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Chinese Students' Perceptions of Characteristics of Effective College Teachers: A Mixed Analysis

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This study aimed to investigate Chinese students' perceptions of effective teaching. Four hundred and thirty college students participated in this investigation. They were asked to identify 3 to 6 characteristics of effective college instructors and explain why. Themes were extracted from these qualitative data via constant comparison analysis, which then were analyzed quantitatively via descriptive and canonical discriminant analysis. The results showed that the Ethical theme was the most frequently perceived characteristic of effective college teachers. Interestingly, this theme was not reflected in the teacher evaluation forms that are currently used to evaluate teachers in China. Further, the themes identified in this study were compared with themes identified in Onwuegbuzie et al.'s (2007) study among U.S. students. The theme of Responsive received the lowest endorsement in both countries. Further, the theme of Expert had a very high endorsement rate in both countries. Also, the theme of Student-Centered received the highest endorsement from U.S. participants, in contrast to a modest endorsement from Chinese participants. Three themes, Humorous, Open-Minded, and Glamour, emerged as new themes in the Chinese sample. The implications of these findings are discussed.

Student evaluations of teachers (SETs) can be tracked as early as the 1920s (Kulik, 2001). Since then, SETs have been developed for different purposes. For example, in the 1990s, SET was adopted for administrative purposes rather than for student or faculty improvement. In the 2000s, SETs were used to improve higher education (Onwuegbuzie, Daniel, & Collins, 2009). In recent years, many universities and colleges worldwide have implemented SETs for personnel decisions such as tenure and promotion. Meanwhile, a number of studies have been conducted investigating how SET was related to effective teaching (e.g., Ginns, Prosser, & Barrie, 2007; Schulte, Slate, & Onwuegbuzie, 2011). This issue has been further discussed in international discourse in recent years. Agnew (2011) investigated the impact of school socioeconomic status on SET rating in New Zealand and claimed that students from mid socioeconomic status score their teachers higher than do students from any other socioeconomic status. Shirbagi (2011) claimed that Iranian students perceived SET differently based on their gender. Female students were more in agreement with teachers' charisma and leniency in SET than were male students in Iran.

Researchers (e.g., Alhija & Fresko, 2009; Anderson et al., 2012; Kane, Sandretto, & Heath, 2004; Kulik, 2001; Okpala & Ellis, 2005; Onwuegbuzie et al., 2009; Onwuegbuzie et al., 2007; Slate, LaPrairie, Schulte, & Onwuegbuzie, 2011) have claimed that students' perceptions were important to effective teaching for college instructors because they served as a motivational factor. Some characteristics of effective teaching with respect to SETs have been identified in various studies. For instance, caring for students and their learning, teaching verbal skills, and being dedicated to teaching were identified in Okpala and Ellis's (2005) study. Pedagogical skills, knowledge of subject, and interpersonal relationships emerged in Kane et al.'s (2004) study. Further, teaching style, presentation skills, enthusiasm, and fairness related to grading were identified in Crumbley, Henry, and Kratchman's (2001) study. Onwuegbuzie et al. (2007), who investigated 912 college students' perceptions of characteristics of effective college instructors, identified the following nine themes that represented effective teacher characteristics: *responsive*, *enthusiast*, *student-centered*, *professional*, *expert*, *connector*, *transmitter*, *ethical*, and *director*. Onwuegbuzie et al.'s (2007) article has attracted much attention since its publication in 2007. Indeed, for six consecutive years, it was the most downloaded article among all articles ever published in the *American Educational Research Journal*. Further, using Harzing's (2009) Publish or Perish software and Google Scholar, already this article has been cited in more than 100 works.

SETs in the Chinese Context

SETs have been used in Chinese universities and colleges since the 1980s, and it now has become a dominant approach to measuring teacher effectiveness (Wei & Liu, 2013). Researchers (e.g., Ding, Wang, & Chen, 2011; Luo & Cheng, 2012; Wei & Shen, 2002; Wu & Yan, 2009; Wu & Yu, 2012) explored SETs with respect to effective teachers in China both theoretically and empirically. On one hand, theoretical studies (e.g., Luo & Cheng, 2012) have led to the conclusion that the essence of effective teaching is to help students accumulate learning experience and to develop their critical thinking skills. To achieve this goal, college faculty members must set up a teaching objective that helps students become independent learners.

Meanwhile, college faculty members are recommended to have a belief that both faculty and students make progress in their classes. That is, they are not knowledge deliverers; rather, they need to possess an open attitude to their students and to learn something from their students. During this teaching process, both college faculty members and their students gain new knowledge through communication. In addition, effective college faculty members are expected to be good time managers. They use time efficiently and effectively in their classrooms. They have a plan on how to control time in order to maximize students' learning. Another set of theoretical studies has represented the synthesis of Western research in the SETs domain (e.g., Ding et al., 2011; Sun, 2009; Wang, 2011; Zhou, 2012, 2013).

