Chinese students' perceptions of teacher-student interpersonal behavior

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Chinese EFL Students' Perceptions of Teacher-Student Interpersonal Behaviour and Implications

Abstract

Students' perceptions, for example with respect to teacher behaviours, are one of the most important elements in evaluating the learning environment. Although the literature is replete with studies investigating teacher-student interpersonal behaviour in science classrooms, relatively few studies have been conducted in foreign language classrooms, and in countries like China. This study investigated the perceptions of teacher-student interpersonal behaviour in English as a Foreign Language (EFL) classrooms in China. A total of 823 students from 19 classes taught by 9 teachers were asked to assess their teachers' actual and ideal interpersonal behaviour using the Questionnaire on Teacher Interaction (QTI). Results showed that, on actual interpersonal teacher's behaviours, Chinese students reported higher scores for Leadership, Helpful/Friendly, Understanding, Student Freedom and Strict; and lower scores for Uncertain, Dissatisfied, and Admonishing. On ideal interpersonal teacher's behaviours, Chinese students indicated even higher scores for Leadership, Helpful/Friendly, Understanding, Student Freedom, but lower scores for Dissatisfied, Admonishing, and Strict. Implications will be discussed in the

Key words: Achievement • EFL in China • Questionnaire on Teacher Interaction • Student perception • Teacher-student interpersonal behaviour

Introduction

Learning activities in classrooms always are accompanied by interpersonal interaction (Doyle 1979). Furthermore, "(L)earners' perceptions and interpretations... have been found to have the greatest influence on achievement" (Williams and Burden 1997, p. 98). Many other studies have shown that interpersonal teacher behaviours are strongly related to student achievement (den Brok 2001; den Brok, Levy, Rodriguez & Wubbels 2002; Fisher and Waldrup 1999; Henderson, Fisher & Fraser 2000; Scott 2001; Wubbels 1993, etc). Wubbels (1993) conducted a study in Australia and Netherlands in order to make clear the relationship between interpersonal teacher behaviour and student achievement. He found that students' perceptions of interpersonal teacher behaviour appear to account for a large amount of the differences in achievement between classes of the same ability level. The perceptions accounted for 70% of the variability in student achievement. He also found that interpersonal teacher behaviours were strongly related to student achievement (either positively or negatively). The reciprocal nature of teacher-student communication makes it a powerful influence on the learning environment and, subsequently, on student performance (achievement) (Wubbels, Brekelmans, den Brok, & van Tartwijk 2006). Therefore, in this paper, we chose to explore the influence of the students' perception of teachers' behaviour on students' outcomes.

To assess the impact of learning environment, some educational researchers tried to assess students' perceptions of interpersonal teacher behaviour, an important element of the perceived learning environment (Wubbels and Brekelmans 2005). For instance,

den Brok, Fisher and Koul (2005) collected data of 52 third-year English as a Foreign Language (EFL) classes (1021 students) and the results demonstrated the positive and statistically significant effect of the two interpersonal dimensions (Influence and Proximity) on student subject-related attitudes.

Among all approaches, qualitative, quantitative, or mixed, the use of questionnaires to assess students' perceptions has been the predominant method in learning environments research (Soerjaningsih, Fraser & Aldridge 2001; Wubbels and Brekelmans, 2005). To assess the impact of learning environments, some educational researchers have tried to assess students' perceptions of interpersonal teacher behaviour (e.g., den Brok et al. 2002). The present study investigated students' perceptions of the interpersonal behaviour of their teachers and linked these perceptions to their achievement in English as a foreign language. The study involved the widely used Questionnaire on Teacher Interaction (QTI; Wubbels, Creton & Hooymayers 1985). The adopted QTI consisted of 48 items relating to eight scales which constitute two general interpersonal dimensions: Influence (degree of teacher control); and Proximity (degree of teacher cooperation with students) (den Brok 2001).

