Creative Organizational Climate of Schools, General Self-Efficacy, Creativity Self-Efficacy, and Cultural Efficacy of Teachers

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The aim of the present study is to examine the characteristics of the creative organizational climate of Chinese schools, teachers' general self-efficacy, creativity self-efficacy and cultural efficacy of own culture and to analyse the relations between these four core variables. Our analyses revealed significant teaching duration differences, age differences and a significant two-way school × teaching subject interaction in creative organizational climate as well as significant gender difference in general self-efficacy. Results of a path analysis revealed significant path coefficients were from creative organizational

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climate to cultural efficacy of own culture, general self-efficacy, from general self-efficacy to cultural efficacy of own culture and creativity self-efficacy, and from cultural efficacy of own culture to creativity self-efficacy. Analyses only revealed evidence for an indirect pathway from creative organizational climate to creativity self-efficacy. Results suggest the development of interventions to increase creative organizational climate and enhance general self-efficacy in educational practices.

Key words: creative organizational climate, general self-efficacy, creativity self-efficacy, cultural efficacy

Introduction

Bandura (1986) assumed that collective efficacy is rooted in self-efficacy. In our own studies we found that there were significant correlations between the three variables: general self-efficacy, creativity self-efficacy and cultural efficacy (e.g., Yi, Scheithauer, & Lin, 2008). More precisely, Yi et al. (2008) discovered in their study using path analysis that both creativity self-efficacy and cultural efficacy were rooted in general self-efficacy. They concluded that on the one hand, a cultural environment that is individual-oriented is probably more conducive to fostering self-efficacy, while the collective-oriented cultural environment may have inhibited the development of self-efficacy. On the other hand, a cultural environment that is individual-oriented may have inhibited the development of cultural efficacy, while a collective-oriented cultural environment is perhaps more conducive to fostering cultural efficacy. The concrete reflection of cultural environment in a school is the organizational climate of the school.

> Every inventor, even a genius, is always the outgrowth of his time and environment. His creativity stems from those needs that were created before him, and rests upon those possibilities that, again, exist outside of him… Creativity is a historically continuous process in which every next form is determined by its preceding ones (Vygotsky, 1987, p. xi).

Vygotsky paid more attention to the context of the outgrowth of creativity than creativity itself and he thought that children first learn to create, manipulate, and give meaning to signs and symbols through play. Play also allows them to tease out relationships, try on and practice different roles, and exercise their growing capabilities (cited from Moran & John-Steiner, 2005). Other researchers also support Vygotsky's notion that children's everyday play is associated with later creativity, especially with divergent thinking (Russ, Robins, & Christiano, 1999). Thus, the living environment of a child with enough chances to play seems to be necessary for the creativity development of the child. On the one hand, children should have time and freedom to play, and on the other hand they should have a place and atmosphere to play.

The social psychological perspective focuses on creativity as an individual behavior influenced by the behaviors and characteristics of others. Many studies have researched how others, in the context of social situations, can affect creativity performance by affecting motivation. In the componential model of creativity (Amabile, 1983, 1996), task motivation is one of the three major components of creativity, along with domain-relevant skills and creativity-relevant processes. Amabile (1993) proposed that individuals are intrinsically motivated when they seek enjoyment, interest, satisfaction of curiosity, self-expression, or personal challenge in their work. Tighe, Picariello, and Amabile (2003) suggest that teacher's attitudes, perceptions, beliefs, and behaviors can have an important influence on children's intrinsic motivation and creativity, that is teachers can serve as an important model of intrinsic motivation. The students of teachers who believe in the importance of student autonomy tend to be curious, prefer challenging work, and desire to master work independently. When children perceive that their teachers have relatively high internal motivation toward work, the children themselves are more intrinsically motivated and perceive themselves as more competent and more creative. Furthermore, when children perceive to a greater extent a warmth relationship to their teachers, the children appear to be more intrinsically motivated and more creative than children who do not perceive a warmth teacher-child relationship. In addition, Tighe et al.

(2003) found some important personality traits of teachers whose students show higher expression of creativity: likeability, satisfaction with children's behavior, enthusiastic, courteous, interest in children's needs and professional.