A number of comparative studies (e.g., Lou & Wei, 2011; L. Wang, 2007, 2010) explored the similarities and differences between the SETs used by U.S. and China's administrators, including aims, indicators, and implications. In these studies, researchers usually selected one (or several) SET forms from each country as a basis for comparison. Wang (2007) selected SET forms from a U.S. university and a Chinese university and concluded that the content, the emphasis, and the methods in the U.S. SET forms were consistent with social constructivist beliefs such as knowledge construction by students and instructors, student-centered instruction, and development of students' abilities and skills. In contrast, SET forms in China were constrained to traditional teaching beliefs such as transmitting knowledge from an instructor to their students and teacher-centered teaching. In addition, U.S. SET forms had indicators to assess instructors' fairness that is a missing part in Chinese SET forms. Lou and Wei (2011) argued that both U.S. and Chinese SET forms are aimed to evaluate effective teaching. However, U.S. SET forms included more indicators on student learning than did Chinese SET forms. In summary, SET forms in China have tended to evaluate how well teachers delivered their lectures. The underlying principle in Chinese SET forms has been to assess how well the instructor was transmitting knowledge in a teacher-centered class setting. In contrast, SET forms in the United States have tended to evaluate student-centered pedagogy with an emphasis on educational democracy.

On the other hand, in most empirical studies, researchers have characterized effective teaching in China as being heavily reliant on SET forms (e.g., Wei & Shen, 2002; Wu & Yan, 2009; Wu & Yu, 2012). Wu and Yan (2009) investigated characteristics of effective college teachers at two universities, one research-based and the other teaching-based. The analysis was based on a four-dimension SET form for the teaching-based university and a five-dimension SET form for the research-based university. The two SET forms had four dimensions in common: teaching attitude, teaching content, teaching method, and teaching effect. Wu and Yan (2009) found that students from the research-based university emphasized teaching effect more than did students from the teaching-based university when analyzing the SET data. Meanwhile, all students perceived that teaching attitude and teaching content were important for effective teaching.

Aside from the aforementioned empirical studies that were based on established SET forms, a few studies have been conducted to elicit college students' opinions regarding effective instructors. In particular, Cai and Zhang (2005) concluded that college students valued teaching methods, teaching effects, and teaching attitudes as being the most important aspects of effective instruction. Wei (1993) identified five dimensions of college instructors' effective teaching: teaching skills, depth of the content knowledge the instructor possessed, teaching style, positive attitude, and student-teacher interaction. Wang (2008), who investigated 300 college students' perceptions of effective college instructors, extracted the following six themes: ability, responsibility, ethical, creative thinking, charms of personality, and positive attitude.

In the aforementioned studies, most Chinese universities have used their SET forms with four first-level indicators: teaching attitudes, teaching method, teaching content, and teaching effect (e.g., Mao & Qin, 2011; Wang & Li, 2011). Because these SET forms were developed by administrators, students' perceptions of effective college instructors were rarely considered as being important indicators in these forms. Another problem with Chinese university administrators developing their own SET forms was that the language used to describe these indicators was too abstract for students to understand the meanings accurately. Unlike SET forms in the United States, most SET forms used in China's universities lack empirical evidence of score reliability and score validity (Chen, 2005).

Educational Significance of the Study

Onwuegbuzie et al.'s (2007) SET model has been popular since its inception. The present study assessed this model on a Chinese sample and, thus, further examined its validity. It was hoped that the knowledge gained from the present study would be helpful in better understanding characteristics of effective college teachers in China's cultural context. Another expected contribution was that investigating students' perceptions would facilitate the development of appropriate SET instruments. As previously mentioned, most SET instruments in both China and the United States have been developed based on administrators' perceptions of effective teaching. Thus, another

contribution of the current study was that it provided students' perspectives of effective instructors, which added new understandings regarding effective teaching when developing SET constructs. It was hypothesized that there are differences between U.S. and Chinese students' perceptions due to the cultural difference. Also, it was hypothesized that there are gender and location/socioeconomics differences in the Chinese sample, which were discussed in Agnew's (2011) and Shirbagi's (2011) studies.

Research Questions

The purpose of this study was to expand on Onwuegbuzie et al.'s (2007) study by examining Chinese college students' perceptions of characteristics of effective teachers. Three research questions guided this study: (a) What are Chinese college students' perceived characteristics of effective college instructors? (b) To what extent are there differences between Chinese students' perceived characteristics of effective college instructors and those identified in Onwuegbuzie et al.'s (2007) study? and (3) What are the effects of students' gender, major, originality (i.e., location of their families), and grade point average (GPA) on their perceived characteristics of effective college instructors?

Method

Participants and Setting

A criterion sampling scheme (Onwuegbuzie & Collins, 2007) was used in this study. Specifically, the criteria used were that each participant was either an undergraduate student or a graduate (i.e., Master's) student who was majoring in either education or in psychology. Participants were 430 students from a university in a city of Shandong Province, China. The university was ranked as a Tier-2 university (i.e., top 30) among more than 100 normal universities in China. The university values both teaching and research with a student body of 30,000. Of the 430 participants, 191 were majoring in education (pre-service teacher program), whereas 239 were majoring in psychology (non-pre-service teacher program). The two majors were in the same college, the College of Education. Therefore, it was convenient for data collection. The majority of the participants was female (n = 337, 78.4%). The mean GPA of the participants was 2.67 (SD = 0.74) on a 4-point scale. The participants ranged in age from 18 to 30 years (M = 21.88, SD = 2.105). There were 332 undergraduate students and 98 graduate students (in the Master's programs) participating in this study. Participation was voluntary. They were not compensated for completing the survey.