The reasons that we investigated EFL students' perceptions of the teacher-student interpersonal relationship in China were threefold. First, although the QTI has been used in many subjects of learning (e.g., Wubbels et al. 1991; Wubbels et al. 1993; den Brok et al. 2005) and in many of China's neighboring countries - for example, studies on this topic have been conducted in Singapore (Fisher et al. 1997, Goh and Fraser 1998), Thailand (Wei and Onswad 2007), in Korea (Kim et al. 2000) and in Brunei (Scott 2001) - there is very limited learning environments research and research on teacher-student interpersonal behaviour in China (Wei et al. 2009). The present study will fill this void by investigating EFL students' perceptions of the teacher-student interpersonal relationship on a large scale (more than 800 students) and provide different insights into the issue in terms of their cultural background.

Second, traditionally, each culture has its accumulated consensus about teacher and teacher-student relationship (Phillips et al. 2002). The cultural setup of China differs from that of some current learning environments studies. Generally, the cultural expectations for teacher-student relationships in China are "well defined, rigidly hierarchical, and authoritarian" (Ho and Ho 2008, p.69). Students are by cultural norms prescribed as respectful to teachers, and teachers are supposed to be stern. Teachers should conceal caring in heart, and be stingy in giving praise for good efforts and harsh in making demands. Chinese culture defines the teacher's role as an authority of knowledge. For generations of Chinese students, the type of teacher defined by Confucius in his *Analects* is highly sought after and respected (Zhou 2010). The cultural norm for teacher-student relationship is *Yan Shi Chu Gao Tu* -- an outstanding apprentice/student is produced by a strict teacher (Leng 2005). The teacher-student relationship is modeled on the father-son relationship (Ho and Ho 2008; Zhou 2010) or master-disciple relationship (Elstein 2009). There is a Chinese saying: "one day as your teacher amounts to a lifetime as your father." Being brought up in such a sociocultural context, in addition to the quest for harmony and filial piety, Chinese students "respect highly those who provide the knowledge and avoid challenging those in authority" (Chan 1999, p. 298). Despite several thousand years of dramatic sociopolitical changes, the Confucian-cultivated

cultural schema for teachers to teach and cultivate remains intact. Such a schema governs every teacher's professional agenda and permeates every aspect of conceptualization of education in Chinese society (Leng 2005). It influences Chinese students' expectations for teachers and greatly shapes their learning styles and strategies. Students are expected to follow their teacher's transmission of knowledge without questioning any matters related to knowledge (Elstein 2009). Because of these cultural influences, we expect that degree of teacher control (i.e. Influence) will be higher and degree of teacher cooperation with students (i.e. Proximity) will be lower than China's neighboring countries. The Chinese rank lower than any other Asian country in the Individualism ranking (Hofstede 2001; Hofstede and Hofstede 2005), which means that Chinese society adheres more to collectivism instead of individualism. All factors mentioned here might play a role in Influence dimension and Proximity dimension.

Thirdly, while most studies on the QTI have focused on science teaching and/or science learning environments, the current study focuses on English as a Foreign Language (EFL). English education is considered as a very important core course for secondary education in China (Silver et al. 2002). This is also true for minority autonomous regions. Students in these regions often speak a language other than Mandarin at home or in other social interactions. At the national level, the Chinese government has identified English as a necessary means for modernizing the country and, thus, as a cornerstone of international competition (Hu 2002). English is usually introduced as a compulsory foreign language in most schools at Grade 3 in China. For almost 30 years, English language education has been considered a subject of paramount importance in China (Jin and Cortazzi 2003). At a more personal (student) level, proficiency in English is seen as a key to promotion to higher professional ranks, to securing a better job, to studying abroad, to both entering and graduating from a university, etc. As a result, there is a massive drive to improve English language teaching in the formal education system, especially at the secondary level (Ministry of Education 2000). Studies such as the current one could help in achieving this aim by providing an image of current education practices and their effects on student achievement in minority autonomous regions. At this moment, this image is still lacking.

