmatists, reflectors-theorists had marginally higher posttest cross-cultural attitude [M = 8.08, 8.36; t(90) = -1.47, p = .07] and significantly higher trainee reaction [M = 8.17, 8.85; t(91)= -1.74, p < .05]. There was no significant difference in self-efficacy between the two learning style groups under this condition, [M = 7.12,6.74; t(91) = 1.03, ns].

Hypothesis 1b predicted that, in the experiential method condition, activists and pragmatists would have more positive cross-cultural attitudes, higher self-efficacy, and more positive trainee reaction than would reflectors and theorists. The results indicated that activists-pragmatists did indeed express significantly more positive posttest cross-cultural attitude than did reflectors-theorists [M = 8.37, 7.96; t(90) = 2.11, p < .05], but no significant differences were obtained for trainee reaction [M = 8.50, 8.41; t(91) = 0.22, ns] and self-efficacy [M = 7.06, 6.98; t(91) = 0.19, ns].

In sum, the overall pattern of results supported the contention that matching training method to learning style is beneficial, at least with regards to promoting more positive cross-cultural attitudes under experiential training and increasing trainee satisfaction under didactic training. Contrary to expectations, however, a match or mismatch between training method and learning style did not affect participants ' self-efficacy.

HYPOTHESIS 2: MEDIATING EFFECTS

Hypothesis 2 predicted that attention allocation or perceived control or both would mediate the effects of matching training method and learning style on training outcomes. To test this hypothesis, we created a matching condition dummy variable (mismatched = 0, matched= 1). The matched group comprised reflectors-theorists in the didactic condition and activists-pragmatists in the experiential condition (n = 47), whereas the mismatched group comprised activists-pragmatists in the didactic condition and reflectors-theorists in the experiential condition (n = 48). Matching condition was the independent variable. The dependent variables were posttest cross-cultural attitude (adjusted for pretest) and trainee reaction.

Applying Baron and Kenny ' s (1986) procedures, we first regressed the two potential mediators on

the matching condition variable to establish the independent variable to mediator link. Results indicated no relationship between matching condition and attention allocation but a significant relationship between matching condition and perceived control, $\beta = .18$, $t(93) = 1.72$, $p < .05$, one-tailed. Thus, subsequent analyses were conducted with only the perceived control variable as a potential mediator.

To examine the potential mediating effects of perceived control, we used path analysis and a comparison analysis of the relative fit of hierarchical (nested) models. We tested three models (a baseline model and two alternative models) with LISREL 7 (Jöreskog & Sörbom, 1989) using covariance matrices, maximum likelihood estimation, and single indicator variables. We used the observed scale reliabilities to fix the error variances for each variable; the amount of random error variance (theta) was determined by deducting the reliability of the observed score from 1 and multiplying the obtained value by the variance of the observed score (cf. Jöreskog & Sörbom, 1989: 136).

The a priori (baseline) model comprised the following variables: matching condition as the independent variable, perceived control as a partial mediating variable, and posttest cross-cultural attitude (with pretest attitude as a covariate) and trainee reaction as dependent variables. Previous research has found trainee reaction to have a significant influence on training effectiveness (e.g., Mathieu et al., 1992) and posttraining attitudes (e.g., Tannenbaum et al., 1991); therefore, we included a path from trainee reaction to posttest cross-cultural attitude in the model (see Figure 2a). This partial mediation model was tested by comparing its fit to two nested models. The first comparison model was one in which perceived control was not allowed to mediate the relationship between matching condition and the training outcome variables (non-mediation model). Eliminating these mediating paths significantly worsened model fit, $\chi^2(2) = 20.16$, $p < .001$ (see Table 2). The second comparison model was one that did not include any direct path from matching condition to the outcome variables (complete mediation model). Elimination of these paths did not significantly improve or worsen model fit, $\chi^2(2) = 2.31$, ns. Thus, both the partial mediation and complete mediation models represented plausible models. The latter model, however, had a better fit than the former (adjusted goodness-of-fit index of .84 versus .75). Therefore, on the basis of fit and parsimony, the complete mediation model (see Figure 2b) is preferred. Although the fit for this model is still not ideal, the primary interest was on establishing mediation; achieving model fit was of secondary importance. An inspection of the individual parameter estimates of the model revealed that the path from trainee reaction to posttest cross-cultural attitude was not reliably different from zero (unstandardized path coefficient = .086, SE = .073). Otherwise, all the path coefficients were significant and in the predicted direction.

