

Chinese Mothers' Belief Systems about Learning and Shared-Reading Behaviors: The Pragmatic View of Effort vs. the Incremental View of Intelligence

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Culture is transmitted both symbolically and behaviorally. The way parents teach and interact with young children may reflect the mindset about learning embedded in them by their particular culture. This study chose to test this through shared picture book reading, as it can be considered an activity either just for fun, or to develop reading capacity. We compared whether and how each of the two types of learning beliefs—the incremental view of intelligence documented in Western research versus the pragmatic view of effort rooted in the learning philosophy of Chinese culture—are manifested in Chinese mothers' shared-reading behaviors. We were especially interested in, above and beyond the variance of the incremental view of intelligence, the unique predictability of the pragmatic view of effort, which subscribes to the belief that effort never fails to improve performance even when one has already reached peak levels of performance. We also investigated the moderating effect of mothers' impression of their child's temperament on the relation between mothers' learning beliefs and parenting behaviors. Fifty dyads of 4- to 5-year-old preschoolers and their mothers participated in a ten-minute shared-reading session. The mothers' Child-Centered, Parent-Centered, and Traditional Chinese Teaching Behaviors were coded using the time-sampling method. Mothers also filled out questionnaires assessing their incremental view of intelligence and pragmatic view of effort. They also reported their child's temperament using the Children's Behavior Questionnaire-Very Short Form. Hierarchical regression analyses revealed that, after controlling for child sex and maternal educational level, neither the main effects of mothers' incremental view of intelligence and children's temperament nor their interaction predicted any of the three types of mothers' shared-reading behaviors. Conversely, when mothers perceived a lower level of inhibitory control in their child's temperament, mothers' pragmatic view of effort positively predicted their Traditional Chinese Teaching Behaviors. When mothers perceived their child's activity level to be high, their pragmatic view of effort predicted less Child-Centered Behaviors; this effect stayed significant even when the variance of mothers' incremental view of intelligence was statistically controlled. This research suggests that culturally rooted learning beliefs and pedagogies are interwoven with parental perceptions of their child's learning propensities, even before children start school. The dispositional, parental, and cultural factors altogether lead to a learning milieu that situates Chinese children in a culture-bound socioemotional context of learning.

Keywords: *incremental view of intelligence, pragmatic view of effort, preschooler, shared reading, temperament*

Extended Abstract

Culture is transmitted both symbolically and behaviorally. The way parents teach and interact with young children may reflect a mindset about learning embedded in them by their culture. For example, Chinese parents place more emphasis than their Western counterparts on their children's efforts, as early as when their children are still in preschool (Li, 2004; Li et al., 2010, 2014; Yamamoto & Li, 2012). The cultural specificity of parental involvement, in turn, may be rooted in Chinese parents' implicit beliefs about achievement, ability, and effort. This study used a parent-preschooler shared-reading situation to examine whether and how individual differences in Chinese mothers' implicit beliefs about learning are manifested in their shared-reading behaviors. However, parents' cognitions often do not lead directly to parenting practices (Bornstein et al., 2018). Instead, children's dispositional characteristics (Jenkins et al., 2003) may play a role in determining parenting behaviors. This study thus explored whether the association between parents' implicit beliefs about learning and their shared-reading behaviors is moderated by parents' perceptions of their children's temperaments.

Two Implicit Beliefs about Learning

Dweck's (2006) theory of implicit beliefs and motivation compared individuals holding the entity view of intelligence (EVI; also called a fixed mindset), with those holding the incremental view of intelligence (IVI, also called a growth mindset). Individual differences in these implicit views have been found in different cultures. For example, like their Western counterparts, Chinese college students with IVI were more academically adaptive than those with EVI (e.g., Hong et al., 1999). However, some studies found that IVI/EVI predicts neither the adaptability of Chinese children in the face of failure nor improvements in their performance (Li & Bates, 2019). One reason for the divergent findings was that, for Western researchers, the construct of EVI/IVI is limited to either demonstrating competence (the entity view) or improving competence (the incremental view) (Hulleman et al., 2010). As to effort, it was only suggested

as one possible measure to ameliorate competence.

Lay and Tsai (2005) postulated that Chinese people regard effort from a different angle. Deriving their theory from Confucian teachings, they proposed the construct of the pragmatic view of effort (PVE) and argued that PVE is deeply ingrained in the minds of Chinese people. Those who subscribe to PVE believe that effort never fails to improve performance, even when one has already reached peak levels of performance. Lay and Tsai also found that PVE significantly predicted Taiwanese high-school students' attribution after failure above and beyond the influence of IVI and achievement goal orientations.