However, how secondary EFL teachers are prepared in China (see Silver, Hu & Lino 2002) is contradictory with the communicative language teaching approach (Canale and Swain 1980), a well-received English language teaching approach targeting students' interpersonal communication competence in ways that are socially appropriate in the target language. To reach this language pedagogical goal, it requires English teachers to be highly competent in promoting student English pragmatics via more interpersonal communicative tasks. Since China opened its door to the world in 1980s, China has made great efforts in preparing secondary EFL teachers for quality English language teaching, targeting the promotion and/or provision of communicative English language competencies of students. Researchers (e.g., Hu 2005; Silver et al. 2002), however, found that the secondary EFL teacher preparation curricula in the past decades have little dedication to communicative effectiveness. Neither the teacher trainee knowledge base nor practicum of teacher preparation programs focus on language learner differentiation and learning styles or classroom management. In reality, Chinese EFL teachers tend to focus on lecturing language rules and are regarded as authorities (Fu 1991). They prefer students to be attentive listeners rather than active participants (Huang 2009). The current

study will provide educational information in terms of English teacher classroom behaviours, a void in the learning environment research in EFL context. It is hoped that the students' perceptions found in this study will inform school administrators and teacher educators on the gaps between the actual secondary EFL teacher interpersonal behaviours and student-preferred interpersonal behaviours. Recommendations will be proposed at the end of this paper for secondary EFL teacher preparation or training in China and other parts of the world with similar teacher preparation curricula and Confucian-heritage cultures of learning.

Theoretical framework

The QTI was developed in several studies in the early 1980s and evolved from Leary's Interpersonal Adjective Checklist (ICL). Leary (1957) developed a model that allows the graphic representation of interpersonal behaviours along two dimensions, *influence* and *proximity* that measure specific interpersonal behaviours. Interpersonal communication can be plotted according to how cooperative or dominant the participant is. Leary's Model uses an influence dimension (Dominance [D] – Submission [S]) to measure the degree of dominance or control over the communication process and a proximity dimension (Cooperation [C] – Opposition [O]) to measure the degree of affinity or cooperation felt by those involved in the communication process. Leary's model was later adapted to form a model for interpersonal teacher behaviour (Wubbels et al.1991; Wubbels et al.1993) which uses the same axes of proximity and influence as Leary's model and describes the types of interpersonal behaviours displayed by teachers.

Figure 1. The Model for interpersonal teacher behaviour

Based on Leary's (1957) graphic representation of interpersonal behaviours, the QTI was first developed by Wubbels and his colleagues in 1985 in the authors' native language, Dutch, for use in the teacher education project at the Utrecht University, Netherlands (Wubbels et al. 1985). In 1991, it was translated into English and used in the United States (Wubbels and Levy 1991). The QTI was available in a long (64 items) and a short (48 items) version with very high reliability (den Brok 2001; Wubbels 1993). The interpersonal teacher behaviour that the QTI examined was operationalised in eight scales. They were: Leadership Behaviour, Understanding Behaviour, Uncertain Behaviour, Admonishing Behaviour, Helpful/Friendly Behaviour, Student Responsibility and Freedom Behaviour, Dissatisfied Behaviour and Strict Behaviour. Each scale of teacher behaviour can be placed within the eight sectors (Wubbels et al. 1991; Wubbels 1993): Leadership (DC); Helping/ Friendly (CD); Understanding (CS); Student Responsibility/Freedom (SC); Uncertain (SO); Dissatisfied (OS); Admonishing (OD); and Strict (DO) behaviour.

In another research, Fisher et al. (1997) compared data from Australia and Singapore. They found that teachers in Australia provided more freedom to students than did Singapore teachers. However, teachers in Australia were also found to be more uncertain, more dissatisfied, more admonishing and less strict. Goh and Fraser (1998) examined two aspects of classroom learning environment and their associations with affective and cognitive outcomes among primary mathematics students in Singapore.

They found consistent associations between classroom environment and student outcomes. Gender differences were detected in mathematics achievement, in favor of boys, but girls generally viewed their classroom environments more favorably than boys did. Kim et al. (2000) showed positive relationships between classroom environment and interpersonal teacher behaviour and students' attitudinal outcomes. Boys generally reported more favorable attitudes towards the classroom, teacher behaviour, and science classes. Fisher et al. (1995) found that the dimensions of the QTI were significantly associated with student attitude scores. In particular, students' attitude scores were higher in classrooms in which students perceived greater leadership, helpful/friendly, and understanding behaviours in their teachers.