There are many subjective and objective variables that can influence teachers' motivations, attitudes, perceptions, beliefs, and behaviors. Because generally teachers pay much time in their schools or own departments and have many interactions with their leaders, colleagues, and other workers, the variable of organizational climate could be a significant one. Especially the creative organizational climate might be a core variable that can influence teachers' mental situation and behaviors, and then influence the creativity development of their students.

Climate has been defined in different ways by different investigators (Rousseau, 1988). Commonly, organizational climate is held to be reflected in peoples' perceptions of, or beliefs about, environmental attributes shaping expectations about outcomes, contingencies, requirements, and interactions in the work environment (James, James, & Ashe, 1990). The typical climate questions are just like whether "people are not afraid to take risks around here" or whether "employees feel free to express their ideas to bosses". From these kinds of questions, we can find that climate is held to be a domain referenced phenomenon (e.g., climate for creativity, climate for service) in which multiple variables, or dimensions, influence the outcomes or performances in the domain under consideration (Hunter, Bedell, & Mumford, 2007). There are several theoretical frames that have been used to concretely assess the climate variables.

A research group at the Frankfurt University in Germany (Preiser, 2006) developed questionnaires in order to assess the quality of the learning and working environment in various organizations, such as kindergartens, schools, business, and administrations: KIK ("Kreativitäts — und Innovationsfreundliches Klima", which might be translated as "Creative and Innovative Climate"). These questionnaires are used for the research and improvement of the learning and working environment. The research group identified four main aspects concerning the creativity atmosphere: (a) activation of curiosity, thinking, and action through stimulating learning and working

environments, (b) goal-oriented and intrinsic motivating settings, (c) an open and trusting atmosphere, and (d) fostering personal freedom and nonconformity.

Other research groups in Germany gained similar results concerning the relevance of leadership and atmosphere for innovative processes: perceived pressure for change, expected changeability of the work processes, and professional stimulation by the expertise of the superior proved to enhance innovations (Krause, 2004).

Chiou (2006) developed a Creative Organizational Climate Inventory (COCI) to assess the degree of organizational climates that may facilitate or inhibit employee's creativity. He found that there were seven main categories/factors influencing the organizational creativity, including "organizational idea", "working style", "resource availability", "teamwork operation", "leadership efficacy", "learning and progress", and "environmental atmosphere". Creative organizational climate might impact some individual variables, such as general self-efficacy, creativity self-efficacy and cultural efficacy.

General Self-efficacy

Self-efficacy refers to "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). The construct of self-efficacy is one core theoretical point of Bandura's socal-cognitive theory (Bandura, 1977, 1997, 2001). Researchers suggest that a high level of self-efficacy is related to better mental, physical health and easier social adaptation (Bandura, 1997; Schwarzer, 1992). General self-efficacy (GSE) is related to a broad and stable sense of personal competence to deal effectively with a variety of stressful situations (Schwarzer, 1992; Schwarzer, Mueller, & Greenglass, 1999).

The General Self-Efficacy Scale, developed to measure this construct at the broadest level, has been adapted to many languages (Luszczynska, Gutiérrez-Doña, & Schwarzer, 2005; Scholz, Gutiérrez-Doña, Sud, & Schwarzer, 2002). The psychometric properties of this instrument were examined among 19,120 participants from 25 countries. The previous findings confirmed that the measure is configurally

equivalent across cultures, that is, it corresponds to only one dimension. The results also pointed to a number of cross-cultural differences, specifically, Japanese and Hong Kong Chinese displayed the lowest levels of GSE. The Chinese females were found to be significantly lower in GSE than males. The authors supposed that self-efficacy may be rated lower in collectivistic cultures than individualistic cultures. The Chinese were regarded as less individualistic than Westerners, so the researchers said that it would be interesting to compare their scores in future studies with corresponding levels of collective self-efficacy (Bandura, 1995; Schwarzer, Bäßler, Kwiatek, Schröder, & Zhang, 1997).

Creativity Self-efficacy

Obviously, general self-efficacy is domain-general and refers to a global confidence in one's generalized sense of self-efficacy. However, self-efficacy is commonly understood as domain-specific; that means, one can have more or less firm self-beliefs in different domains or particular situations of functioning. Creative self-efficacy has been defined as "the belief one has the ability to produce creative outcomes" (Tierney & Farmer, 2002). A three-item scale was developed by Tierney and Farmer to assess creative self-efficacy (manufacturing, $\alpha = .83$; operations, $\alpha = .87$). The authors used data from two different companies and tested a new construct, creative self-efficacy, tapping employees' beliefs that they can be creative in their work roles. It was also found that creative self-efficacy predicted creative performance beyond the predictive effects of job self-efficacy.