Table 2
Fit Indices for Nested Sequence of Models

Model Test					
Model	df	χ^2	p	AGFI	RMR
Model 1: Partial mediation	2	8.49	.01	.75	.13
Model 2: No mediation	4	28.65	.00	.56	.25
Model 3: Complete mediation	4	10.80	.03	.84	.13

Model Comparison		
Comparison	df	$\chi^2_{difference}$
Model 2 - Model 1	2	20.16*
Model 3 - Model 1	2	2.31

Note. AGFI = Adjusted goodness-of-fit index. RMR = Root mean squared residual.
*p<.001.

Figure 2.
Standardized parameter estimates of the partial and complete mediation models. n

= 95. R^2 = .52 for the partial mediation model and .83 for the full mediation model. Significance levels were determined by a critical ratio of the unstandardized parameter estimates to their standard errors. *p < .05, two-tailed. **p <.01, two-tailed. ***p <.001, two-tailed.

Figure 2a. Partial Mediation Model

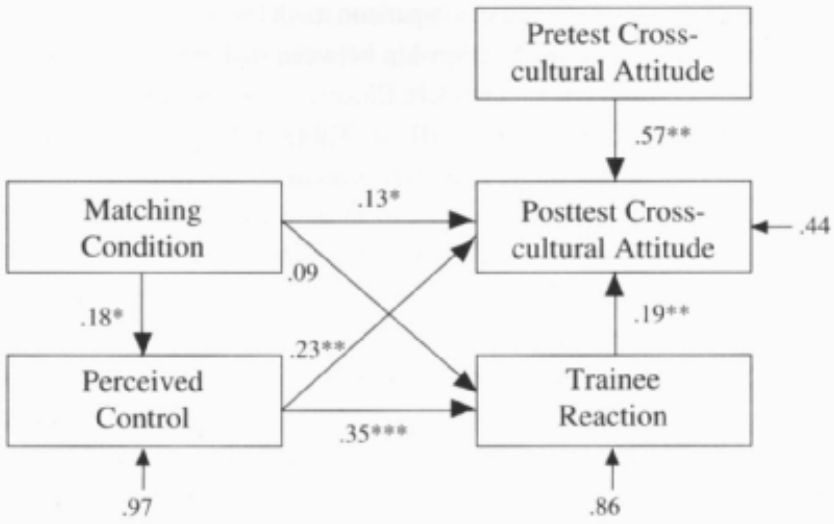
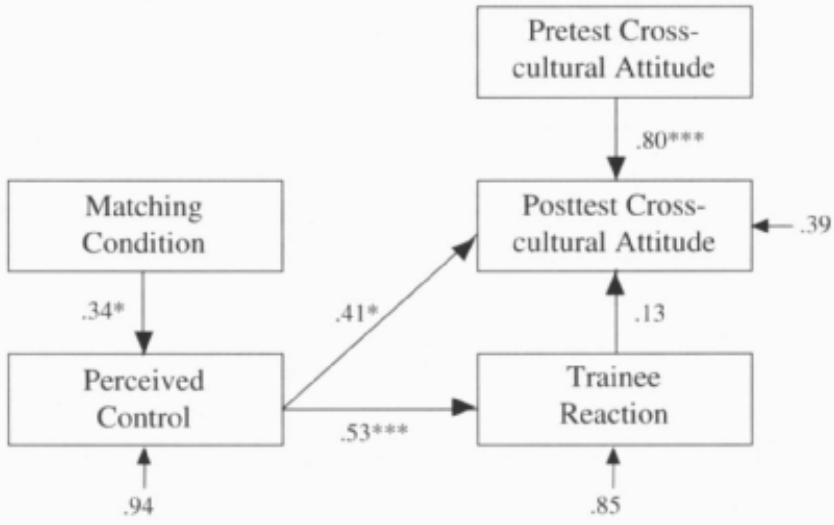


Figure 2b. Complete Mediation Model



To conclude, the overall pattern of results from the mediation analyses indicated that when training method was matched to trainees ' learning style, trainees perceived themselves to have greater control over the training process. A perception of control, in turn, was positively related to trainee reaction and cross-cultural attitude.