However, the QTI, which has widely been used in many countries with different language versions, has seldom been used in China. One exception is a study by the authors (2009), which studied the relationship between English as a Foreign Language (EFL) teachers' interpersonal behaviour and students' fluency in English in secondary education in China. A total of 160 students from four classes in a single school in the southwest part of China were asked to assess their teachers' interpersonal behaviour using the QTI. This was the first time that the QTI was successfully translated and used (in EFL classrooms) in China. Cronbach's alpha reliability coefficients for the scales were adequate (from .60 to .98), while confirmatory factor analyses provided support for the theoretical framework behind the questionnaire. Results showed that teacher uncertainty was negatively correlated with student achievement ($p < 0.01$). Furthermore, the degree of teacher cooperation with students was the only significant predictor of student achievement, but its effect disappeared when student background variables were taken into account. Results also demonstrated that Chinese students had higher scores for ideal teacher behaviour than for actual behaviour for Leadership, Understanding, Helpful/Friendly and Student Freedom and lower scores for Admonishing, Dissatisfied and Strict.

The tolerant-authoritative interpersonal profile appeared to be the most common interpersonal style based on Chinese students' perceptions. However, only four classes were involved in Wei et al.'s (2009) study. Hence, little could be said about stability of findings. Also, the effect of the interpersonal dimensions could not be investigated in the most optimal way (e.g. corrected by covariates and through multilevel analyses). In the current study, we have increased the number of students and classes to conduct more state-of-the-art analyses.

Research Questions

The purpose of the present study was to investigate the relationship between interpersonal teacher behaviour and student achievement. More specifically, the following research questions were investigated:

- a. What actual level of teacher influence and proximity do students perceive in China? To what degree do student, teacher and class characteristics affect students' perceptions of teacher influence and proximity? What variance in perceptions exists at the student and class level?
- b. What are the differences between students' ideal and actual perceptions of their teachers' interpersonal behaviour?

- c. Do students' perceptions of teacher influence and proximity predict students' EFL achievement?

Methodology

Sample and Context

The three schools selected to participate in this study were located in Southern China in two minority autonomous regions. The first school had a student population of 2030, the second school 1153 and the third one had 944. The ethnic groups that inhabit these two places include Dai, Hani, and Yao, among others. The Dai ethnic group forms one of the 56 ethnic groups officially recognized by China, and are closely related to the Lao and Thai people who form a majority in Laos and Thailand. The Hani ethnic group also forms one of the 56 officially recognized nationalities of China, and one of the 54 officially recognized ethnic groups of Vietnam. In Laos, the Hani are more commonly known as *Ho*. The Yao ethnic group is also one of the 55 ethnic minority groups officially recognized by China, where they reside in the mountainous terrain of the southwest and south. They also form one of the 54 ethnic groups officially recognized by Vietnam. The basic education system in this region is comprised of pre-school education, elementary school (6 years), junior middle school (3 years) and senior middle school (3 years). In elementary schools, the core curriculums consist of math and Chinese; in middle school stage, Chinese, Math, and English are the core courses along with social sciences and sciences. Children usually enter the elementary school at the age of 7. The school year is typically divided into 2 semesters. The fall semester normally lasts from September to late January and the spring semester lasts from February late February or early March to June. Students have July and August off for summer break and February off for winter break. The whole school year runs for about 9 months.

Secondary school students usually have 10-11 classes (45 minutes each) each week. The middle school education is basically a continuation of the elementary system with English added in to the main curriculum beginning in 7th grade. Though Mandarin is the medium of instruction at school, many students speak an ethnic group language at home.

These schools were selected because interpersonal teacher's behaviours had never been studied in the minority autonomous regions in China and we believed students in those regions would show a different picture for learning environments research in terms of their background education. Further, due to many historical reasons, the economy in these minority autonomous regions is not as developed as other regions in the country.

A sample of 823 Grade 7-10 students were chosen from 19 secondary school classes of three schools in two minority autonomous regions in southern China. Nine teachers taught the secondary school classes, with each teacher responsible for two or three of the tested classes. There were 363 boys (44.1%) and 460 girls (55.9%). Students' ages ranged from 12-17 years old (average 13.65 years old). English is a compulsory course that students must take in each secondary school each year. These students have studied English for about 5-8 years when they participated in the current study. No child with a history of hearing, oral language and cognitive disabilities was selected into the

sample. The 9 teachers (6 females and 3 males) were aged from 26 to 51 years old (average 34 years).