Beghetto (2006) examined correlations of creative self-efficacy in middle and secondary school students ($N = 1, 322$). Three items were used to assess creative self-efficacy ($\alpha = .86$). Specially, items in this study were intended to measure students' beliefs about their ability to generate novel and useful ideas and whether they viewed themselves as having a good imagination. The three items were (a) "I am good at coming up with new ideas", (b) "I have a lot of good ideas", and (c) "I have a good imagination". Results demonstrated that students' mastery- and performance-approach beliefs and teacher feedback on creativity ability were positively related to students' creative self-efficacy.

Creative self-efficacy was also linked to student reports of their teachers not listening to them and sometimes feeling that their teachers had given up on them. Students with higher levels of creative self-efficacy were significantly more likely to indicate that they planned to attend college than students with lower levels of creative self-efficacy. Finally, they found that students with higher creative self-efficacy were significantly more likely to report higher levels of participation in after-school academics and after-school activities than students with lower creative self-efficacy.

However, both of the instruments have been developed with American samples and there is still a lack of studies examining the cross-language equivalence concerning the theoretical construct of Creativity Self-Efficacy. As both of the studies' aims were not to develop an instrument to measure creativity self-efficacy, studies devoted to this topic are necessary.

Cultural Efficacy

People do not live their lives in social isolation. They frequently need a collective effort in the face of difficulties and challenges. Bandura (1986, 1997) defined a group-level self-efficacy belief — collective efficacy — as "shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments" (Bandura, 1997, p. 477) and he supposed that the collective efficacy is rooted in self-efficacy, so that research on personal efficacy does not necessarily reflect an individualistic bias in psychology. Bandura (1986) thought that the strength of groups, organizations, and even nations lies partly in people's sense of collective efficacy that they can solve their problems and improve their lives through concerted effort. So we can say that there are different levels of collective efficacy.

Researchers have found disparities with regard to the way in which collective or group efficacy operate across cultures (Klassen, 2004). For example, for collectivists, group or collective beliefs also appear to be key motivational components that foster achievement. Earley (1993) found that managers who came from generally collectivist cultures appeared to express the highest levels of efficacy beliefs (and

performance) when they believed they were working with an in-group. Conversely, managers from a predominantly individualist cultural background performed best, and expressed the highest self-efficacy beliefs, when they believed they were working alone. Earley's study (1994) also indicated that group-level training was most effective for improving expectations, effort, and performance in managers with a collectivist orientation whereas managers from an individualist cultural orientation benefited primarily from individual-level instruction.

One of the core variables in the present study is the collective efficacy of culture — cultural efficacy, which is defined as perceived beliefs about the capability of the people in some kind of culture to achieve goals and manage the environment. Bernal and Froman (1987) developed the Cultural Self-Efficacy Scale (CSES) to assess the perceived sense of self-efficacy among community health nurses caring for culturally diverse clients. The nurses who completed the CSES were found to have neutral to low self-efficacy when caring for three ethnic groups (African-Americans, Puerto Rican, and Southeast Asians). In a second study, Bernal and Froman (1993) found that greater knowledge of transcultural nursing through formal and informal coursework increased the nurses' perceptions of confidence in caring for culturally diverse clients. Their findings also support the view that intercultural interactions and work experiences increase cultural self-efficacy. St. Clair and McKenry (1999) demonstrated that students who experienced international clinical experiences had higher cultural self-efficacy than those who had not. Similarly, another study demonstrated increased cultural self-efficacy scores among students participating in learning experiences with minority populations (Williamson, Stecchi, Allen, & Coppens, 1996). In an integrated review of the cultural self-efficacy literature derived from the analysis of 26 published studies using the CSES spanning all regions of the U.S., nurses reported low to neutral sense of self-confidence, while students in the U.S. report slightly higher mean levels than their respective practicing nurses (Coffman, Shellman, & Bernal, 2004). Lowest perceptions of confidence in providing care were consistently found with Southeast Asians, followed by Hispanics and African-Americans. Findings indicate, however, that coursework and educational experiences can increase students' levels of self-

efficacy in delivering culturally competent care. No published or unpublished studies were found that addressed levels of confidence in caring for elders.

