

Cultural Influence on Creativity: The Relationship between Asian Culture (Confucianism) and Creativity among Korean Educators

ABSTRACT

Creativity is a very complex interaction among a person, a field, and a culture (Csikszentmihalyi, 1988). People vary in their native capacity for creativity; however, an individual's interaction with the macrocosm can foster creative expression. East Asian cultures, which include Korean culture, are based upon the principals of Confucianism. The impact of Confucianism on creativity is reviewed and the relationship between Confucianism and creativity was explored in the present study. The study involved comparing 184 Korean educators' scores on a measure of Confucianism (Eastern-Western Perspective Scale) with their scores on a measure of creativity (Torrance Tests of Creative Thinking-Figural). The results indicate that Confucianism is negatively related to creativity. Specifically, some elements of Confucianism, Unconditional Obedience, Gender Inequality, Gender Role Expectations, and Suppression of Expression, may present cultural blocks to creativity. Further, Confucianism was found to be negatively related to Adaptive creative type and Creative Streangths, but not Innovative creative type, which indicates that Adaptive creative type may be more sensitive to, and thus more influenced by, culture.

INTRODUCTION

Researchers have long theorized that multiple factors influence the creativity of a single individual. These factors include the "Four P's of creativity", e.g. Person, Process, Product, and Press (Rhodes, 1961). Person includes cognitive abilities, traits, personality; Process describes the mental processes that are operative in creating ideas, which include preparation, incubation, illumination, and verification; Product includes the ideas expressed in the form of language or craft; and Press includes the relation a person and his or her environment.

While some factors affecting creativity are unique to an individual, most factors affecting creativity have a relationship to a person's macrocosm, e.g., the

environment or culture in which that person exists (Kim, 2007). Thus, a focus on enhancement of an individual's personal domain and creativity skills is insufficient to enhance overall creativity if the individual's cultural setting does not foster creative growth and expression. Many cross-cultural studies illustrate the interaction of culture and creativity (e.g., Lim & Plucker, 2001; Lubart, 1990, 1999; Rudowicz & Hui, 1997; Seo & Lee, & Kim, 2005; Yue & Rudowicz, 2002).

Many studies have found that people from East Asian societies tend to be less creative than people from the more individualistic Western societies (e.g., Bond, 1992; Fielding, 1997; Kim & Michael, 1995; Kim & Sergent, 2004; Rudowicz & Ng, 2003; Saeki, Fan, & Van Dusen, 2001). Thus, something in East Asian culture may present blocks to creativity.

In East Asian cultures, including the Korean culture, Confucianism is the core of the cultural framework (Chaves, 2002; Diriik, 1995; Greer & Lim, 1998; Hahm, 2003; Kim & Park, 2003; Martinsons & Martinsons, 1996). Therefore, this study explored the principles of Confucianism and how the principals affect the creativity of individuals.

East Asian culture is deeply affected by Confucianism because it serves as society's core values, traditions, and ethical and moral foundation for business and social interactions, and it deeply affects people's thinking styles (Chaves, 2002; Diriik, 1995; Greer & Lim, 1998; Hahm, 2003; Kim & Park, 2003; Martinsons & Martinsons, 1996).

CONFUCIANISM AND CREATIVITY

According to Chen and Chung (1994), the principles of Confucian teaching can be summarized as emphasizing education, family system, hierarchical relationships, and benevolence. Therefore, creativity literature has explored the connections between creativity and the components of Confucianism. The macro-cultural element of Confucianism can then be combined with the smaller components.

CREATIVITY AND THE FIRST PRINCIPLE OF CONFUCIANISM: EMPHASIS ON EDUCATION

As a result of Confucianism, East Asian people are highly motivated towards the acquisition of education, including a strong desire to obtain higher degrees and diplomas (Martinsons & Martinsons, 1996; Sorensen, 1994). While this emphasis on education is usually thought of as positive, Confucianism's extreme emphasis on education has some negative consequences in East Asian society. These negative consequences are the extreme competition for acceptance into prestigious universities, which result in psychological and emotional problems including high levels of stress, anxiety (Sung, Lubin, & Yi, 1992), depression (Crittenden, Fugita, Bae, Lamug, & Lin, 1992), and even suicide (Sung, Lubin, & Yi, 1992; Wollam, 1992). These unhealthy emotional and psychological conditions may prohibit the development of creative potential.

Rote-learning and memorization

The extreme competition for higher education has fostered a rigid standardized examination system (Joo & Grow-Maienza, 1997) which emphasizes rote learning and memorization. This almost exclusive reliance on standardized testing for educational assessment ultimately limits creativity (Jeon, 2000; Kim, 1999; Kim & Michael, 1995; Lee & Schallert, 1997; Wollam, 1992).