Cultural Differences in Shared Reading

Although both American and Chinese mothers of preschoolers stress the notable value of shared reading, Wu and Honig (2010) reported that mothers from the two cultures held different beliefs about the functions of shared reading. They found that Taiwanese mothers valued teaching their children before starting school, whereas American mothers emphasized companionship and positive emotional support. Luo et al. (2011) reported that Taiwanese mothers produced an "overwhelmingly" higher percentage of labeling and event/action-related questions during shared-reading sessions than their American counterparts. These results correspond with cross-cultural ethnographic studies that have found that Chinese parents believe in "early training" (Fung et al., 2004) for their children from a very young age. They not only offer repetitive corrections and guidance (Fung, 1999; Miller et al., 1997) but also encourage memorization and recitations (Fung et al., 2004). In other words, cultural values of learning start to shape children's daily experiences as early as in the preschool years.

Categories of Parental Shared-Reading Behaviors

This study included three categories of parental shared-reading behaviors from the coding scheme developed by Lay and Wu (2012), two of which were

derived from prior Western parenting research (Collins & Laursen, 2004; Dix, 1992; Hastings & Grusec, 1998; Trautman & Rollins, 2006)—child-centered behaviors (CCB) and parent-centered behaviors (PCB). CCB encompasses four behavioral dimensions: (a) providing a fun atmosphere, (b) praise/appreciation, (c) responsiveness, sensitivity, and adjustment, and (d) positive emotions. PCB encompasses three behavioral dimensions: (a) demand on tempo, (b) directives, criticisms, and love withdrawal, and (c) non-responsiveness/neglect. We generated a third category, traditional Chinese teaching behaviors (TCTB), to capture features of teaching often found in Chinese parents (Fung, 1999; Fung et al., 2004; Luo, 2011; Miller et al., 1997). TCTB consists of two behavioral dimensions: (a) requiring repetition/correcting mistakes and (b) requests for information from the storybook.

Child Temperament as a Moderator between Parental Implicit Beliefs and Practices

Research has found that child temperament is related to parents' and teachers' impressions of preschoolers' adaptability to learning situations. Specifically, children with higher surgency/extraversion (Vélez, 2010), lower negative affect (Fagot & Gauvain, 1997), higher effortful control (Rothbart & Hwang, 2005), lower activity level (Cunningham & Boyle, 2002), higher attentional focusing (Keogh, 1989), and higher inhibitory control (Rothbart & Jones, 1998) were assumed to be full of interest, not easily frustrated, planful, persistent, accustomed to sitting still when necessary, focused, and able to suppress distraction. Parents may inevitably be affected by their impressions of their child's academic propensities when practicing specific parenting strategies in line with their implicit beliefs about learning (Chen et al., 2008). Accordingly, we investigated how each of the above six temperament indicators that have been presumed to imply children's learning propensities plays a role in the connection between maternal beliefs and practices in a shared-reading context.

In summary, we posited that observing parent-preschooler interactions in shared-reading contexts

may serve as a window for understanding the learning milieu of young Chinese children at home before they start formal schooling. By simultaneously considering mothers' impressions of their children's temperaments, we investigated the association between Chinese parents' implicit beliefs about learning and their patterns of involvement during shared reading. We were especially interested in, above and beyond the variance of IVI postulated by Western researchers, the unique predictive power of PVE on mothers' shared-reading behaviors.

Method

Participants

The first author's affiliated institution approved this research based on codes comparable with the Helsinki Declaration. Fifty preschoolers (mean age = 55.20 months, $SD = 3.44$; 20 girls) and their mothers (mean age = 35.42 years, $SD = 3.74$; mean years of education = 15.38, $SD = 2.24$) participated in this study.

Procedure

Each mother-preschooler dyad participated in a 10-minute shared-reading session. Mothers were free to decide how they wanted to read to their children with a picture book that had very few printed words, but rich pictorial content, involving interpersonal interactions and daily routines. Mothers also filled out the Children's Behavior Questionnaire-Very Short Form (CBQ-VSF), and questionnaires assessing PVE and IVI/EVI.

Instruments and Measures

Maternal Incremental View of Intelligence

The participants responded to the three-item version of the EVI Questionnaire (Henderson & Dweck, 1988; as cited in Hong et al., 1999) on a 7-point Likert scale; a sample item is "A person has a certain amount of intelligence, and he/she cannot really do much to change it." All items were reverse-scored so that a higher score indicated a higher IVI. The internal consistency reliability (Cronbach's α) was .85.

Maternal Pragmatic View of Effort

The modified version of the PVE Questionnaire (Lay & Tsai, 2005) consists of four items, each constituting two opposite statements. For example, a sample item contains the following two statements: “Some people may not be able to overcome certain academic difficulties even if they make up their minds to work hard” and “There is no academic difficulty that you cannot overcome if you make up your mind to work hard.” The participants were asked to choose the statement they agreed with more, and then to evaluate the degree of their agreement on a 3-point Likert scale. Thus, each item ends up with a score from 1 to 6. The higher the score, the stronger the belief that effort remains forever effective for performance improvement. The internal consistency reliability (Cronbach’s α) was .83. The English version of the PVE questionnaire is available upon request.