However, this kind of cultural self-efficacy was more about the work of eldercare or nursing, and the items of the scale were more about the eldercaring or nursing techniques (Shellman, 2006). So actually this kind of scales is working self-efficacy or working attitude for the people coming from different cultures. Furthermore, with regard to the measurement of collective efficacy, in the present study while self and culture are two different conceptions, so the conception of cultural efficacy is used.

Relations Between Creative Organizational Climate and General Self-Efficacy, Creativity Self-Efficacy, and Cultural Efficacy

A previous study by Yi et al. (2008) on the relations between general self-efficacy, creativity self-efficacy, and cultural efficacy demonstrated that there were significant correlations among the three variables. Their path analysis showed that both of the creativity self-efficacy and cultural efficacy were rooted in general self-efficacy, which supports the assumptions by Bandura (1986). Finally, the authors did not find a direct effect by cultural efficacy on creativity self-efficacy.

Based on the assumptions made by Mau (2000), Yi and his colleagues (Yi et al., 2008) concluded that on the one hand, the culture that is individual-oriented is probably more conducive to fostering self-efficacy, while the collective-oriented culture may have inhibited the development of self-efficacy. On the other hand, the culture that is individual-oriented may have inhibited the development of cultural efficacy, while the collective-oriented culture is perhaps more conducive to fostering cultural efficacy. Climate is held to be the concrete peoples' subjective perception or beliefs about some kind of cultural environment.

Research Questions

On the one hand, the present study aims at examining the characteristics of the creative organizational climate of Chinese schools, the general

self-efficacy, creativity self-efficacy and cultural efficacy of the teachers in these schools. On the other hand, the present study aims at examining the relations between the four core variables.

Method

Participants

A total of 110 teachers (31 males, 76 females and 3 unidentified) from one elementary school and one secondary school in Jiangsu Province of China were recruited. The mean ages for the teachers were 26.57 ($SD = 7.38$). Among the teachers, 35 teach Chinese, 34 teach Math, 15 teach English and 24 teach Science (two subjects did not answer the question). Seven teachers were born in the 1960s, 77 teachers were born in the 1970s and 20 were born in the 1980s (6 of them did not specify their age). As for teaching experience, 27 teachers had 1 year experience, 33 had 2-year experience, 12 had 3-year experience, 10 had 4-year experience, and 15 had 5-year experience.

Measures

Creative Organizational Climate Inventory (COCI)

The Creative Organizational Climate Inventory (COCI; Chiou, 2006) is a teacher inventory containing 35 items. The COCI has been developed to assess the degree of organizational climates that may facilitate or inhibit employee's creativity (e.g., item 34: "Our school emphasizes the value of freedom, openness, innovation and transformation"). As the original version of the COCI has been developed for use in research and development departments, we slightly modified the inventory to make it proper for the usage in schools. The COCI includes seven subscales and the items are rated on a 7-point scale ranging from "absolutely right" to "absolutely wrong". The scale scores can be summed in order to generate a total score. The reported internal consistencies (Cronbach's α) of the scales were as follows: .97 for the total scale, .82 to .95 for the seven subscales.

General Self-Efficacy (GSE) Scale

The General Self-Efficacy (GSE) Scale (Schwarzer & Jerusalem, 1995) was used to assess perceived beliefs about the ability to achieve goals and manage the environment (e.g., "When I am confronted with a problem, I can find several solutions"). It consists of 10 items on a 4-point Likert-type scale ranging from "not at all true" to "exactly true". The Chinese version has been translated and validated in China by Zhang and Schwarzer (1995). The GSE scale has been used in numerous research projects where it typically yielded internal consistencies between alpha = .75 and .91. The psychometric properties of this instrument were examined among 19,120 participants from 25 countries and the results suggested that it is a unidimensional and universal construct (Scholz et al., 2002).

Cultural Efficacy (CE) Scale

 The Cultural Efficacy (CE) Scale (Yi et al., 2008) has been developed to assess perceived beliefs about the ability of the people in some kind of culture to achieve goals and manage the environment (e.g., "The people in this country have the resourcefulness to handle unforeseen situations") (Yi et al., 2008). Reliability analyses yielded an internal consistency of .89 for the 6 items of the formal vision of Cultural Efficacy Scale. Results of a confirmatory factor analysis (CFA) confirmed a single-factor model. In the present study only the data of the cultural efficacy of own culture was collected.