Belief in hard-work and a devaluing of play

East Asian parents believe that good grades come from hard work, effort, diligence, endurance, perseverance, and persistence (Haynes & Chalker, 1998; Henderson, 1990; Park & Kim, 1999). As a result of the emphasis on hard work, East Asian parents do not accept childhood as a time for play or for having fun (Fielding, 1997; Rudowicz & Hui, 1997) e.g., they devalue play, which creates a work-play dichotomy. However, the limited value placed on play can stifle a child's creativity (Bishop & Chace, 1971; Vygotsky, 1992). Play stimulates a child's imagination (Van Hoorn, Nourot, & Alward, 1993); creative expression and insights (Richards, 1996); and fantasy (Hennessey & Amabile, 1987), and play can be an effective form of self-education for creative children who learn more effectively in non-authoritarian settings (Amabile, 1979; Torrance, 1962, 1977).

CREATIVITY AND THE SECOND PRINCIPLE OF CONFUCIANISM: FAMILY SYSTEM

Overemphasis on Loyalty, Obedience to the Company and the State

The second principle of Confucianism is the hierarchical family system, which emphasizes family loyalty and obedience to elders. This hierarchical system has been transferred to all social organizations (e.g., business and schools). Confucian teachings consider Confucian society itself as a large family in which the unquestioned obedience of the son to the authority of the father is essential (Fah, 2002). This family system was transformed into company loyalty; diligence for self changed into working hard for one's work-place, and domestic paternalism was used to control employees in modern industrial conditions (Kim & Park, 2003).

However, overemphasis on following rules and traditions at work creates organizational barriers to creative innovation (Van Gundy, 1987). However, there is evidence that in modern Asian society creative problem solving and decision making are becoming more important than loyalty and obedience (Williams & Yang, 1999).

Overemphasis on filial piety and dependence

The concept of filial piety is so specific to Confucian culture that no comparable concepts can be found in other cultures (Hwang, 1999). Filial piety, or consanguineous affection, is both a foundation and a supreme principle of human life (Liu, 2003), and it is the most essential value in East Asian peoples' minds (Hwang, 1999). Filial piety and obedience lead students to automatically accept

their parents' or elders' conventional thinking. Filial piety and strict obedience in a family reduce autonomy and independence, discourage divergence, and thus, inhibit creativity.

Strict parenting

East Asian parenting practices, while warm, are very restrictive with narrow limits to acceptable behavior (e.g., Bond, 1992). The expectation of respect for the authority of elders in a home is critical. Parents are authoritative figures who enforce obedience and submissiveness from their children. Negative influences on creativity within a family include: parental vigilance (Getzels & Jackson, 1961), hostile, rigid, and controlling home environments (Halpin, Payne, & Ellett, 1973; Papalia & Olds, 1986). Thus, East Asian parenting practices may have a negative relationship with a child's creativity

CREATIVITY AND THE THIRD PRINCIPLE OF CONFUCIANISM: HIERARCHICAL SOCIAL RELATIONSHIPS

According to Confucius, human relationships should be regulated by the Five Codes of Ethics, which are based on the five basic relationships: ruler/subject, father/son, husband/wife, older brother/younger brother, and between friends. These relationships are assumed to be unequal and complementary (Chen & Chung, 1994; Fan, 2002; Herr, 2003; Hwang, 1999, 2001). Confucian culture has a history of being a rigid hierarchical society in age is valued, males are higher than females, and teachers are greater than students. While this hierarchical society has some advantages for society as a whole, this hierarchy also inflicts upon its subjects a suffocating rigidity and a system of inequitable obligations, which hinders potential and inhibits creativity.

Inequality between men and women

The East Asian Confucian hierarchy dictates an inequitable status for women (Fah, 2002), which forces women into submissive roles (Chung, 1994; Park & Kim, 1999). This rigid gender relationship inhibits creativity in both men and women because two characteristics essential for creativity, e.g., sensitivity and independence (Maslow, 1976) are seen as exclusively feminine or masculine virtues and discouraged in the opposite sex. Other gender traits that affect creativity are: intellectual autonomy (Torrance, 1962) and acceptance of non-traditional gender roles (Fielding, 1983; Grant, 1973).

Respect for teachers

The East Asian Confucian hierarchy dictates respect for elders and teachers (Bathory et al., 1992). Thus, students accept the information from teachers readily and rarely express their opinions or ask questions, which leads to passive students and silent classrooms (Chan, 1999). East Asian teachers emphasize working on well-defined standardized problems. Thus, the interaction between teachers and students does not cultivate creativity or innovation (Albert, 1996; Martinsons

& Martinsons, 1996). In addition, sanctions against questioning and exploration limit the development and expression of creativity (Fielding, 1983).

CREATIVITY AND THE FOURTH PRINCIPLE OF CONFUCIANISM: BENEVOLENCE

The last principle of Confucianism is benevolence. Benevolence includes, but is not limited to, traits such as self-restraint, self-discipline, filial piety, loyalty, personal duty, and positive interpersonal behavior (Chen & Chung, 1994; Fan, 2002; Herr, 2003; Hwang, 1999, 2001). However, the principle of benevolence has brought about negative consequences to creativity due to suppression of emotion, minimization of verbal interaction, and conformity.

Suppression of emotion

One of the guiding principles for human relationships in Confucianism is suppression of emotional expression: even affectionate expression to loved ones is considered inappropriate (Yi, 1993). However, suppression of emotional expression inhibits creativity. The development of creativity in children is enhanced by the expression of feelings and impulses (Lytton, 1971); and by providing children the freedom to express both positive and negative feelings (Domino, 1969).