DISCUSSION

The focus of the study was to examine whether matching training methods to learning styles would enhance cross-cultural training outcomes. The findings suggest that the effectiveness of a training method in fostering positive cross-cultural attitudes and trainee reaction does indeed depend in

part on trainees ' preferred mode of learning. Specifically, the results showed that the didactic method produced greater attitude change and satisfaction among trainees with a reflector-theorist learning style than among those with an activist-pragmatist learning style. The experiential method, in contrast, promoted greater cross-cultural attitude change among trainees with an activist-pragmatist learning style than among those with a reflector-theorist learning style.

Contrary to expectations, individual differences in learning styles had no significant effect on trainee reaction in the experiential method condition. The data indicated that trainees were generally satisfied with this training approach regardless of their learning style preferences. Perhaps the simulation exercise used was sufficiently enjoyable and intriguing that even individuals who generally are not inclined toward learning using an experiential approach found the exercise satisfying.

The anticipated matching effects on trainees ' self-efficacy for cross-cultural interactions also did not materialize under both training method conditions. Supplemental analyses also revealed no main effects of the training methods on self-efficacy, indicating that it was not affected by the training program. One plausible explanation for this is that exposure to such training has made participants realize that real-life cross-cultural interactions are more complex and difficult than previously believed, thus lowering somewhat their confidence in being able to deal with and adapt to such situations. This phenomenon is related to what the training evaluation literature has termed a response shift – a change in a person ' s internal standard for determining his or her level of functioning on a given dimension (Sprangers & Hoogstraten, 1989). When pretest-posttest designs that use self-reports as outcome measures are used to evaluate training and response shifts occur, the evaluation results will be confounded.

Another possible reason for the lack of training impact on self-efficacy is that the culture-general nature of the training was too diffuse to affect this task-specific construct. Perhaps trainees need to learn specific communication and interpersonal skills before they increase their self-percepts of efficacy for dealing with cross-cultural situations. Development of an intercultural perspective may thus be viewed as the first phase of cross-cultural training efforts, to be followed by specific instruction in cross-cultural interaction skills. Additional research is needed to examine this possibility.

Mediating Effects of Perceived Control

Another objective of this study was to investigate the mediating processes by which training method-learning style alignment affects training outcomes. Results suggested that the matching effects operated on the training outcomes through perceived control. On the basis of the results of the complete mediation model, it appears that training methods that match trainees ' learning styles increase their sense of control over the learning process. This perception of control both improves trainee satisfaction with the training and fosters the development of positive cross-cultural attitudes. This finding is consistent with prior research showing that perceived control has important consequences for many aspects of human functioning. For example, Stevens et al. (1993) found that women who received self-management training experienced increases in perceived control, which subsequently improved their performance on a salary negotiation exercise.

The predictive power of perceived control found in this study is also consistent with conceptual work proposing that perceived control underlies many motivations. Skinner (1995), for example, posited that perceived control influences learning outcomes through its effects on action (motivation) and action regulation (coping). According to Skinner, individuals who have a high sense of control will experience positive emotions (e.g., satisfaction), orient toward an activity (e.g., focus on it), and behave actively (e.g., exert effort). Similarly, Pintrich, Marx and Boyle (1993) suggested that control beliefs are related to the initiation of cognitive engagement; increased control beliefs should lead to deeper cognitive processing and sustained mental effort.

Implications

The findings of this study have some important implications for classroom learning and organizational training. First, the findings suggest that the same training method may not be equally appropriate for every trainee, and instructors may enhance learning by using methods that fit trainees ' learning styles or by varying the range of methods used. Alternatively, it may be possible to design course assignments flexibly so that trainees have the option of learning through methods best suited to their needs. Even when it is not feasible to tailor training programs to accommodate learning style preferences, learning style information can be provided to trainees for diagnostic purposes. Learning should be more efficient when trainees understand their own learning strengths and weaknesses and take steps to adapt to non preferred instructional methods.

Second, the findings of this study have implications for training evaluation research and practices. For training researchers, the findings imply that when evaluating the differential effectiveness of various training methods, there is a need to control for learning style before more conclusive results of the evaluations can be obtained. For training practitioners, caution must be exercised when reviewing and interpreting trainees ' evaluation of the training. Because trainees with different learning styles will react variously to different training methods, their evaluations may be reflecting responses to learning style differences. Therefore, learning style information should be used in conjunction with training evaluation data to facilitate an accurate interpretation of these data. For example, it would be helpful to know that a training program was poorly received because many of the trainees had learning styles that conflicted with the training approach used.