Creativity Self-Efficacy (CSE) Scale

The Creativity Self-Efficacy (CSE) Scale (Yi et al., 2008) was used to assess perceived beliefs about the ability to produce novel and appropriate ideas, works, or productions (e.g., "I am certain that I can produce novel and appropriate ideas"). Reliability analyses yielded an internal consistency of .83 for the 5 items of the formal vision of the CSE. A confirmatory factor analysis (CFA) confirmed a single-factor model.

The internal consistencies of the instruments' scales are displayed in Table 1.

Results

Table 1 displays means, standard deviations, and score ranges of the predictor variable, the hypothesized mediators, and the criterion variable. Table 2 gives the scores of 4 variables with regard to gender, age, level of teaching experience, and teaching subjects of the 2 schools.

At first, an ANOVA was conducted to examine the gender, age, teaching subject, school and teaching duration differences of teachers on creative organizational climate. Gender was taken as the covariate variable. We found significant teaching duration differences, $F (4, 86) = 3.92$, $p < .01$. Our analysis reveals that the longer the teaching duration, the higher the creative organizational climate the teachers perceive. Concretely, the COCI scores of the teachers who have 1 to 5 years teaching duration were 3.84, 4.42, 4.76, 4.45 and 4.97, respectively. There were also significant age differences, $F (2, 86) = 3.83$, $p < .05$. The teachers who were born in the 1960s gained the highest COCI score ($M = 4.93$), and the teachers who were born in the 1980s gained the lowest ($M = 4.41$). The COCI scores of the teachers born in the 1970s were in between ($M = 4.47$). Moreover, the effect of a two-way school × teaching subject interaction was also found to be significant, $F (2, 86) = 4.99$, $p < .05$, suggesting that the school differences of the COCI scores were affected by the different teaching subjects. In elementary school the teachers who teach foreign language gained the highest COCI scores ($M = 4.70$), however, in secondary school the highest COCI score were obtained by science teachers ($M = 4.81$). The science-teaching teachers' COCI scores in elementary school ($M = 4.42$) were the lowest, and the foreign language-teaching teachers' COCI scores of secondary school ($M = 4.28$) were the lowest.

Table 1 **Means, Standard Deviations and Cronbach's α for the Scales** (*N* =110)

	M	*SD*	Range	α
Creative organizational climate	4.46	.78	2.5–5.9	.95
General self-efficacy	2.94	.54	1.7–4.0	.85
Cultural efficacy of own culture	3.25	.66	1.7–4.0	.89
Creativity self-efficacy	2.99	.62	1.4–4.0	.83

Table 2 **Means of Variables with regard to Gender, Age, Level of Teaching Duration, and Teaching Subjects**

		COC	GSE	CEO	CSE
Gender	female	4.52	2.88	3.22	2.93
	male	4.34	3.14	3.39	3.15
Age	1960s	4.93	3.30	3.45	3.20
	1970s	4.47	2.93	3.20	2.93
	1980s	4.41	2.94	3.44	3.16
Teaching duration	1 year	3.84	3.07	3.38	3.04
	2 years	4.42	2.93	3.23	2.98
	3 years	4.76	2.65	3.12	2.80
	4 years	4.45	3.19	3.40	3.28
	5 years	4.97	2.85	3.04	2.79
Teaching subject of elementary school	Chinese	4.35	3.09	3.31	3.12
	Math	4.41	2.82	3.30	2.88
	English	4.70	3.28	3.49	3.32
	Science	4.42	3.10	3.41	3.19
Teaching subject of secondary school	Chinese	4.36	2.91	3.13	2.73
	Math	3.94	2.14	2.37	2.16
	English	4.28	2.43	2.83	2.67
	Science	4.81	2.47	2.94	2.60

Note.   COC = Creative Organizational Climate, GSE = General Self-Efficacy,
   CEO = Cultural Efficacy of Own Culture, CSE = Creativity Self-Efficacy.