Instrumentation

The Questionnaire on Teacher Interaction (QTI; Wubbels and Levy 1991) was used to assess students' perceptions of their EFL teachers' interpersonal behaviour. The QTI Chinese version was first tested and used in Wei et al. (2009). Wei and colleagues provided evidence of construct validity of the QTI Chinese version by presenting a series of single-level confirmatory factor analyses assuming two dimensions underlying scores on eight scales and a circular structure of scale positions. Although some shifting around the interpersonal circle was observed, the researchers cited adequate fit of a model, taking these assumptions as evidence of structural validity of the scale. Moreover, eta-squared statistics for each scale score indicated that the scales could distinguish between classes/teachers. Finally, they provided evidence of reliability by citing Cronbach's α coefficients at the individual ($n = 160$) and class ($n = 4$) levels, with individual alpha coefficients ranging from .42 to .79 and class-level alphas ranging from .60 to .98.

The same version of the QTI was also used in the present study, with scale scores created by averaging items together and dimension scores created using the factor loadings employed by Wei et al. (2009)¹. Given the multilevel focus of the current study, Cronbach's α coefficients were computed for internal consistency at the individual level, while the lambda coefficient (λ ; see Raudenbush and Bryk 2002) was considered as an assessment of reliability at the teacher level that takes into account inter-item and inter-student variation in responses. Three fully unconditional models were considered to assess reliability at higher levels of analysis. Two separate three-level measurement models (one nesting item responses within students within classes [class model], and one nesting item responses within students within teachers [teacher model]) were conducted in order to determine whether the QTI could reliably measure classroom-level and/or teacher-level variation. Because there were 2 to 3 classrooms per teacher, each of these were considered separately. Lambda coefficients for teacher- or class-level reliability are reported for both of these models. Finally, to examine between-teacher variance partitioned as separate from between-classroom variance, a series of three-level models nesting students within classrooms within teachers were also conducted for both individual scale scores and dimension scores. Intra-class correlation coefficients (ICCs) at each level are reported for each scale.

As can be seen in Table 2, although the reliability of scale scores are mixed at the student level, these instruments generally appear to reliably estimate teacher-level and class-level variation in QTI ratings. With the exception of the Student Freedom scale, lambda reliabilities ranging from .71 to .96 when considering the teacher as the level-3 nesting and from .81 to .94 when considering the classroom as the highest level of nesting. Generally, reliabilities are higher between teachers than between classrooms, an indication that pooling the responses across classrooms results in more reliable estimates

¹ Dimension scores were computed as follows (the numbers before the scale labels represent the factor loadings): Influence = $0.92DC + 0.38CD - 0.38CS - 0.92SC - 0.92SO - 0.38OS + 0.38OD + 0.92DO$; Proximity = $0.38DC + 0.92CD + 0.92CS + 0.38SC - 0.38SO - 0.92OS - 0.92OD - 0.38DO$. These scores range between about -3 and +3.

of how teachers are perceived. An exception to this rule is the DO (strictness) scale, which suggests that teachers may vary in how their strictness is perceived from classroom to classroom. The lower reliability of the Student Freedom scale, even at the teacher level, indicates a need for further improvement on this dimension in the future.

ICCs from a model partitioning variance into student, classroom, and school components indicated that, for most scales, there was a sizeable portion of variance in scale scores (and dimension scale scores) existing between teachers and a smaller portion of variance existing between classrooms. The exceptions to this rule are the SC (student freedom) and DO (strictness) scales, where there was variance between classrooms but not at the teacher level. In other words, students' perceptions of their teacher's strictness and support for student freedom appear to vary from classroom to classroom, and there appears to be little consistency across classrooms in how teachers are seen in these dimensions. ICCs at the teacher level ranged from 0 (for SC and DO) to .19 (for CS and the CO dimension scale), while ICCs at the classroom level ranged from .01 (for OS) to .12 (for DC). Overall, this indicates that the QTI is able to detect differences between classrooms and teachers in perceptions of teachers' interpersonal behaviour, although the extent to which teachers are perceived to behave consistently across classrooms depends on the specific aspect of behaviour being measured. Strikingly, these values were much lower than those in the Netherlands, USA or Australia, but similar to countries like Turkey, Singapore, etc.