Mothers’ Perceptions of Child Temperament

The CBQ-VSF (Putnam & Rothbart, 2006) measures three factors: surgency/extraversion, negative affect, and effortful control (Rothbart et al., 2001). In addition to these three temperament factors, some of the items that initially belong to the CBQ dimensions of activity level, attentional focusing, and inhibitory control were designated as indicators of mothers’ preexisting impressions of their children’s learning propensities.

Observational Scheme for Parental Shared-Reading Behaviors

The shared-reading sessions were videotaped, and the video clips were coded using the time-sampling method, creating a total of thirty 20-second intervals for each dyad. Mothers’ conversations and behaviors in the video were first transcribed verbatim and then coded via the observation scheme established by Lay and Wu (2012). The total score for each behavioral category was between 0 (did not happen at all) and 30 (happened within every interval). Twenty-five percent of the clips were coded twice by two different observers. The mean inter-observer reliability (Cohen’s κ) was .87 (range = .75-.94). Coding criteria are available upon request.

Results

Preliminary Analyses

CCB occurred, on average, in 11.14 intervals ($SD = 2.59$), which was higher than the rates of PCB ($M = 1.87$, $SD = 2.27$) or TCTB ($M = 7.69$, $SD = 2.78$), $ps < .001$. Maternal PVE and IVI were not significantly correlated. The mean values of PVE and IVI were higher than the scales’ median values ($ts(49) = 2.13, 4.42$, $ps < .05, .001$).

Maternal educational level was related to neither their PVE nor their TCTB. In contrast, mothers with higher educational levels had higher IVI and displayed less PCB and more CCB during shared reading. The only variable that showed gender difference was children’s effortful control ($t(48) = -2.62$, $p < .05$; males = 5.12, females = 5.57).

Central Analyses

We conducted three sets of hierarchical regression analyses. The first and second sets investigated, respectively, whether and how Chinese mothers’ IVI and PVE predicted the three categories of shared-reading behaviors. After controlling for maternal educational level and child gender, IVI (the first set of analyses) or PVE (the second set of analyses) was entered in the second step. The third step included one temperament indicator. To examine the moderating effect of temperament, the fourth step contained the interaction term between the learning belief and the temperament indicator included in the prior steps. The third set of analyses examined whether and how the culturally based belief of PVE had a unique effect in predicting Chinese mothers’ shared-reading behaviors after controlling for IVI.

Maternal Incremental View of Intelligence and Shared-Reading Behaviors

In the analyses examining the predictive power of maternal IVI, aside from maternal educational level significantly predicting higher CCB and lower PCB, no main effects or interaction effects were significant.

Maternal Pragmatic View of Effort and Shared-Reading Behaviors

In the analysis examining the predictive power of maternal PVE, none of the main effects of PVE or temperament indicators were significant. However, the interaction between PVE and child activity level significantly predicted maternal CCB ($\beta = -0.43, p < .05$). The interaction between PVE and child inhibitory control significantly predicted maternal TCTB ($\beta = -0.31, p < .05$). As shown in Figure 1.1, when Chinese mothers perceived their child's activity level to be low, they displayed higher CCB that did not vary with their degree of PVE ($b = 0.25, SE = .22, t(44) = 1.14, p = .26$). When mothers believed their child's activity level to be high, their levels of PVE inversely predicted the amount of CCB they applied ($b = -0.62, SE = .26, t(44) = -2.32, p < .05$).

As shown in Figure 1.2, when mothers perceived their child to have high inhibitory control, they displayed relatively lower TCTB that did not vary with their degree of PVE ($b = -0.10, SE = .19, t(44) = -0.52, p = .61$). When mothers thought their child's inhibitory control to be low, their PVE positively predicted the amount of TCTB they applied ($b = 0.51, SE = .21, t(44) = 2.42, p < .05$). In other words, Chinese mothers' PVE predicted their shared-reading behaviors only when these mothers perceived their child's temperament to be less adaptive in learning situations.