Instrument and Procedure

All participants were administered a questionnaire that elicited information regarding Chinese college students perceptions of effective college teaching. The questionnaire contained an open-ended question, which asked college students to list between three and six characteristics that they believed effective college instructors possess or demonstrate and to provide a description for each characteristic. To collect data, we first contacted the department chairs in education and psychology. They provided a list of the courses with the instructors' names. Then, they emailed these instructors asking them to help with data collection. All instructors allowed a 30-minute time frame in their classes for students to complete the questionnaire. The first author went to each class to distribute the questionnaire and to answer questions that participants might ask. As the questionnaires were collected, two graduate students inputted data into SPSS and then helped with analyzing the students' responses to the open-ended question.

Data Analysis

A sequential mixed analysis (SMA) (Onwuegbuzie & Teddlie, 2003; Tashakkori & Teddlie, 1998) was conducted to analyze the themes pertaining to students' perceptions of characteristics of effective college teachers. Both qualitative and qualitative data were used in a sequential manner for this mixed analysis. The data source for qualitative analysis was the students' responses for the open-ended question. The data source for quantitative analysis was the themes extracted from the participants' responses via the qualitative analysis (see the following paragraphs for details). The purpose of using a mixed analysis was to obtain stronger evidence than could be obtained via a single qualitative or quantitative analysis (Caracelli & Greene, 1993).

To conduct a qualitative analysis, we adopted an inductive approach to analyze the qualitative data (Onwuegbuzie et al., 2007). In particular, we used Onwuegbuzie et al.'s (2007) 5-step approach. First, all the students' words, phrases, and sentences were read to obtain a feeling for them. Second, these students' responses then were unitized. Third, these units of information then were used as the basis for extracting a list of non-repetitive, non-overlapping significant statements, with each statement given equal weight. Units were eliminated that contained the same or similar statements such that each unit corresponded to a unique instructional characteristic. Fourth, meanings were formulated by elucidating the meaning of each significant statement. Finally, clusters of themes were organized from the aggregate formulated meanings, with each cluster consisting of units that were deemed similar in content. Next, we compared the clusters of

themes to the original descriptions to ensure that all clusters could be traced back to the original descriptions and vice versa. This analysis essentially represented constant comparison analysis (Glaser, 1965; Glaser & Strauss, 1967). Two graduate students and the first author repeated these procedures independently. The following criteria were used to interpret the Kappa coefficient: < .20 = poor agreement, .21-.40 = fair agreement, .41-.60 = moderate agreement, .61-.80 = good agreement, .81-1.00 = very good agreement (Altman, 1991). Any discrepancies were resolved to ensure a 100% inter-rater agreement. In fact, the only discrepancies pertained to the labels given to some of the themes. As a result of these discrepancies, the coders scheduled an additional meeting to agree on more appropriate labels for the themes, which led to the relabeling of some of the themes.

As the themes emerged, we compared these emergent themes to those identified by Onwuegbuzie et al. (2007). The next step was to conduct a quantitative analysis of the themes. First, the themes were converted into quantitative format (i.e., quantitized; Miles & Huberman, 1994; Sandelowski, Voils, & Knafl, 2009; Tashakkori & Teddlie, 1998). That is, if a participant listed a characteristic that was deemed to fall under a certain theme, then a score of 1 would be assigned to the theme for the student response; otherwise a score of 0 was assigned. This dichotomization process yielded what Onwuegbuzie (2003) and Onwuegbuzie and Teddlie (2003) called an *interrespondent matrix* (i.e., participant x theme matrix), which consisted of 1s and 0s, and which formed the basis of subsequent quantitative analyses via SPSS. 17.0. In particular, the interrespondent matrix was used to calculate the frequency of each theme, which was then converted to percentages that provided the prevalence rates. Further, from this interrespondent matrix, an all possible subsets (APS) canonical discriminant analysis was conducted to determine whether the endorsement rate of the themes differed as a function of gender, GPA, major, grade level, and locations. Onwuegbuzie and Daniel (2003) contended that APS discriminant analysis is better than stepwise discriminant analysis because the latter analysis is not guaranteed to find the optimal model.

Results

Frequencies of the Identified Themes

The qualitative analysis (i.e., constant comparison analysis) yielded the following 15 themes: Student-Centered, Expert, Professional, Enthusiast, Transmitter, Connector, Director, Ethical, Responsive, Patriotic, Humorous, Open-Minded, Educational Background, Glamour, and Examination. These themes are displayed in Table 1. All these themes were endorsed by at least 15 participants, representing an endorsement rate (3.5%) that was interpreted as representing a small effect size using Cohen's (1988) non-linear arcsine transformation. Interestingly, nine of these themes were the same themes that were identified by Onwuegbuzie et al. (2007), with the six remaining themes being unique to China's educational contexts.

Table 1 also presents the number and the percentage of the endorsements by all participants. The most frequently occurred themes were Ethical (65.6%) and Expert (52.6%). In contrast, the least frequently occurred themes were Responsive (3.5%), Patriotic (3.5%), and Examination (3.5%). The themes of Professional, Director, and Humorous received modest endorsements (33.7%, 42.8%, and 21.6%, respectively).