Table 1 Estimates of Reliability and Variance Components for each QTI scale

Scale	Cronbach's Alpha	Level-3 HLM Reliability (λ) Coefficients		ICCs for models nesting students in classrooms in teachers	
		Teacher Model	Class Model	Teacher	Class
DC Leadership	0.59	0.96	0.94	0.14	0.12
CD Helpful/friendly	0.69	0.96	0.92	0.17	0.05
CS Understanding	0.74	0.96	0.94	0.19	0.08
SC Student freedom	0.33	0.33	0.43	0.00	0.02
SO Uncertain	0.71	0.94	0.89	0.13	0.02
OS Dissatisfied	0.76	0.92	0.85	0.11	0.01
OD Admonishing	0.62	0.92	0.87	0.10	0.03

DO Strict	0.56	0.71	0.81	0.00	0.09
DS – Influence				0.12	0.07
CO – Proximity				0.19	0.06

Achievement Test

Students' achievement was measured using the final English exam scores that they received. The tests were final exams in Teacher's Book accompanied with the English textbooks for each grade. Reliability scores for those tests are not available, but believed to be high.

Analysis

Multilevel analyses of variance were conducted with HLM 7.0 for Windows to answer the research questions. To address Research Questions a and b, we tested a three-level model of *students* nested in *classes*, which are further nested within *teachers*. The three-level model was necessary because each teacher taught more than one class. To answer the first research question, influence (DS) and proximity (CO) were entered as dependent variables in the multilevel models. First, an *empty model* (with no independent variables) was tested in order to obtain raw percentages of variance in the dimension scores at the student and class level. Next, a *model* with all *background variables* was tested. Hence, variables included were teacher gender, teacher age, student gender, and student age. All predictors were centred on their grand mean, which preserved the meaning of the intercept as the average perceptions of teachers among students in the sample. In a third step, statistically non-significant variables were deleted from the model until a model was achieved with statistically significant variables only. To answer the second research question a multilevel analysis was conducted with achievement as the dependent variable. Several models were subsequently tested, namely an empty model (see above), a model with only DS and CO as explanatory variables (interpersonal model), a model with only background variables included (background model), a model with all variables included (total model) and a model with only the statistically significant variables remaining after deleting variables from the model step by step (significance model). Once again, all predictors were centred on their grand mean, which allows us to interpret the intercept as the average achievement score among students in the sample.

Coefficients for variables and their standard errors were determined, and the t-test for each regression coefficient was reported along with the appropriate degrees of freedom. Due to the small number of teachers in this analysis ($N = 9$), regular standard errors were considered instead of the robust standard errors also reported by in HLM. Also, due to the relatively small number of classes and teachers, we estimated models using restricted, rather than full, maximum likelihood estimation. Although this limited our ability to discuss statistically significant changes in model fit due to the inclusion of fixed predictors, it is a preferred technique for analyses with few level 2 or 3 units. Because information on model improvement was not included, we used the presence of statistically significant predictors in judging whether to move on to an additional step.

Lastly, the percentages of variance at the distinguished levels and the percentages of explained variance by variables were established, and overall reductions in variance were calculated as measures of effect sizes (see Snijders & Bosker, 1999).

To answer the third research question, a three-level analysis of variance was calculated nesting scale scores (actual and ideal) within students within classrooms. A model was tested in which an indicator of actual vs. ideal scores (0 = ideal; 1 = actual) predicted scale scores. The *t* statistic and corresponding *p* value are reported with each comparison, along with scale score means and SDs. In essence, this analysis is akin to a paired-samples *t* test that controls for the random effect of classroom².

Results

The purpose of the present study was to investigate the relationship between interpersonal teacher behaviour and student achievement. In this section, we are going to display the findings according to each topic.

Perceptions of Influence and Proximity and the Effect of Covariates

Table 2 Results of multilevel analyses on DS

	Empty model		Total model	
	Coefficient (standard error)	<i>t</i> (df)	Coefficient (standard error)	<i>t</i> (df)
Mean	0.69 (.05)	14.917 (8)	0.69 (.04)	15.531 (6)
Student age			.02 (.03)	NS
Student gender (1=female)			.02 (.02)	NS
Teacher age			-.01 (.01)	NS
Teacher gender (1=female)			-.03 (.11)	NS
Partitioning of Unexplained Variance:				
Teacher	12.1%		10.8%	
Class	6.6 %		7.1%	
Student	81.2 %		82.0%	

Note: NS=non-significant (at .05).