Finally, the findings of the present study suggest that it is not matching per se but the perceived control it affords trainees that influences training outcomes. Therefore, in cases in which it is not feasible to implement matching (e.g., if learning style information is not available), actions can be taken to directly influence trainees ' perceptions of control. For example, trainees can be given more say in determining their own training needs or the kind of training they would like to undertake. Alternatively, feedback mechanisms that enable trainees to track their own learning progress can be built into a training program.

In conclusion, human resource and training professionals are encouraged to draw upon all components of the learning process (i.e., concrete experience, reflective observation, abstract conceptualization, and active experimentation) in the design of training. Attention to all these components can maximize the potential for all trainees to learn. Learning style, although an important dimension to consider, clearly cannot be a sole basis for designing training. Human resource and training professionals should, therefore, integrate knowledge about other relevant factors and relate them to the design of training programs. Given the existence of other individual-difference factors and the multiple approaches for delivering cross-cultural training, organizations must investigate what will be the most effective training strategy in their own unique situation.

Study Limitations and Future Research Directions

The present study has a number of limitations that future research needs to address. First, because the data were collected from students in a university setting, it is not certain to what extent the results will generalize to other populations and settings. In addition, the heterogeneous sample used may restrict further the generalizability of the findings because heterogeneous populations may be more tolerant of cultural diversity than are homogeneous populations. Finally, the present findings are limited to the particular training program used. Although the didactic and experiential programs were chosen to be representative of those used in cultural-general training, the role of learning style in moderating the effects of other cross-cultural training approaches is unknown. Therefore, we hope other researchers would conduct similar studies in other settings (preferably organizational settings) using different populations and cross-cultural training strategies.

Second, although the sample size for this study is larger than typically found in training evaluation studies (cf. Arvey, Cole, Hazucha & Hartanto, 1985), it was not large enough to enable tests of both a measurement and a structural model. Third, pending further research designed to effectively

eliminate equivalent models, the final model offered in this study should be regarded as one of several possible models for explaining the phenomenon at hand (cf. Breckler, 1990) in attempting to investigate mediating processes, we focused on only a limited mediation model. Future research that includes other relevant variables such as self-esteem, empowerment, and autonomy is needed before the interplay of training method-learning style congruence and training outcomes can be fully understood. Furthermore, because we had sound theoretical reasons for including the attention allocation variable in this study, future researchers conducting similar studies should continue to test this cognitive variable for mediating effects, perhaps under training conditions that are more cognitively demanding.

Despite its limitations, this study makes a number of contributions to existing cross-cultural, training, and learning styles literature. First, the findings suggest that the beneficial effects of matching instructional method and learning style often found in school settings do generalize to adult training settings. Matching training method to learning style was shown to have significant and positive effects on cross-cultural attitude and trainee reaction. This study also represents the first empirical attempt to identify mediating variables for explaining matching effects on cross-cultural attitude changes. Perceived control was shown to play a mediating role in the relationship between training method-learning style congruence and training outcomes. Although many questions remain, this study represents a first step toward the development of a comprehensive theory for understanding why it may be effective to match training method to learning style. The proposed mediation model in this study provides a theoretical framework for extending previous work on matching effects to include investigations into mediation processes.