The U.S. and China college students' endorsements of the nine themes identified by Onwuegbuzie et al. (2007) were different. The theme of Student-Centered received the highest endorsements by the U.S. students (58.88%), in contrast to the theme of Ethical for the Chinese counterparts (65.6%). The theme of Expert was endorsed the second most by both U.S. and Chinese college students (44.08% vs. 52.6%, respectively). The theme of Professional also received high endorsement from both U.S. and Chinese students (40.79% vs. 33.7%, respectively). The least endorsed theme among U.S. and Chinese students was Responsive (5.04% vs. 3.5%, respectively). It is notable that 23.46% of U.S. participants advocated Transmitter, in contrast to 9.8% in the Chinese sample. The theme of Director also demonstrated a similar discrepancy: 42.8% for the Chinese students and 21.82% for the U.S. students. The U.S. participants' endorsement rates were much higher than were the Chinese participants' rates on Enthusiast, Transmitter, and Connector (29.82% vs. 16%; 23.46% vs. 9.8%; 23.25% vs. 13.3%, respectively).

Frequencies and Inferential Statistics of the Identified Themes

The APS canonical discriminant analysis revealed statistically significant results as a function of gender, major, GPA, and grade. In the following sections, we will present descriptive statistics for each independent variable first, and then we will report inferential statistics.

The frequencies of the endorsements of themes by male and female participants are presented in Table 2. Slightly more female participants endorsed the Student-Centered (25.5%), Transmitter (10.4%), Connecter (14.5%), Director (43.9%), Ethical (67.4%), and Humorous (22.3%) themes than did male participants. However, the discriminant analysis did not reveal any statistically significant differences on these themes. The highest endorsement rate for male

Table 1
Participants' Themes, Student Comments, and Number of Endorsements (N=430)

Theme	Description	Number of endorsements	Percentage of endorsements
Student-Centered	Prioritizes instruction in response to student interests or special needs; adjusts lesson plans immediately if students don't understand	103	24.0%
Expert	Has a deep understanding of the curriculum; demonstrates relevant and current content with key components of curricula	226	52.6%
Professional	Organizes in preparing course	145	33.7%
Enthusiast	Shows passion in teaching; loves the curriculum he/she taught	69	16.0%
Transmitter	Has very good skills on delivering lecture; provides typical examples	42	9.8%
Connector	Creates opportunities for students to have connection with professors within and outside of class	57	13.3%
Director	Actually knows and understands what they are teaching	184	42.8%
Ethical	Treats all students equally within and outside of class	282	65.6%
Responsive	Gives frequent and meaningful feedback to students	15	3.5%
Patriotic	Loves China	15	3.5%
Humorous	Delivers lessons in a funny way; makes class interesting; is able to laugh	93	21.6%
Open-Minded	Asks questions with multiple answers; asks students to have brainstorm	31	7.2%
Educational background	Graduated from famous university, has high degree in the field he/she taught	16	3.6%
Glamour	Charming	54	12.6%
Examination	Gives students a clear clue for the final examination	15	3.5%

Table 2
Participants' Themes in Percentages by Gender, Majors, GPA, Level of Study, and Locations

	Male/Female (%)		Education/Psychology (%)		Good/Fair (%)		Undergraduate/Graduate (%)		City/Rural (%)	
Themes	(n=93/337)		(n = 191/239)		(n = 257/173)		(n = 332/98)		(n = 142/288)	
Student-Centered	20.4	25.5	25.7	23.4	25.7	22.5	21.4*	34.7*	24.6	24.3
Expert	61.3*	50.1*	56.5*	49.4*	53.3	51.4	46.1*	74.5*	55.6	51.0
Professional	46.2*	30.3*	28.8	37.7	29.6	39.9	37.0	22.4	29.6	35.8
Enthusiast	22.6*	14.2*	17.8	14.6	15.6	16.8	14.5	21.4	18.3	14.9
Transmitter	7.5	10.4	11.0	8.8	12.1*	6.4*	8.1*	15.3*	11.3	9.0
Connector	8.6	14.5	13.1	13.4	14.4	11.6	11.4	19.4	14.1	12.8
Director	38.7	43.9	41.4	43.9	43.2	42.2	46.1	31.6	50.7	38.9
Ethical	59.1	67.4	73.8*	59.9*	67.7	62.4	59.9*	84.7*	65.5	65.6
Humorous	19.4	22.3	23.6*	20.1*	17.5	27.7	24.7	11.2	18.3	23.3
Open-Minded	8.6	6.8	9.9*	5.0*	8.9	4.6	6.6	9.2	7.0	7.3
Glamour	18.3*	11.0*	11.5	13.4	15.6*	8.1*	10.8	18.4	14.1	11.8

Note. *represents statistically significant.

was Expert (61.3%), in contrast to Ethical (67.4%) for female. Both Transmitter and Open-Minded received the lowest endorsement rates: 7.5% and 8.6%, respectively, for males and 10.4% and 6.8%, respectively, for females.

Regarding student gender, a statistically significant function was revealed, $X^2(4) = 22.64$, $p < 0.0001$, and accounted for 100% of the between-groups variance (canonical $R = 0.227$, Wilks' lambda = .95). The group centroids were 0.44 for males and -0.12 for females, indicating that this function maximally discriminated males and females. The discriminant function comprised four themes: Expert (standardized coefficient = 0.47), Professional (standardized coefficient = 0.73), Enthusiast (standardized coefficient = 0.52), and Glamour (standardized coefficient = 0.44). The cut-off score for standardized coefficient was 0.3 (Lambert & Durand, 1975). These standardized coefficients indicated that the male participants were more likely to endorse the Expert (61.3% vs. 50.1%), Professional (46.2% vs. 30.3%), Enthusiast (22.6% vs. 14.2%), and Glamour (18.3% vs. 11.0%) themes than were the female participants in this study.