Minimization of verbal interaction

Confucianism restricts verbal interactions, especially in males. Parents discourage a child's exploratory activity such as telling about their surroundings (Bond, 1992). This results in lower performances in verbal tests of intelligence (e.g., Fielding, 1997). A de-emphasis on verbal interaction and learning can depress creativity (Fielding, 1997).

Conformity

Collectivism & conformity East Asian Confucianism society emphasizes the collective good and harmony, self-regulation (Park & Kim, 1999), conformity and acting predictably within a situational context. Adherence to group interests for the sake of achieving harmony is often justified at the expense of individual interests (Chung, 1994). Social pressures emphasize peer conformity, and the avoidance of appearing different or eccentric, and thus limit the development and expression of creativity (Fielding, 1997). Conformity and uniformity conflict with the creativity and initiative required in scientific and technical work (Cummings, 1994). New creative ideas will not flourish if social systems are rigid or discourage independence and novelty (Rudowicz & Hui, 1997).

The anti-creativity effects of socialization and conformity are also seen in the U. S. and other cultures. A large drop in creativity and curiosity occurs when socialization and conformity is first taught, which occurs in western society beginning in the fourth grade (Axtell, 1966; Kang, 1989; Marcon, 1995; Nash, 1974; Timmel, 2001; Torrance, 1968, 1977; Walker, 1995; Williams, 1976). Nonconformity tends to be a drive in creative children with exceptional mental abilities (Whitmore, 1980).

Negative concepts of creativity

Negative association between creativity and social responsibility In Confucian cultures the characteristics of creative individuals clash with the traditional prized concept of social responsibility. In both Korea and China, the concepts of creativity are similar to westerner concepts; however, society tends to emphasize the negative behaviors and personality characteristics of creative individuals (Chan & Chan, 1999; Lim & Plucker, 2001; Rudowicz & Hui, 1997; Rudowicz & Yue, 2000). Creative individuals are seen as indifferent to other's opinions; they cause conflicts when working in groups; and they are headstrong and rude.

This emphasis on the negative characteristics of creative individuals in Confucian cultures can be a critical obstacle to creative activity (Lim & Plucker, 2001). The stigma placed on those who are different extends to people's views about creative behavior, which enforces self-limiting creative expression. Thus, Confucian culture suppresses creative impulses externally and creates internal barriers to creativity.

Innovative and Adaptive Creative Types

Creativity manifests itself in two types: Innovative and Adaptive. Kirton (1976) proposed that creativity was composed of a single dimension ranging from an "Innovative" to an "Adaptive" orientation. Other researchers believe Innovation and Adaptation may be separate dimensions of creativity rather than opposite ends of a continuum (Kim, 2006b; Kim, Cramond, & Bandalos, 2006). This orientation identifies the two separate ways individuals approach creativity, problem solving, and decision making (Puccio, Treffinger, & Talbot, 1995). Innovators create change by threatening the paradigm, whereas Adaptors create change by working within the existing paradigm (Kirton, 1976). Innovators produce quick and novel responses, whereas Adaptors are detailed and deep thinkers. Innovators are significantly more fluent and more original than Adaptors (Torrance & Horng, 1980; Isaksen & Puccio, 1988).

According to the model hypothesized by Kim (2006b; Kim, Cramond, & Bandalos, 2006), the TTCT individual variables can be selectively combined to measure innovative creative type (e.g., a combination of Fluency, Originality, and Resistance to Premature Closure) and adaptive creative type (e.g., a combination of Elaboration, Abstractness of Titles, and Resistance to Premature Closure). The logic for the double loading by Resistance to Premature Closure originated from Torrance's theoretical assumption of creative individuals (Kim, 2006b). The principals of Confucianism and East Asian cultures may affect Innovative and Adaptive types of creativity differently.

Research Hypotheses

The hypothesis of this study is that a person who adheres to Confucianism will be less creative and that an inverse relationship should be present between adherence to Confucianism and creativity scores. In addition, a research question is whether Confucianism affects innovative and adaptive types of creativity differently.

METHODS

INSTRUMENTATION

Two instruments were used in this study: The Eastern-Western Perspective Scale (EWPS) to measure the degree to which an individual held Confucian ideals and Torrance Tests of Creative Thinking-Figural (TTCT) to measure creativity.

The Eastern- Western Perspective Scale (EWPS)

The Eastern-Western Perspective Scale (EWPS) measures the extent to which a person's views align with Confucian ideals. To compare levels of Confucian ideals with levels of creativity, the Confucianism categories from the literature review were used to group the content items on the scale where Confucianism was broken down into elements that were then compared to creativity research. This process helped in organizing a theoretical basis for the instrument.