Secondly, an ANOVA was conducted to examine the gender, age, teaching subject, school and teaching duration differences of teachers in general self-efficacy. Only gender differences were found, $F (1, 106) = 7.58$, $p < .01$: males ($M = 3.27$) obtained significantly higher scores on the general self-efficacy scale than females ($M = 2.88$).

Thirdly, an ANOVA was conducted to examine the gender, age, teaching subject, school and teaching duration differences in teachers' cultural efficacy and creativity self-efficacy. No significant effect was found.

We obtained significant correlation coefficients for the four variables (COC, CEO, GSE, CSE). We conducted a path analysis to examine the relationships between the four variables. Figure 1 shows that the path coefficients from COC to CEO, GSE and CSE are .22 ($p < .001$), .16 ($p < .05$) and -.05 n. s., respectively. The path coefficients from GSE to CEO and CSE are .72 ($p < .001$) and .76 ($p < .001$), respectively and the coefficient from CEO to CSE is .25 ($p < .001$). These results suggest that the direct effects of COC on GSE, CEO, and CSE are .16, .22, and −.05, respectively. And the indirect effects of COC on CEO and CSE are .12 and .21, respectively. The direct effects of GSE on CEO and CSE are .72 and .76, respectively, the indirect effect of GSE on CSE is .18 and the direct effect of CEO on CSE is .25. In general, about 83% variance of CSE can be explained by the other three variables, $F (3, 108) = 79.94$, $p < .001$. About 38% variance of CEO can be explained by the other two variables, $F (2, 108) = 51.64$, $p < .001$. Moreover, about 23% variance of GSE can be explained by COC, $F (1, 108) = 5.82$, $p < .05$ (see Table 3).

Finally, we examined a mediation model with regard to Figure 1. Mediation is said to occur when an effect of a predictor on the outcome is explained by some intervening variable (Shrout & Bolger, 2002). Mediation requires that the predictor significantly affects the outcome as well as the mediator, that the mediator significantly affects the outcome, and that the effect of the predictor on the outcome vanishes (full mediation) or decreases (partial mediation) when the mediator is included (Baron & Kenny, 1986).

Figure 1   Path Analysis of the Four Variables
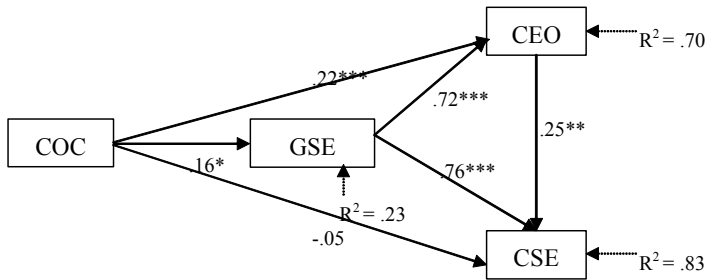
* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed)

Table 3   The Effects of the Variables in Path Analysis

Independent variable		GSE	CEO	CSE
COC	direct effect	.16	.22	-.05
	indirect effect		.12	.21
	total effect	.16	.34	.16
GSE	direct effect	–	.72	.76
	indirect effect	–	–	.18
	total effect	–	.72	.94
CEO	direct effect	–	–	.25
	indirect effect	–	–	–
	total effect	–	–	.25

Note. COC = Creative Organizational Climate, GSE = General Self-Efficacy,
        CEO = Cultural Efficacy of Own Culture, CSE = Creativity Self-Efficacy.

The Sobel test was applied to calculate the significance of each observed indirect effect of a predictor on an outcome through a mediator (Sobel, 1982).

In the mediation model, general self-efficacy continued to affect creativity self-efficacy directly, and cultural efficacy of own culture continued to affect creativity self-efficacy directly. However, results also imply the existence of indirect pathways from creative organizational climate to creativity self-efficacy through general self-efficacy and cultural efficacy. Statistical significance of these indirect paths was supported by the Sobel test. $Z = 2.37$, $p < .05$ for the path from creative organizational climate to creativity self-efficacy through general self-efficacy; $Z = 3.99$, $p < .001$ for the path from creative organizational climate to creativity self-efficacy through cultural efficacy of own culture.