The frequencies of the endorsements of themes by major (i.e., education vs. psychology) are listed in Table 2. In particular, the themes of Ethical and Expert received the highest endorsements by students representing both education (73.8% and 56.5%, respectively) and psychology (59.9% and 49.4%, respectively). The themes of Open-Minded and Transmitter received the lowest endorsements (8.9% and 12.1%, respectively, for education; and 4.6% and 6.4%, respectively, for psychology).

Regarding student major, a statistically significant function was revealed, $X^2(4) = 21.16$, $p < 0.0001$, and accounted for 100% of the between-groups variance (canonical $R = 0.22$, Wilks' lambda = .95). The group centroids were 0.25 for participants majoring in education and -0.20 for participants majoring in psychology, indicating that this function maximally discriminated education and psychology students. The discriminant function comprised four themes: Expert (standardized coefficient = 0.41), Ethical (standardized coefficient = 0.83), Humorous (standardized coefficient = 0.41), and Open-Minded (standardized coefficient = 0.51). These standardized coefficients illustrated that the participants in Education were more likely than were participants in Psychology to endorse the Expert (56.5% vs. 49.4%, respectively), Ethical (73.8% vs. 59.9%, respectively), Humorous (23.6% vs. 20.1%, respectively), and Open-Minded (9.9% vs. 5.0%, respectively) themes.

The frequencies of the endorsements of themes by GPA, namely good (i.e., Mean Range = 80-100) versus Fair (i.e., Mean Range = 60-79) are presented in Table 2. Two themes (Ethical and Expert) received the highest endorsements: 67.7% and 53.3%, respectively, for participants with good GPAs and 62.4% and 51.4%, respectively, for participants with fair GPAs. The themes of Open-Minded and Transmitter received the lowest endorsements: 8.8% and 12.1%, respectively, for students with a good GPA and 4.6% and 6.4%, respectively, for students with a fair GPA.

Regarding student GPA, a statistically significant function was revealed, $X^2(2) = 9.39$, $p < 0.009$, and accounted for 100% of the between-groups variance (canonical $R = 0.15$, Wilks' lambda = .98). The group centroids were 0.12 for participants with a good GPA and -0.18 for participants with a fair GPA, indicating that this function maximally discriminated participants with good GPAs and participants with fair GPAs. The discriminant function contained the following two themes: Transmitter (standardized coefficient = 0.67) and Glamour (standardized coefficient = 0.77). These standardized coefficients suggest that the participants with a good GPA were more likely than were participants with a fair GPA to endorse Transmitter (12.1% vs. 6.4%, respectively) and Glamour (15.6% vs. 8.1%, respectively).

The frequencies of the endorsements of themes by level of study (i.e., undergraduate students vs. graduate students) are presented in Table 2. Both undergraduate and graduate students endorsed the Ethical theme the most (59.9% for undergraduate students and 84.7% for graduate students). Expert and Director were the next most endorsed theme by undergraduate students. In contrast, Expert and Student-Centered were the second and the third most endorsed theme by graduate students. Open-Minded received the least support from both undergraduate students and graduate students.

Comparing undergraduate and graduate students, a statistically significant function was revealed, $X^2(2) = 71.98$, $p < 0.0001$, and accounted for 100% of the between-groups variance (canonical $R = 0.39$, Wilks' lambda = .85). The group centroids were 0.79 for graduate participants and -0.23 for undergraduate participants, indicating that this function maximally discriminated undergraduate and graduate participants. The discriminant function comprised four themes: Transmitter (standardized coefficient = 0.33), Student-Centered (standardized coefficient = 0.44), Expert (standardized coefficient = 0.74), and Ethical (standardized coefficient = 0.70). These standardized coefficients indicated that the graduate participants were more likely than were the undergraduate participants to endorse Transmitter (15.3% vs. 8.1%, respectively), Student-Centered (34.7% vs. 21.4%, respectively), Expert (74.5% vs. 46.1%, respectively), and Ethical (87.4% vs. 59.9%, respectively).

The last two columns in Table 2 show the frequencies of the endorsements of themes by location (i.e., city vs. rural). Two themes (Ethical and Expert)

received the highest endorsements: 65.5% and 55.6%, respectively, for participants from cities, and 65.6% and 51.0%, respectively, for participants from rural areas. The Director and Professional themes were ranked third and fourth: 50.7% and 29.6%, respectively, for city participants, and 38.9% and 35.8%, respectively, for rural participants. Again, the Open-Minded theme received the lowest endorsement: 7.0% for city participants and 7.3% for rural participants. With regard to the participants' locations, a statistically significant function was not revealed via the APS canonical discriminant analysis.

Discussion

The present research study was conducted to understand college students' perceptions of effective college instructors, replicating and extending Onwuegbuzie et al.'s (2007) mixed research study. Similar to Onwuegbuzie et al. (2007), both qualitative and quantitative data were collected and analyzed. In recent years, Onwuegbuzie et al.'s (2007) study has been replicated by several researchers (e.g., Anderson et al., 2011; Slate et al., 2011). In particular, the themes of effective college instructors were identified and compared with the themes identified in Onwuegbuzie et al.'s (2007) study. We answered each of three research questions in turn. Now we will discuss the educational and cultural meanings.