Originally, the EWPS consisted of 70 items. There were two stages of item analyses. The initial item analysis was based on the comments provided by several scholars in Korea who are knowledgeable about Confucianism to test the content validity of the EWPS. Eleven confusing or outdated content items were removed based on the scholar's comments, therefore, the first item analysis resulted in 59 items. The second item analysis for the second EWPS was based on the information from item-total score correlations, reliability analyses, frequency distributions for the items along with skewness and kurtosis, a factor analysis, and theoretical reasons. The data was collected from 411 Korean people, which included 69 people from the Southeast, 133 from the Northwest, and 209 from the Southwest Korea. Sixty-two of these 411 participants were high school students, 157 of them were college students, and 192 of them were teachers. Ten items were removed, and the wording of other items was changed after the second item analysis, which resulted in a 49 item scale. As shown in the example of the EWPS found in the appendix, each item is answered on a Likert scale of one to five, with one meaning less Confucian and five meaning the most. Thus, higher total scores of the EWPS indicate a more Confucian perspective, and lower total scores of the EWPS indicate a less Confucian perspective (except for certain "reversed items," specifically 4, 6, 42, and 45). The reliability coefficient alpha of this scale was .917.

Four exploratory factor analyses were conducted on the EWPS items: A factor analysis was conducted on the items for the First Principle of Confucianism, Importance of Education (9 items), which resulted in two factors:

- Devaluing Play; Work-Play Dichotomy: Items 19, 27, 29, 35, & 40
- Emphasis on Education: Items 24, 26, 37, & 48

A factor analysis was conducted on the items for the Second Principle of Confucianism, Family System (13 items), which resulted in three factors:

- Filial Piety: Items 23, 30, & 36
- Unconditional Obedience: Items 25, 32, 42, 43, 44, & 45
- Loyalty to the Authority: Items 6, 11, 31, & 47

A factor analysis was conducted on the items for the Third Principle of Confucianism, Hierarchical Relationships (11 items), which resulted in three factors:

- Gender Inequality: Items 5, 9, 10, 14, 15, 18, & 22
- Gender Role Expectations: Items 4, 7, 8, & 41

A factor analysis was conducted on the items for the Forth Principle of Confucianism, Benevolence (16 items), which resulted in three factors:

- Conformity: Items 33, 34, & 38
- Self-Effacement: Items 1, 2, 3, 16, & 17
- Suppression of Expression: Items 12, 13, 20, 21, 28, 39, 46, & 49

The Torrance Tests of Creative Thinking-Figural (TTCT — Figural)

The TTCT was developed by Torrance in 1966. It has been re-normed five times: in 1974, 1984, 1990, 1998, and in progress. The TTCT has two different versions: the TTCT-Verbal and TTCT-Figural (Kim, 2006a). In the present study only the TTCT-Figural was used. The TTCT displays adequate reliability and validity (Cooper, 1991; Treffinger, 1985) as a test of creativity. The TTCT is more researched and analyzed than any other creativity instruments (Swartz, 1988; Treffinger, 1985). It has been translated into over 35 languages (Millar, 2002), is the most widely used test of creativity (Davis, 1997), and is the most referenced of all creativity tests (Lissitz & Willhoft, 1985).

The TTCT is comprised of five norm-referenced measures of Fluency, Originality, Elaboration, Abstractness of Titles, and Resistance to Premature Closure, and thirteen criterion-referenced measures of Creative Strengths. Each subscale is scored as follows (Torrance, 1998):

Fluency: The number of relevant ideas

Originality: The number of statistically infrequent ideas

Elaboration: The number of ideas added

Abstractness of Titles: The degree beyond labeling

Resistance to Premature Closure: The degree of psychological openness

The “Creativity Index (CI)” is established by standard scores of each of five variables are used according to the TTCT Norms-Technical Manual (Torrance, 1998). Raw scores are converted into standard scores and the standard scores for each of the five norm-referenced measures are averaged. The number of the frequency of creative strengths is added to the averaged standard scores to yield a CI, which is an overall indicator of creative potential (See the TTCT manual for the standard scoring procedures, Torrance, 1998).

PARTICIPANTS

One hundred eighty-four Korean educators participated in the present study. These educators were all enrolled in TTCT scoring training or a creativity-training workshop. Thus, the participants were tested on the first day of their multi day training sessions in order to limit the influence of the training. The participants were grouped into three regions: southwest, northwest, and southeast. The TTCT and the EWPS were administered to 62 (53 of the responses were returned)

educators from southwest Korea, 44 (43 of the responses were returned) educators from northwest Korea, 95 (88 of the responses were returned) educators from southeast Korea. Thus, the total sample size was 184. Eighty-four of the educators were tested on the TTCT Figural-A, while 100 were tested with the TTCT Figural-B.

Participants included 82 males and 102 females with a mean age of 38.67 years (range 22 - 62; $SD = 8.52$). As noted all were educators, however, 114 were teachers at elementary, middle, and high school levels; 16 college professors; 12 employees of educational institutes; and 42 graduate students who planned teach at different levels of school in Korea.

RESULTS

The results are reported using the Bonferroni procedure because when using multiple correlation coefficients or multiple comparisons per study, the widely used Bonferroni (1937) technique limits the familywise Type I error rate and protect against Type I error.

Confucianism: EWPS Scores

The mean (M) and standard deviation (SD) for the EWPS total score are reported in Table 1. The M EWPS total scores were 143.97 ($SD = 21.79$) for the entire group, 154.79 ($SD = 19.44$) for males, and 135.27 ($SD = 19.65$) for females.