Discussion

The aim of the present study was to examine the characteristics of the creative organizational climate of Chinese schools, the general self-efficacy, creativity self-efficacy and cultural efficacy of the teachers in these schools and the analyses of the relations between the four core variables. First of all, we found significant of teacher's perception of the creative organizational climate of schools on the background of different teaching duration. Our analyses demonstrated that the longer the teaching duration, the higher the perceived creative organizational climate of the teachers. Probably those teachers who have more teaching experience and more communication chances seem to have more freedom to design their classroom, lessons, or teaching styles. Although it is impossible for a teacher to automatically become an expert from novice, each of them has the opportunity to grow in their professional field from novice to proficient, from proficient to expert teacher. Sternberg and Horvath (1995) developed a prototype view of expert teaching. They thought that the prototype expert is knowledgeable and is more effective than a novice. Moreover, experts are more likely to arrive at creative solutions to problems — solutions that are both novel and

appropriate. Although the expert teachers do their jobs in the same work place like a novice, they have better perception of the organizational climate than the novice teachers.

Against the background of these arguments we can easily understand the age differences we have found: The older teachers who were born in the 1960s or earlier are almost the expert teachers. Teachers who were born in the 1980s, have probably the least teaching experience, and most of them were born under the one-child policy. It is probably the reason why their perception of creative organizational climate was the lowest. Jiao and her colleagues (Jiao, Ji, & Jing, 1986) found that Chinese "only children" are more egocentric, whereas sibling children possess the positive qualities of persistence, cooperation, and peer prestige. They also found that the occupation and educational background of parents and the number of generations living together are not decisive in determining the behavioral qualities of Chinese children in the Beijing area under study. So when the former only children later become school teachers, they may be more egocentric and less cooperative than their colleagues born in the 1970s or 1960s, and this element can interact with the novices' teaching level. Therefore, they perceive a relatively lower creative organizational climate. Moreover, they have probably a higher and stricter standard about what is an ideal creative organizational climate than their colleagues born in the 1960s or 1970s. Rosenberg and Jing (1996) thought that in China the impact of changing family structure on culture and values could be very deep. They gave an example that China has a history of strong cultural emphasis on the family, and usually it is the father who held the absolute authoritarian position in the family. However, after the one-child policy, traditional family structures and parental practices changed considerably. The children had greater freedom and greater say, and the researchers thought that a more interactive parent-child relationship may be potentially a precursor of a more democratic environment. As a consequence, these later school teachers would probably prefer to work in a more democratic climate than their colleagues born in the 1960s and 1970s. As this greater value is placed on the individual, ultimately the culture will reflect this change. This point could also be the reason why teachers born in the 1980s obtained the lower scores of COCI.

We found gender differences on the general self-efficacy scale. Our result confirmed the finding of Schwarzer and his colleagues (Schwarzer et al., 1997) that Chinese females had significantly lower scores of GSE than males. Research in child development and in sociology demonstrates that males have a greater sense of self-efficacy, personal control, and mastery than females do in American society (Gecas, 1989). Some previous reviews of the psychological (developmental) research on gender differences (Block, 1983; Maccoby & Jacklin, 1974) shows that females have a more potent self-concept than males, as well as that they score higher than males on aggression, activity level, and impulsivity. Girls indicate more evidence than boys of learned helplessness in achievement situations (Dweck, Davidson, Nelson, & Endar, 1978). In computer self-efficacy Whitley (1997) found a dramatic age trend. In grammar school samples no gender difference was found. However, males revealed significant higher computer self-efficacy than females in high school participants.

However, extensive new evidence from meta-analyses of research on gender differences (e.g., Hyde, 2005) supports the gender similarities hypothesis that males and females are alike on most — but not all — psychological variables. In her review of 46 meta-analyses, Hyde found that some notable exceptions are some motor behaviors (e.g., throwing distance) and some aspects of sexuality. On these variables, the results showed large gender differences. Moreover, studies reveal a moderate gender difference on aggression. The common explanations for these gender differences involve cultural factors (e.g., sex-role stereotypes), structural factors (e.g., the structure of social environments of two genders) or both. Gecas (1989) thought that sex-role socialization, therefore, also implies socialization into different conceptions of self-efficacy for boys and girls. This is reflected in the toys and games boys and girls usually play, with their differential opportunities for the development to efficacy (Block, 1983). Hyde (2005) claimed that gender differences can vary substantially in magnitude at different ages and depend on the context in which measurement occurs.