From Table 2, we can see that the average score for DS is 0.69, which is moderately dominant. The majority of the variance in DS scores is at the student level (81.2%), with the remaining 17.7% of the variance split between the teacher (12.1%) and classroom (6.6%) levels. In other words, there appears to be a considerable level of variance between teachers in their average DS scores, even taking into account some variation in how they are perceived by individual classes. There do not appear to be any statistically significant differences in perceptions of DS by students' gender or age, nor by teachers' gender or age.

² Due to software limitations, we could not estimate four-level models (in which responses were nested within students, who are further nested within classes and teachers). Therefore, we decided to nest within classrooms, rather than teachers, to account the between-classroom variability that we see amongst some QTI scales.

Table 3 Results of multilevel analyses on CO

	Empty model		Total model	
	Coefficient (standard error)	<i>t</i> (df)	Coefficient (standard error)	<i>t</i> (df)
Mean	0.69 (.07)	9.588 (8)	0.67 (.06)	10.585(6)
Student age			.01 (.03)	NS
Student gender (1=female)			-.02 (.03)	NS
Teacher age			-.01 (.008)	NS
Teacher gender (1=female)			-.05 (.16)	NS
Partitioning of Unexplained				
Variance:				
Teacher	19.3%		15.9 %	
Class	6.2 %		6.4 %	
Student	74.5 %		77.8 %	

Note: NS=non-significant (at .05).

From Table 3, we can see that average proximity is 0.69, which is fairly cooperative. As was the case with DS scores, while the majority of the variance exists between students (74.5%), there is a sizeable proportion of between-teacher variance (19.3%) and somewhat less variance amongst the individual classrooms (6.2%). Again, there are no statistically significant differences in perceptions of CO by students' or teachers' genders or ages.

Effects of Influence and Proximity and Covariates on Student Achievement

We conducted a multilevel analysis in which student achievement was the criterion variable and the two dimensions were the predictors.

Table 4 multilevel analysis results for achievement.

	Empty model		Interpersonal model		Background model	
	Coefficient (standard error)	<i>t</i> (df)	Coefficient (standard error)	<i>t</i> (df)	Coefficient (standard error)	<i>t</i> (df)
Mean	70.77 (4.5)	15.64 (8)	70.88 (3.9)	18.16 (6)	70.78 (4.3)	16.54(6)
Influence (DS)			0.15 (4.0)	NS		
Proximity (CO)			13.26 (3.27)	4.01 (793)		
Student age					-1.69 (2.60)	NS
Student gender (1=female)					-2.13 (2.47)	NS
Teacher age					-0.03 (0.53)	NS
Teacher gender (1=female)					5.71 (10.79)	NS
Partitioning of Unexplained Variance:						
Teacher	12.1 %		8.6 %		9.6 %	
Class	0.0 %		0.0 %		0.0 %	
Student	87.8 %		91.1 %		90.4 %	

Note: NS=non-significant (at .05).

	Total model		Significance model	
	Coefficient (standard error)	<i>t</i> (df)	Coefficient (standard error)	<i>t</i> (df)
Mean	70.74 (3.51)	19.41 (6)	70.73 (3.79)	18.65 (8)
Influence (DS)	0.36 (3.98)	NS		
Proximity (CO)	13.34 (3.28)	3.8 (750)	13.29 (3.14)	4.23 (794)
Student age	-2.14 (2.53)	NS		
Student gender (1=female)	-1.84 (2.45)	NS		
Teacher age	0.14 (0.45)	NS		
Teacher gender (1=female)	6.12 (8.90)	NS		
Partitioning of Unexplained Variance:				
Teacher	7.4%		8.6%	
Class	0.1 %		0.2%	
Student	92.4 %		91.1%	

Note: NS=non-significant (at .05).