The first research question in this study asked what Chinese college students' perceived characteristics of effective college instructors were. As presented in Table 1, Chinese participants demonstrated a strong interest in two attributes: Ethical and Expert. Also, they reported moderate interest in the following three attributes: Professional, Director, and Humorous. Three themes emerging from this study had relatively low frequencies: Responsive, Patriotic, and Examination. The 11 themes identified in this study were important to China's SET research because some of them had not been identified by previous researchers in China. For instance, Ethical received the highest endorsement by college students in this study. However, most of SET forms in China have not included this important theme. Rather, these SET forms had a dimension of "teaching attitude" to investigate whether the instructors were dedicated to their teaching and whether they served as moral representatives. In our study, the Ethical theme referred to instructors treating all students equally within and outside of the class and caring about their students' behaviors and concerns. The findings from our research study suggested the use of new indicators of effective teaching in SET forms that allow the assessment of ethicalness. In fact, Wang (2008) conducted an empirical study and concluded that students perceived both being a moral representative and treating students equally as important attributes of an excellent instructor. Unlike this study, treating students equally in Wang's (2008) study received modest support with respect to effective teaching. Other researchers (e.g., Wei & Shen, 2002; Wu & Yan, 2009) have not identified Ethical as a theme in their studies. However, the identification of the theme Ethical in this study confirmed Wang's (2008) findings. Meanwhile, it further confirmed the findings in Onwuegbuzie et al.'s (2007) study. These researchers concluded that a clear gap exists between "what the developers of TEFs [SETs] consider to be characteristics of effective instructors and what students deem to be the most important traits" (p. 151).

Themes such as Expert, Professional, and Director identified in this study were consistent with findings from other studies in China (e.g., Wang, 2008; Wei & Shen, 2002; Wu & Yan, 2009), although the terms used in their studies to depict these themes might be slightly different from those that we used in our study. Most SET forms in China have contained items that represent these three themes. The theme of Humorous has confirmed some of the previous findings (e.g., Wu & Yan, 2009). Thus, SET developers might consider including Humorous as one of the important indicators included in SET surveys.

In this study, the second research question asked how these characteristics were different from those in Onwuegbuzie et al.'s (2007) study. Both similarities and differences were found between the Chinese and U.S. college students' endorsement of the nine themes. Specifically, the theme of Responsive received the lowest endorsement in both countries. The theme of Professional received similar endorsement rates by students from the two countries. The theme of Expert had a very high endorsement rate in both countries. The theme of Student-Centered received the highest endorsement from U.S. participants, in contrast to a modest endorsement from the Chinese participants. The theme of Ethical received the highest endorsement in China's sample and a modest endorsement in the U.S. sample. Other themes (e.g., Enthusiast, Transmitter, and Connector) received lower endorsement rates by the China participants than by the U.S. participants. In sum, both the U.S. and China's participants endorsed Expert and Professional as being very important characteristics of effective teaching, and not many participants in both countries mentioned Responsive as being a characteristic of effective college instructors.

The highest endorsement of the two themes (Student-Centered and Ethical) might be caused by the current educational reforms in both China and the United States. That is, beliefs regarding these reforms might have affected college students' thinking in both countries. Since the 1980s, a number of reform documents have been enacted to support student-

centered teaching in the United States. For instance, the National Council of Teachers of Mathematics (NCTM) published a series of standards documents (e.g., NCTM, 1989, 2000, 2006). A common feature of these documents was to eliminate a behaviorist way of teaching mathematics and to call for student-centered teaching in K-12 school classrooms. When college students in this study attended their schools, the student-centered teaching had become a slogan for good teaching in the United States. In China, teaching for all has been emphasized in the current curriculum reform. China's Ministry of Education initiated a series of standards documents in 2001. Stated in these documents was that equality was very important to the K-12 teachers' class (e.g., Chinese Ministry of Education [CMOE], 2001). Also, teachers were expected to be facilitators and organizers in their classrooms. In other words, according to CMOE (2001), teachers should share equal status with their students. Our data supported that the China's K-12 curriculum reform has affected students' thinking: they really cared about the way that instructors treated them.

The finding that more U.S. students endorsed Enthusiast than did their counterparts in China might reflect their different cultural dispositions. On one hand, people in the individualist culture cared about their own personal interests (Oyserman, Coon, & Kemmelmeier, 2002); if the instructors showed their passion for teaching, they demonstrated something consistent with individualist values. As a result, college students in the United States might support this value because they were nurtured by the same culture. On the other hand, a collectivist culture in China might be more in favor of the collective good (Dawson, 1993). This means that the Chinese students did not consider as important the characteristics of loving teaching or paying much more attention to individuals because they really cared about collective goals in this cultural tradition. It is well accepted that people sacrificed their personal interests to do something for a collective goal in Chinese cultural tradition.

The third research question in this study asked the effects of participants' gender, major, originality, and GPA on their perceived characteristics of effective college instructors. Several important findings emerged when addressing this question. First, the theme of Open-minded received the lowest endorsements among the 11 themes. This finding might imply that the examination-driven educational contexts in China shaped Chinese college students' beliefs of effective teaching. These students experienced highly competitive college entrance examinations, and they still needed to pass a number of closed-book examinations for teacher certification and for entering graduate schools. Being open-minded was not effective for preparing students for their examinations. Although college instructors were not responsible for helping students prepare for these kinds of examinations, students might not expect their instructors to teach something irrelevant to the examinations (e.g., open-minded problems) . Second, reflecting the only statistically significant difference with respect to the Open-Minded theme was that students pursuing an education major endorsed this theme more than did students pursuing a psychology major. This was reasonable because students majoring in education received more training with respect to China's current curriculum reform than did students majoring in psychology. The new curriculum reform supported the idea of being open-minded. Third, findings that graduate students were more likely to endorse Student-Centered and Expert than were undergraduate students might reflect the different levels of needs. In China, Student-centered teaching was popular in graduate-level courses, but not in undergraduate-level courses. Undergraduate participants did not experience student-centered teaching; as a result, they might not value student-centeredness as an important feature of effective teaching.