In traditional Chinese society, there were big differences between men and women.Women were more dependent and had less opportunity to have their own choice. Generally, the Chinese culture is traditionally

patriarchal, with Confucianism being the protocol for proper family life *jia* for many centuries (Chan & Lee, 1995; Tang, 1999). The ethical norms of Confucianism prescribe a patriarchal, patrilineal, and patrilocal family system, and have rooted Chinese women into their inferior, dependent, and submissive roles which they play throughout their lives. The Confucius decorum of *san cong si de* (three obediences and four virtues) and *xian qi liang mu* (a virtuous wife and a good mother) forms the basis of model womanhood. Respectable women should be obedient to their fathers when young, to their husbands when married, and to their sons when widowed; and should possess the four virtues of fidelity, tidiness, propriety in speech, and commitment to needlework. A good woman in traditional Chinese society is one who performs the role of a virtuous wife and good mother well. Although there was modernization in the last decades in China, especially under big western influence in the twentieth century, the traditional cultural values still play a role in the socialization of Chinese girls and boys.

In our path analysis we could prove the significant positive relationships between the creative organizational climate of schools, the general self-efficacy, the cultural efficacy of own culture, and the creativity self-efficacy of teachers. Specially, there was only an indirect effect from COC to CSE through GSE and CEO, and no direct path effect. Somewhat different from the cross-cultural study of self-efficacy (Yi et al., 2008), there was also a significant effect from CEO to CSE found in the present study. The greater the creative organizational climate of the schools, the higher the level of the general and creativity self-efficacy and cultural-efficacy of own culture. The higher the general self-efficacy, the higher the cultural efficacy of own culture and creativity self-efficacy. Furthermore, the results also confirmed Bandura's (1986) argument that collective efficacy is rooted in self-efficacy. It seems that creativity self-efficacy was also rooted in general self-efficacy. Our results demonstrated the possible impact of creative organizational climate on the variables of efficacy in Chinese schools. Of course, the causality cannot be assumed as such from this study as these specific measures were obtained at the same point in time. A stronger evidence of causality would be needed on the base of longitudinal study results.

With regard to the relations between the occupations and worker's self-efficacy, Kohn and Schooler (Kohn, 1969, 1976; Kohn & Schooler, 1973, 1983) have done the most prominent work. They focused on conditions of work that enable or inhibit self-direction in some of their studies. They have found these occupational conditions to significantly impact the value of self-direction, degree of intellectual flexibility and several aspects of personality similar to self-efficacy. Generally, the authors have found that the greater the freedom experienced on the job and the more complex and challenging the work, the more likely the workers to value individual freedom and self-direction, to be intellectually more flexible, and to have higher level of self-efficacy.

In their studies, Kohn and his colleagues also found the significant relationship between "sense of powerlessness" and occupational self-direction ($r = -.21$), which is higher than between "ownership and hierarchical status in the company and occupational self-direction ($r = -.13$)". They claimed that "in all cases, job affects man more than man affects job" (Gecas, 1989):

> …a variable called "self-directedness", which at first glance seems relevant to self-efficacy, but in fact is a conglomerate of various "good" attributes. Kohn and Schooler define it as follows: "Self-directedness is reflected in not having authoritarian conservative beliefs, in having personally responsible standards of morality, in being trustful of others, in not being self-deprecatory, in not being conformist in one's ideas, and in not being fatalistic"…

Other scholars also have found that work autonomy, flexibility, and complexity are conducive to the development of workers' self-efficacy (Gecas, 1989).

Results of the present study could be useful for the development of intervention programs that increase the likelihood of personal effectiveness of teachers such as general or creativity self-efficacy, or collective efficacy such as cultural efficacy of own culture in school. Results suggest that interventions should promote the creative organizational climate of the school, and in order to increase teachers' self-efficacy, cultural efficacy and creativity self-efficacy. Strategies for enhancing the creative organizational climate of school could be based

on the knowledge about the seven dimensions of COC (Chiou, 2006), that is, organizational idea, working style, resource availability, teamwork operation, leadership efficacy, learning and progress, and environmental atmosphere. Or more concretely, the strategies should be based on the four sources of self-efficacy (Bandura, 1997), that is, mastery experiences, vicarious experiences provided by social models, social persuasion, and reduction of people's emotional arousal (in particular anxiety).

Acknowledgements

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