TABLE 1. Descriptive Statistics for Participants' Responses for the Four Principles of Confucianism and each Element of the Principles (N = 184[82 for Male and 102 for Female])

4 Principles of Confucianism	Confucianism Factor	Male (SD)	Female (SD)	Total (SD)
	EWPS Total	154.79 (19.44)	135.27 (19.65)	143.97 (21.79)
Importance of Education	Devaluing Play	3.66(.57)	3.20(.59)	3.40(.62)
	Emphasis on Education	3.25(.61)	3.13(.66)	3.19(.64)
Family System	Filial Piety	3.63(.75)	3.30(.58)	3.45(.68)
	Unconditional Obedience	2.52(.66)	2.25(.56)	2.37(.62)
	Loyalty to the Authority	3.14(.69)	2.86(.54)	2.98(.62)
Hierarchical Relationship	Gender Inequality	3.18(.66)	2.43(.60)	2.77(.73)
	Gender Role Expectations	2.95(.60)	2.40(.46)	2.64(.60)
Benevolence	Conformity	3.22(.72)	3.11(.81)	3.16(.77)
	Self-Effacement	3.54(.64)	3.14(.67)	3.32(.69)
	Suppression of Expression	2.94(.58)	2.53(.55)	2.71(.60)

An independent sample t-test was conducted to examine whether there is a significant gender difference in the EWPS total scores. Males had a significant higher *M* EWPS Total score than females ($t [182] = 6.73, p < .0001$).

The *M*s and *SD*s for each element of the EWPS are reported in Table 1. The highest average responses were for Devaluing Play and Work-Play Dichotomy ($M = 3.40$ with $SD = .62$) of the First Principle of Confucianism (Importance of Education) and Filial Piety ($M = 3.45$ with $SD = .68$) of the Second Principle of Confucianism (Family System). The lowest average responses were for Unconditional Obedience ($M = 2.37$ with $SD = .62$) of the Second Principle of Confucianism (Family System). A MANOVA was conducted to examine whether there is a gender difference in the 10 elements of the EWPS. The result shows a significant gender effect (Wilks's $\Lambda = .76, F[10, 173] = 12.80, p < .0001$).

An ANOVA on each of the 10 elements were conducted as follow-up tests to the MANOVA. Using Bonferroni adjustment, each ANOVA was tested at the .005 ($\pm = .05/10$) level. The results showed that males agreed to the elements of the EWPS significantly higher than females. Males agreed especially significantly ($\alpha = .01/10 = .001$) higher to Devalue Play ($F[1, 182] = 28.67, p < .0001$), Gender Inequality ($F[1, 182] = 66.02, p < .0001$), Gender Role Expectations ($F[1, 182] = 48.90, p < .0001$), Self-Effacement ($F[1, 182] = 16.90, p < .0001$), and Suppression of Expression ($F[1, 182] = 23.67, p < .0001$) when compared to females. However, there was no significant difference between males and females in Emphasis on Education ($F[1, 182] = .147, p = .227$) or Conformity ($F[1, 182] = .96, p = .328$).

The *M*s and *SD*s for each item of the EWPS were examined. Most subjects agreed to Item 3 ($M = 3.98, SD = .899$: 76.1% of them agreed or strongly agreed), Item 11 ($M = 3.859, SD = .83$: 79.3% of them agreed or strongly agreed), Item 19 ($M = 3.859, SD = .88$: 74.5% of them agreed or strongly agreed), and Item 23 ($M = 3.87, SD = .84$: 78.8% of them agreed or strongly agreed). The example of the EWPS found in the appendix shows each item.

Creativity: The TTCT Scores

The *M*s and *SD*s for the CI of the TTCT are reported in Table 2. The *M* scores of the CI were 125.01 ($SD = 17.91$) for the entire group, 120.73 ($SD = 18.63$) for males, and 128.45 ($SD = 16.62$) for females. An independent sample t-test was conducted to examine whether there is a significant gender difference in the CI. Females had a significant higher *M* CI than males ($t [182] = 2.97, p = .003$).

The *M*s and *SD*s for Innovative and Adaptive creative types and Creative Strengths are reported in Table 2. A MANOVA was conducted to examine whether there is a gender difference in Innovative creative type, Adaptive creative type, and Creative Strengths. The result shows a significant gender effect (Wilks's $\Lambda = .86, F[3, 180] = 9.48, p < .0001$).

An ANOVA on each dependent variable were conducted as follow-up tests to the MANOVA. Using Bonferroni adjustment, each ANOVA was tested at the .0167 ($\pm = .05/3$) level. The results showed that females had significantly higher scores

than males on Adaptive creative type ($F[1, 182] = 11.74, p = .001$) and Creative Strengths ($F[1, 182] = 25.95, p < .0001$). However, there was no significant difference between males and females in Innovative creative type ($F[1, 182] = .017, p = .896$).

TABLE 2. Descriptive Statistics for CI and Innovative Creative Type, Adaptive Creative Type, and Creative Strengths ($N = 184$ [82 for Male and 102 for Female]).