Fourth, although the Ethical and Expert themes received the highest endorsement in this study, there were still some differences when considering demographic variables. For instance, graduate students were more likely to endorse the Expert and Ethical themes than were undergraduate students. Education students were more likely to endorse Ethical and Expert than were psychology students. Male students were more likely to endorse Expert than were female students. Further research is needed to understand the reasons behind these differences.

Fifth, this study revealed no statistically significant differences regarding characteristics of effective college instructors between participants from the city and participants from rural areas in China. This result was inconsistent with Agnew's (2011) finding that students' socioeconomic status affected their perceptions of effective teaching.

This study represented a comparative (i.e., cross-cultural) study of students' perceptions of characteristics of effective college instructors. In particular, some themes identified in this study (e.g., Humorous, Open-Minded, and Glamour) were different from the themes identified in Onwuegbuzie et al.'s (2007) study. This finding suggests that students from different cultures might have different perceptions of effective teaching. These differences might be rooted in the cultural and contextual contexts. At this point, we call for more studies on different cultures to investigate college students' perceptions with respective to effective college instructors. Furthermore, we recommend that researchers determine the commonalities and differences across cultures. Such

investigations will not only provide valuable information for developing a good SET survey, but also contribute to teacher effective research. Although we found valuable results in this study, one must be cautioned that we only selected two majors (education/psychology) in our investigation, which limited the generalizability of our findings. This cannot represent a whole picture of college student perceptions of effective teaching in China. Thus, future studies need to include participants from other majors and different levels of universities in China in order to gain insights of effective college teaching.

References

Agnew, S. (2011). The impact of school socioeconomic status on student-generated teacher rating. *Journal of College Teaching & Learning, 8*, 39-46.

Alhija, F. N. A., & Fresko, B. (2009). Student evaluation of instruction: What can be learned from students' written comments? *Studies in Educational Evaluation 35*, 37-44. doi:10.1016/j.stueduc.2009.01.002

Altman, D. G. (1991). *Practical statistics for medical research*. London, England: Chapman and Hall.

Anderson, M. T., Ingram, J. M., Buford, B. J., Rosli, R., Bledsoe, M. L., & Onwuegbuzie, A. J. (2012). Doctoral students' perceptions of characteristics of effective college teachers: A mixed analysis. *International Journal of Doctoral Studies*, *7*, 279-309. Retrieved from http://ijds.org/Volume7/IJDSv7p279-309Anderson0360.pdf

Cai, M., & Zhang, L. (2005). An investigation on university student involvement in teaching evaluation. *Journal of Higher Education, 26*(3), 69-73.

Caracelli, V. W., & Greene, J. C. (1993). Data analysis strategies for mixed-methods evaluation designs. *Educational Evaluation and Policy Analysis, 15*, 195-207. doi:10.2307/1164421

Chen, G. (2005). Analysis of validity and reliability of SET indicators. *Journal of Higher Education Research, 28*(2), 54-57.

China Ministry of Education. (2001). *Mathematics Curriculum Standards: Grades 1 to 9*. Beijing, China: Beijing Normal University Press.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Crumbley, L., Henry, B. K., & Kratchman, S. H. (2001). Students' perceptions of the evaluation of college teaching. *Quality Assurance in Education, 9*, 197-207.

Dawson, R. (1993). *The world's classics Confucius-The Analects*. Oxford, England: Oxford University Press.

Ding, Y., Wang, Y., & Chen, K. (2011). Analysis of educational goals from 24 worldwide famous universities' SETs. *Fudan Education Forum, 9*(5), 18-22.

Ginns, P., Prosser, M., & Barrie, S. (2007). Students' perceptions of teaching quality in higher education: The perspective of currently enrolled students. *Studies in Higher Education, 32*, 603-615.

Glaser, B. G. (1965). The constant comparative method of qualitative analysis. *Social Problems, 12*, 436-445. doi:10.1525/sp.1965.12.4.03a00070

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research.* Chicago, IL: Aldine.

Harzing, A. W. K. (2009, January). *Publish or perish*. Retrieved from http://www.harzing.com/pop.htm

Kane, R., Sandretto, S., & Heath, C. (2004). An investigation into excellent tertiary teaching: Emphasizing reflective practice. *Higher Education, 47*, 283-310. doi:10.1023/B: HIGH.0000016442.55338.24

Kulik, J. A. (2001). Student ratings: Validity utility, and controversy. *New Directions for Instructional Research, 109*, 9-25. doi:10.1002/ir.1

Lambert, Z. V., & Durand, R. M. (1975). Some precautions in using canonical analysis. *Journal of Market Research, 109*, 9-25. doi:10.2307/3151100

Lou, S., & Cheng, F. (2012). Characteristics of effective college teachers and development of these characteristics. *Heilongjiang Researches on Higher Education, 218*(6), 12-15.