APPENDIX A

Results of Factor Analysis of the Cross-cultural Variable

Item	Factor			h^2
	I	II	III	
1. Important to understand cross-cultural concepts	.82	.19	-.06	.71
2. Intend to learn more about other cultures	.77	.08	.10	.61
3. Should receive some form of cross-cultural training	.77	.24	.11	.66
4. Should work to increase cross-cultural knowledge	.71	.11	.16	.55
5. Intend to interact more with other cultures	.68	-.08	.20	.51
6. Organizations with diverse work force, more productive	.67	-.21	.14	.51
7. Intend to get to know more people from other cultures	.65	.15	.33	.56
8. Intend to seek work in place with diverse work force	.65	.06	.35	.55
9. Important to keep cultural traditions alive	.64	.16	-.19	.47
10. Getting tired of all the emphasis on cultural diversity	.56	-.05	.48	.55
11. Gender diversity helps gain competitive advantages	.52	.06	.33	.38
12. Can get more ideas by working with other cultures	.41	-.24	.06	.23
13. What seems logical to one, irrational to another	-.04	.74	-.14	.57
14. Time is a general concept that has same meaning	-.29	.58	.44	.62
15. Understanding value differences is critical	.46	.56	-.10	.53
16. Should not change normal behavior	-.11	.48	.02	.24
17. Different cultures interpret same event differently	.10	.46	.06	.22
18. Misperceptions arise if evaluate based on own values	.32	.42	.29	.36
19. Concepts of physical space vary from culture to culture	.26	.30	.07	.16
20. Culture affects people ' s behavior	.23	.28	-.15	.15
21. Would rather work with individuals from own culture	.36	-.07	.59	.48

22. Others should keep culture to themselves	-.09	.41	.56	.49
23. Come from a culture that is superior to others	.05	.02	.52	.27
24. Desirable to respect opinion of other cultures	.26	-.10	.48	.31
Eigenvalue	6.67	2.34	1.69	
Percent of Variance Explained	27.80	9.70	7.00	

Note. Values in bold type indicate items retained for each factor. Factor labels: Factor I = Feelings and Behavioral Intentions; Factor II = Beliefs. Factor III, which comprised the last four items (α = .46), were not used in the study because of its low reliability. Thus, only the items from Factor I and Factor ll were used to form the cross-cultural attitude measure.

APPENDIX B

Major Study Variable Items

Cross-cultural Attitude Items

Beliefs

1. What seems logical to a person in one culture may seem irrational to a person from another culture.
2. Time is a general concept that has about the same meaning from culture to culture (reverse coded).
3. Understanding value differences is critical for cross-cultural adjustment.
4. When interacting with people from other cultures, a person should not change his or her normal behavior (reverse coded).
5. Different cultures often interpret the same event differently.
6. Misperceptions arise when one evaluates other cultures based on one ' s own values.
7. Concepts of physical space vary greatly from culture to culture.
8. Culture affects people ' s behavior.

Feelings

9. It is very important to understand cross-cultural concepts.
10. If possible, everyone should receive some form of cross-cultural training.
11. People should work to increase their cross-cultural knowledge.
12. Organizations that have a diverse work force are more productive than those that do not.
13. It is important to keep cultural traditions alive.
14. I am getting tired of all the emphasis on cultural diversity (reverse coded).
15. Gender diversity in the work force helps organizations gain competitive advantages.
16. I can get more ideas by working with people from other cultures than by working only with people from my own culture.

Behavioral Intentions

17. I intend to learn more about other cultures.
18. I intend to interact more with people from other cultures.
19. I intend to get to know more people from cultures that are very different from my own.
20. After I graduate, I intend to seek work in an organization that has a diverse work force.

Self-efficacy Items

1. I can interact successfully with the local people when on a business trip in a foreign country.
2. I can socialize successfully with people from different cultures.
3. I can negotiate a successful contract with business associates from a foreign country.
4. I can work productively with people from different cultures.

5. I can identify my own biased assumptions about other cultures.
6. I can adapt to the social customs of other cultures.
7. I can establish productive working relationships with people from different cultures.
8. I can make sound judgments about why people from other cultures behave as they do.
9. I can behave in culturally-appropriate ways in a cross-cultural setting.
10. I can adapt to cultures that are very different from my own.
11. I can count on myself not to feel overly stressed even under unfamiliar cross-cultural situations.

Trainee Reaction Items

1. Overall, I am very satisfied with the training that I have just received.
2. The training has been a valuable experience for me.
3. I did not enjoy the training session very much (reverse coded).
4. I would not recommend this course to my friends and associates (reverse coded).

Mediating Variable Items

Attention Allocation

1. I daydreamed during the training session (reverse coded).
2. I thought about things unrelated to the training during the training session (reverse coded).
3. I focused my total attention on the class activities during the training.
4. I was often bored during the training session (reverse coded).
5. I had difficulty paying attention to what was going on during the training session (reverse coded).

Perceived Control

1. I participated actively in the training exercises.
2. I felt on top of things during the training.
3. I felt in control over my own learning during the training session.

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