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Maternal Pragmatic View of Effort and Shared-Reading Behaviors (Above and Beyond the Variance of the Incremental View of Intelligence)

To test whether the predictive power of maternal PVE on shared-reading behaviors remains significant after controlling for variations in IVI, the third set of hierarchical regression analyses first controlled for child gender and maternal educational level, and then controlled for maternal IVI. Afterward, PVE, one temperament indicator, and their interaction term were included in the analysis hierarchically. This set of analyses indicated that the interaction between PVE and mothers' impressions of their child's activity level remained significant in predicting maternal CCB ($\beta = -0.43, p < .05$). As shown

Figure 1

Maternal shared-reading behaviors as a function of maternal pragmatic view of effort and impression of child temperament

Figure 1.1. Maternal Child-Centered Behaviors as a Function of Maternal Pragmatic View of Effort and Impressions of Child's Activity Level

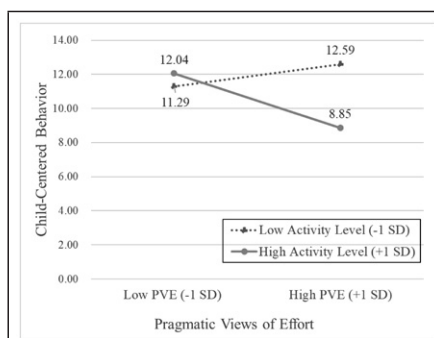


Figure 1.2. Maternal Traditional Chinese Teaching Behaviors as a Function of Maternal Pragmatic View of Effort and Impressions of Child's Inhibitory Control

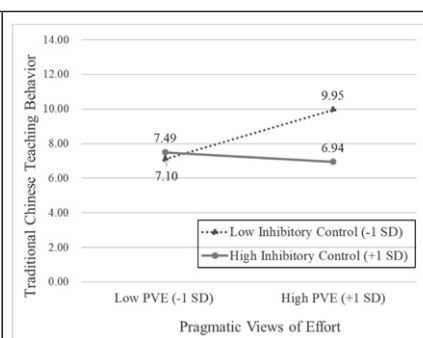
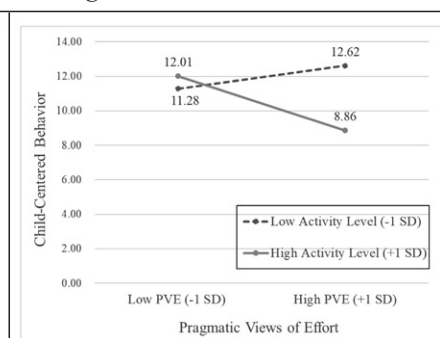


Figure 1.3. Maternal Child-Centered Behaviors as a Function of Maternal Pragmatic View of Effort and Impressions of Child's Activity Level After Controlling for the Variance of Maternal Incremental View of Intelligence



in Figure 1.3, when mothers perceived their child's activity level to be low, they displayed relatively higher CCB that did not vary with the degree of PVE ($b = 0.26$, $SE = .23$, $t(44) = 1.12$, $p = .27$). In contrast, when mothers perceived their child's activity level to be high, their PVE inversely predicted their application of CCB ($b = -0.61$, $SE = .27$, $t(44) = -2.24$, $p < .05$).

Discussion

Demonstrating how cultural values are embedded in parent-child interactions early in life is an essential step in determining whether culture is a valid predictor of individual development. This study investigated whether and how two types of maternal implicit beliefs of learning—the IVI documented in Western research versus the PVE rooted in Chinese learning philosophy—manifest in Chinese mothers' interactions with their young preschool-aged children. The results indicated that neither of the two implicit beliefs could directly predict maternal shared-reading behaviors, echoing Bornstein et al.'s (2018) questioning of any direct link between parental cognitions and parenting practices.

However, when Chinese mothers' preexisting impressions of their child's learning propensities as reflected by their temperament ratings were taken into account, maternal PVE significantly predicted Chinese mothers' CCB and TCTB. In contrast, maternal IVI still could not predict Chinese mothers' shared-reading

behaviors. The significant association between mothers' belief in PVE and their CCB remained significant even when the variance of IVI was controlled for. In other words, the construct of PVE derived from Confucian teachings has a unique effect and cannot be substituted by the Western concept of IVI to predict contemporary Chinese parenting behaviors.

It is also worth noting that although Chinese mothers tended to agree rather than disagree with both types of implicit beliefs, the two beliefs were not significantly correlated. This result further supported that IVI and PVE are distinct concepts that merit separate investigations. On the one hand, maternal educational level significantly predicted constructs coined by Western researchers such as IVI, CCB, and PCB, suggesting that education may have facilitated Westernization in Taiwan. On the other hand, the fact that maternal educational level did not predict concepts (PVE) or maternal behaviors (TCTB) originating from Chinese cultural traditions implies that the culturally rooted beliefs and pedagogies around the idea of effort still prevail among contemporary Taiwanese parents of different backgrounds. In summary, this research demonstrates that culturally ingrained learning beliefs and pedagogies are interwoven with parental perceptions of children's learning propensities, even before the children start school. The dispositional, parental, and cultural factors altogether lead to a learning milieu that situates Chinese children in a culture-bound socioemotional context of learning.