	Male (SD)	Female (SD)	Total (SD)
CI	120.73(18.63)	128.45(16.62)	125.01(17.91)
Innovative Creative Type	346.16(47.26)	345.25(45.72)	345.66(46.28)
Adaptive Creative Type	333.61(56.35)	362.04(55.18)	349.40(57.55)
Creative Strengths	9.35(4.06)	12.58(4.43)	11.14(4.55)

Confucianism and Creativity

The correlation coefficient between the total score of the EWPS and the CI is reported in Table 3. The correlation was negative and significant ($r = -.44, p < .0001$). The correlation between the EWPS total score and the CI were significant even after Bonferroni adjustment.

TABLE 3. Correlation Coefficients among TTCT (CI, Innovative Creative Type, Adaptive Creative Type, and Creative Strengths), Confucianism Elements, and Age ($N = 184$ [82 for Male and 102 for Female]).

	Age	CI	Innovative	Adaptive	Strengths
Age		-.163	.051	-.219	-.334**
EWPS Total	.382**	-.439**	-.157	-.387**	-.650**
Devaluing Play	.352**	-.301**	-.128	-.235*	-.460**
Education	.220*	-.215*	-.119	-.203*	-.286**
Filial Piety	.029	-.233*	-.050	-.253*	-.261**
Obedience	.266**	-.384**	-.145	-.336**	-.528**
Loyalty	.047	-.112	.025	-.122	-.285**
Inequality	.384**	-.318**	-.107	-.289**	-.506**
Role Expectations	.313**	-.324**	-.112	-.274**	-.469**
Conformity	.042	-.290**	-.154	-.211*	-.456**
Self-Effacement	.332**	-.259**	-.091	-.222*	-.378**
Expression	.328**	-.412**	-.139	-.365**	-.578**

Note. * $p < .01$, two-tailed. ** $p < .05/112$ (i.e., Bonferroni Correction), two-tailed.

The correlations between age and EWPS and between age and CI were examined. The correlation between the total score of the EWPS and age was significant ($r = .38, p < .0001$). This correlation differed between male and female participants though. The correlation between EWPS total scores and age for males at the average age of 42.13 ($SD = 7.40$) was significant ($r = .43, p < .0001$), whereas the correlation between EWPS total scores and age for females at the average age of 35.89 ($SD = 8.37$) was not significant ($r = .15, p > .05$). The correlations between EWPS total scores and age for both the total group and the male group were significant after adjusting the level of significance using the Bonferroni procedure. The correlation between the CI and age was negative, but not significant ($r = -.16, p > .01$).

The correlations between Innovative creative type and EWPS total scores and between Innovative creative type and each EWPS element were examined, but none of the correlation coefficients were statistically significant ($p > .01$).

The correlations between Adaptive creative type and EWPS total scores and between Adaptive creative type and each EWPS element were examined, and all of the correlation coefficients were statistically significant ($p < .01$). The correlation coefficients between Adaptive creative type and EWPS total scores ($r = -.39, p < .0001$), Obedience ($r = -.34, p < .0001$), Gender Inequality ($r = -.29, p < .0001$), Gender Role Expectations ($r = -.27, p < .0001$), and Suppression of Expression ($r = -.37, p < .0001$) were significant even after Bonferroni adjustment.

The correlations between Creative Strengths and EWPS total scores and between Creative Strengths and each EWPS element were examined, and all of the correlation coefficients (ranged from $r = -.26$ to $r = -.65$) were statistically significant ($p < .0001$) even after Bonferroni adjustment.

A multiple regression analysis was conducted to predict CI from EWPS total scores, age, and gender. The regression model yielded $R^2 = .19$, adjusted $R^2 = .18$, $F(3, 180) = 14.40, p < .001$. The results indicated that only the EWPS total scores were statistically significant to account for variation in the CI ($\beta = -.43, p < .001$). Gender ($\beta = .03, p = .736$) and age ($\beta = .01, p = .883$) were not statistically significant to account for the magnitude of the CI.

DISCUSSION

Confucianism

Korean male educators show more Confucian ideas than female educators, which may be explained by the male-dominant aspects of Confucianism. Men, who benefit from gender role elements of Confucianism, would naturally favor such beliefs. This is supported by the biggest gender differences found in Gender Inequality of the third Confucianism principle. The smallest gender differences were found in Emphasis on Education and Conformity, which indicate that most Korean educators accept these two elements of Confucianism. The average scores for each element of the four principles of Confucianism indicate that Work Ethic and Filial Piety are the most essential value to Korean educators. In contrast, not many participants agreed with the concept of Unconditional Obedience.

The average scores for each Confucianism item on the EWPS support previous research. Most of the educators agree to the items: "When my children want to get married to someone, they should have my permission," "I will financially support my children's college education," and "Children should always obey their parents." This is consistent with Hwang's (1999) interpretation in that one of the present versions of filial piety is the mutual interdependence of family members. Most parents consider educating and taking care of their children as their duty, and as a result most children assume the obligation of filial piety and are willing to repay the duty by taking care of their aging parents. Most Korean educators also agreed to "The better you are, the more self-effacing you should be." This is linked to the Confucian value of modest behavior that is a highly respected virtue in East Asian countries (Martinsons & Martinsons, 1996). In contrast, the specific items may have significant agreement among Koreans, but these concepts would probably not be as uniformly accepted among Americans (Kim & Sergent, 2004).