Lou, W., & Wei, Y. (2011). A comparison between US and China's SET activities. *Journal of New Curriculum Studies, 10*, 2-3.

Mao, J., & Qin, H. (2011). Fairly treat and use the survey results from SET forms—A review of literature. *Journal of Modern Education and Administration, 11*, 41-44.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: Sage.

National Council of Teachers of Mathematics. (1989). *Curriculum and evaluation standards for school mathematics*. Reston, VA: The National Council of Teachers of Mathematics.

National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA: The National Council of Teachers of Mathematics.

National Council of Teachers of Mathematics. (2006). *Curriculum focal points*. Reston, VA: The National Council of Teachers of Mathematics.

Okpala, C. O., & Ellis, R. (2005). The perceptions of college students on teacher quality: A focus on teacher qualifications. *Education, 126,* 374–378.

Onwuegbuzie, A. J. (2003). Effect sizes in qualitative research: A prolegomenon. *Quality & Quantity: International Journal of Methodology, 37,* 393–409. doi:10.1023/A:1027379223537

Onwuegbuzie, A. J., & Collins, K. M. T. (2007). A typology of mixed methods sampling designs in social science research. *The Qualitative Report, 12*, 281-316. Retrieved from http://www.nova.edu /ssss/QR/QR12-2/onwuegbuzie2.pdf

Onwuegbuzie, A. J., & Daniel, L. G. (2003, February 12). Typology of analytical and interpretational errors in quantitative and qualitative educational research. *Current Issues in Education*, *6*(2). Retrieved from http://cie.ed.asu.edu/volume6 /number2/

Onwuegbuzie, A. J., Daniel, L. G., & Collins, K. M. T. (2009). A meta-validation model for assessing the score-validity of student teaching evaluations. *Journal of Qualitative and Quantitative Research, 43*, 197-209. doi:10.1007/s11135-007-9112-4

Onwuegbuzie, A. J., & Teddlie, C. (2003). A framework for analyzing data in mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 351-383). Thousand Oaks, CA: Sage.

Onwuegbuzie, A. J., Witcher, A. E., Collins, K. M. T., Filer, J. D., Wiedmaier, C. D., & Moore, C. W. (2007). Students' perceptions of characteristics of effective college teachers: A validity study of a teaching evaluation form using a mixed-methods analysis. *American Educational Research Journal, 44*, 113–160. doi:10.3102/0002831206298169

Oyserman, D., Coon, M. H., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin, 128*(1), 3-72. doi:10.1037//0033-2909.128.1.3

Sandelowski, M., Voils, C. I., & Knafl, G. (2009). On quantitizing. *Journal of Mixed Methods Research, 3*, 208-222. doi:10.1177/1558689809334210

Schulte, D. P., Slate, J. R., & Onwuegbuzie, A. J. (2011). Hispanic college students' views of effective middle school teachers: A multi-stage mixed analysis. *Learning Environments Research*, *14*, 135-153. doi:10.1007/s10984-011-9088-9

Shirbagi, N. (2011). Iranian university teachers' and students' views on effectiveness of students' evaluation of teaching. *Quality of Higher Education, 8*, 118-131.

Slate, J. R., LaPrairie, K., Schulte, D. P., & Onwuegbuzie, A. J. (2011). Views of effective college faculty: A mixed analysis. *Assessment and Evaluation in Higher Education*, *36*, 331-346. doi:10.1080/02602930903428684

Sun, C. (2009). US research-based universities' SET policy and features. *Journal of Heilongjiang Research on Higher Education, 184*(8), 38-40.

Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches*. Applied Social Research Methods Series (Vol. 46). Thousand Oaks, CA: Sage.

Wang, L. (2007). A comparative study of indicators in US and China's SET forms. *Journal of Educational Review, 4*, 130-132.

Wang, L. (2010). Exploring the differences of student evaluation of teachers between US and China. *Journal of Henan Institute of Science and Technology, 4*, 42-44.

Wang, L., & Li, Q. (2011). Problems and solutions for college student evaluating teachers. *Journal of Sichuan College of Education, 27*(7), 16-20.

Wang, Y. (2011). Analysis of index system of the student survey form in an American university: A case study of university of Texas at Austin, *Higher Education Development and Evaluation, 27*(2), 54-59.

Wang, Z. (2008). A study on the evaluation standards for exemplary college teachers. *Journal of Educational Studies, 4*(3), 60-65.

Wei, H. (1993). *The study of reliability and validity on college students' evaluation of effective instructors*. (Unpublished doctoral dissertation). Beijing Normal University, Bejing, China.

Wei, H., & Shen, J. L. (2002). Study on teaching characteristics of effective university teacher. *Journal of Southwest China Normal University (Humanities and Social Sciences Edition), 28*(3), 33-36.

Wei, J. H., & Liu, M. (2013). A review of student evaluating their instructors. *Journal of National Academy of Education Administration, 1*, 63-66.

Wu, G., & Yu, G. L. (2012). A survey of college students evaluating their teachers from different universities. *Journal of Higher Education Management, 6*(1), 80-85.

Wu, Y. R., & Yan, G. F. (2009). Characteristics of effective college teachers' teaching and comparison. *Journal of Educational Research & Experiment, 3*, 56-59.

Zhou, T. (2012). Analysis of indicators in some SET forms from Western countries. *Journal of China University Teaching, 2*, 89-94.

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