Male and female subjects have significantly different opinions on certain EWPS items. Males and female generally disagreed on "Kitchen work is a woman's job," "A man who talks to his wife about his life outside the home is not considered a real man," and "It is inappropriate to hug my spouse in front of my parents." Men tend to range between undecided to agree, whereas the majority of women consistently disagree with these items. The item, "An obedient woman is better than a willful woman," shows an even stronger gender divide, with all women disagreeing.

Creativity

There is no statistically significant difference in creativity between male and female educators. Previous research on gender differences in creativity scores was inconclusive. Gupta (1981), Jaquish and Ripple (1980), Kim and Michael (1995), and Richardson (1986) found gender differences, while Ogawa, Kuehn-Ebert, and De Vito (1991), Runco (1991), and Saeki et al. (2001) did not find gender differences. Even among those who found gender differences, some reported higher scores for males, others reported higher scores for females.

In contrast, when examining Innovative and Adaptive creative types and Creative Strengths separately, women tend to show greater levels of Adaptive creative type (Elaboration plus Abstractness of Titles) and Creative Strengths, whereas there was no gender difference in Innovative creative type (Fluency plus Originality). This is consistent with an early study by Torrance (1974) who found that women tended to score higher in the area of Elaboration; however, he had not created Abstractness of Titles and Creative Strengths at that time.

Confucianism and Creativity

The present study found that higher levels of Confucianism consistently are related to lower measure of creativity in general, which is consistent with the literature review on Confucianism (Kim, 2007). The Confucian categories that

showed the strongest negative relationship to creativity are Unconditional Obedience, Gender Inequality, Gender Role Expectations, and Suppression of Expression.

Unconditional Obedience is exemplified by the EWPS item: "People with greater seniority should have a much stronger voice in a company than those with less seniority". The present study found that Unconditional Obedience, which is inflexible, is negatively related to creativity, which is consistent with previous research that indicates flexibility is necessary for creative problem solving (Van Gundy, 1987; Williams & Yang, 1999). Additionally, the present study found that men who agree to Unconditional Obedience tend to be less creative than women who agree to Unconditional Obedience.

Gender Inequality and Gender Role Expectations are exemplified by the EWPS items: "A man should be the head of the household," "An obedient woman is better than a willful woman," and "I would worry if my daughter never married." The present study found that Gender Inequality and Gender Role Expectations are negatively related to creativity, which is consistent with previous studies in that rigid gender roles are creativity inhibitors (Eriksson, 1989; Grant, 1973; Jellen & Urban, 1986; e.g., Fielding, 1983).

Suppression of Expression is exemplified by the EWPS items: "It should not be easy to fall in love" and "It is better to be wary of eccentric people." The present study found that Suppression of Expression is negatively related to creativity, which is consistent with previous studies in that Suppression of Expression resists and corrupts the development of creativity (Averill, 1999, Averill & Nunley, 1992; Domino, 1969; Lytton, 1971; MacKinnon, 1978; Smith & Carlsson, 1990).

When considering age, creativity is neither enhanced, nor diminished with age, nor is the relationship affected by gender. Older men tended to be more Confucian than younger men, however, this pattern was not found among women. Further, the negative relationship between Confucianism and creativity is slightly higher for men than for women. In part, this may have been because the males in the present study tended to be older than the females. However, it could be because East Asian men tend to be more Confucian than women. Regardless, neither gender nor age could predict creativity according to the results of the multiple regression analysis. Only Confucianism can predict creativity.

Confucianism and Adaptive/Innovative Creative Type

This study indicated that Confucianism has very little relationship with Innovative creative type but that Confucianism has a strong negative relationship with both Adaptive creative type and with Creative Strengths. This result indicates that the Adaptive type of creativity is more sensitive to, and thus more influenced by, culture.

Previous literature indicated that Fluency (which is a part of Innovative creative type in the present study) was not affected by the cultural differences between the U.S. and Japan (Ogawa, Kuehn-Ebert, & DeVito, 1991, cited in Saeki

et al., 2001; Saeki et al., 2001). Runco's description of creativity (1993) indicates that an original idea or product (which is a part of Innovative creative type in the present study) must prove adaptive (which is related to Adaptive creative type in the present study) in some sense because originality by itself may characterize bizarre and obviously inappropriate work or behavior. Simonton (1999) explained that an innovative symphony (which is a part of Innovative creative type in the present study) that fails to make a deeper emotional connection with the audience will fail by the criterion of adaptiveness (which is related to Adaptive creative type in the present study). Thus, Adaptive creative type may operate as a part of society and thus may be more influenced by society. Conversely, Innovative creative type may always be innovative regardless of social constructs and thus is less influenced by society.

One limitation worth mentioning is that scoring Originality on the TTCT test requires culture-specific Originality Lists (Kim, 2006a). Korean Originality Lists have not been developed thus the present study may not be able to adequately determine if the Originality scores were influenced by culture.

IMPLICATIONS

Seo, Lee, and Kim (2005) found that Korean science teachers' understanding of creativity appeared to emphasize only the cognitive components but ignored environmental components. Although a person needs cognitive ability to be creative, if the culture either does not value, or discourages, creative growth and expression, then a person's creativity may not flourish. To encourage creativity, society must remove cultural blocks that inhibit creativity. The present study indicates that some elements of Confucianism; Unconditional Obedience, Gender Inequality, Gender Role Expectations, and Suppression of Expression seem to present cultural blocks to creativity.

In our search for ways to strengthen East Asian students' education, we must not only find new techniques, but must recognize, and change, the parts of the system that are inhibiting creativity. The best creative techniques and the strongest creative personality may not compensate for a culture that crushes creativity. Creative growth demands that East Asians adapt its rigid boundaries of Gender Role Expectations, Gender Inequality, Unconditional Obedience, and Suppression of Expression into a creativity-friendly environment. Only through a thorough evaluation of East Asian culture and the elements of the culture that block creative energies, and the construction of more fertile creative soil can East Asian students rise to new levels of creative achievement.

Finally, it should be noted that all of the subjects in the present study consisted of educators. This limits the generalization of the results to the entire Korean population even though the results can be generalized to the Korean educators. For future studies, it would be appropriate to conduct research on samples that can represent the entire diverse population to address issues such as education, occupation, social status, and economic level.

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APPENDIX

EASTERN-WESTERN PERSPECTIVE SCALE (EWPS)

Please read following sentences and circle one that is the closest to what you think. There is no right or wrong answer.

Item	Content	Strongly Disagree	Dis-agree	Unde-cided	Agree	Strongly Agree
1	Affection should be kept within the heart rather than expressed.	1	2	3	4	5
2	A person with deepest thought speaks the least.	1	2	3	4	5
3	The better you are, the more self-effacing you should be.	1	2	3	4	5
4	It is okay if a husband stays at home and raises his children if his wife has a job.	1	2	3	4	5
5	The mother should be the primary caregiver for the children.	1	2	3	4	5
6	It is good that Parents are friends with their children.	1	2	3	4	5
7	It is inappropriate to hug my spouse in front of my parents.	1	2	3	4	5
8	A man who talks to his wife about his life outside the home is not considered a real man.	1	2	3	4	5
9	A man should be the head of the household.	1	2	3	4	5
10	Discipline is the father's primary child care role.	1	2	3	4	5
11	When my children want to get married to someone, they should have my permission.	1	2	3	4	5
12	It should not be easy to fall in love.	1	2	3	4	5
13	Modesty is more important than self-esteem.	1	2	3	4	5
14	An obedient woman is better than a willful woman.	1	2	3	4	5
15	I would worry if my daughter never married.	1	2	3	4	5
16	A man should not be talkative.	1	2	3	4	5
17	Modesty comes with wisdom.	1	2	3	4	5
18	A woman's place is in the home.	1	2	3	4	5
19	I will financially support my children's college education.	1	2	3	4	5
20	Showing emotion is a sign of immaturity.	1	2	3	4	5
21	Talking about my children's talents to other people should be restrained.	1	2	3	4	5
22	Kitchen work is a woman's job.	1	2	3	4	5
23	Children should always obey their parents.	1	2	3	4	5
24	College graduation is more important than what my child may learn from a high school job.	1	2	3	4	5

25	I expect my employees to follow my directions rather than suggesting new ideas.	1	2	3	4	5
26	A career as an educator is superior to that of a business professional.	1	2	3	4	5
27	Working hard is more important than enjoying one's life.	1	2	3	4	5
28	It is better to be wary of eccentric people	1	2	3	4	5
29	Work must be separate from play.	1	2	3	4	5
30	Elderly parents should live with their children, who will take care of them.	1	2	3	4	5
31	You should be loyal to your company until you retire.	1	2	3	4	5
32	People with greater seniority should have a much stronger voice in a company than those with less seniority.	1	2	3	4	5
33	I should be like everyone else.	1	2	3	4	5
34	I would rather be normal than be creative and a little different.	1	2	3	4	5
35	You must work hard and save money when you are young.	1	2	3	4	5
36	Throughout a person's life his or her parents should always come first.	1	2	3	4	5
37	Teachers should be respected at all times.	1	2	3	4	5
38	Conflict should be avoided at all times.	1	2	3	4	5
39	A genius is abnormal.	1	2	3	4	5
40	I want my children to study hard rather than to play sports.	1	2	3	4	5
41	A married man should put his parents' wishes above his wife's.	1	2	3	4	5
42	A healthy relationship is found between equals.	1	2	3	4	5
43	You should obey your boss and never voice disagreements.	1	2	3	4	5
44	Students should not question what they are taught by their teachers.	1	2	3	4	5
45	It is good to stand out for your individual qualities.	1	2	3	4	5
46	Eccentricity has no positive components.	1	2	3	4	5
47	Men should be masculine and women should be feminine.	1	2	3	4	5
48	Students should not speak until they are spoken to by their teacher.	1	2	3	4	5
49	When I make decisions, group opinions are more important than personal ones.	1	2	3	4	5

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