From Table 4, we can see that almost twelve percent of all differences in achievement are related to differences among teachers, while a much smaller percentage (less than one-tenth of one percent) is related to variations among classrooms taught by the same teacher. The two interpersonal dimensions explain only 1.7% of the variance between students, but explain almost 33% of the variance between classes (roughly 5% of the variance overall). Proximity is statistically significantly and positively related to achievement (with a one SD change in proximity associated with approximately a .8 SD increase in achievement) but influence is not; this holds true both when considered as the only explanatory variables and when controlling for background characteristics.

Compared to the model controlling for background characteristics (none of which were statistically significant predictors of achievement on their own), the dimensions explain an additional 1.8% of the remaining student-level variance and 26.3% of the remaining teacher-level variance, for a total variance explained of approximately 4%.

Differences between ideal and actual perceptions

To answer this question, paired sample t-tests were used to compare students' perceptions of actual teacher interpersonal behaviour and ideal teacher interpersonal behaviour. The results are shown in Table 5. Chinese students had higher scores for ideal than actual teacher behaviour for Leadership, Helpful/friendly, Understanding, and Student Freedom, but lower scores for Uncertain, Dissatisfied, Admonishing, and Strict. All differences between actual and ideal interpersonal teacher behaviour were significant at the 0.001 level except Uncertain behaviour which, which was significant at the .05 level. When looking at overall scales of influence and proximity, Chinese students had higher scores for ideal CO (Proximity) than for actual; the reverse was true for DS (Influence). The discrepancy between actual and ideal DS perceptions was statistically significant at the .05 level, while the discrepancy between ideal and actual CO was statistically significant at the .001 level.

Table 5 Comparison between student perceptions of actual and ideal interpersonal teacher behaviour (paired t-test)

Scale or dimension	Actual		Ideal		t (df)	P
	M	SD	M	SD		
DC Leadership	0.76	0.15	0.85	0.12	-19.94 (803)	<.001
CD Helpful/friendly	0.73	0.18	0.86	0.15	-20.46 (801)	<.001
CS Understanding	0.82	0.16	0.92	0.14	-20.08 (803)	<.001
SC Student Freedom	0.56	0.24	0.69	0.23	-16.56 (801)	<.001
SO Uncertain	0.23	0.19	0.23	0.20	-2.08 (803)	.038
OS Dissatisfied	0.24	0.20	0.19	0.21	10.23 (801)	<.001
OD Admonishing	0.33	0.18	0.27	0.17	10.03 (803)	<.001
DO Strict	0.66	0.16	0.61	0.16	7.46 (801)	<.001
DS Influence	0.59	0.34	0.52	0.36	2.50 (801)	.013
CO Proximity	0.80	0.49	1.18	0.48	-22.02 (801)	<.001

Discussion

The current study was the second one that used the QTI Chinese version in a Chinese context with students assessing their EFL teachers. The sample size is 823 students in 19 classes taught by 9 teachers from 3 schools, which is larger than the 160 students from four classes within one school in the first QTI EFL study in China (see Wei et al. 2009). The QTI Chinese version generally had high class reliability ranging from .68 - .98 indicating that the QTI is highly reliable. The only exception is Student Freedom which is below .70. This is consistent with Wei et al. (2009). Since both studies had the similar results for Student Freedom, we scrutinized the Chinese translation for QTI items related to Student Freedom. After careful examination, we found that more improvement is needed in constructing the QTI Chinese version in the future. For example, the translation of Item 38, “This teacher lets us get away with a lot in class.” The Chinese translation was “这位教师不太处罚我们”. The literary translation for the Chinese language is “The teacher does not punish us very much”. We know “punishment is just one narrow part of the sentence. It is that the teacher would let us go if we do not follow rules. Another statistical result that draws our attention is the identical scores for actual and ideal teacher behaviour for Uncertainty (i.e., there is no difference between actual and ideal behaviour). Possible explanations for this finding might be due to the lack of familiarity that Chinese participants had with this type of study, the (minor) measurement problems reported in the instrumentation section, or because some statement items were missing in the QTI for the Chinese context. It might also be possible that Chinese culture hardly allows for freedom or uncertainty by teachers in the classroom. Variance analyses showed that 9 to 30% of all differences in perceptions between students could be attributed to class membership. This indicated that the Chinese version of the QTI is able to distinguish between classes/teachers.

With respect to the first research question, Chinese students reported relatively high scores for actual teacher behaviours in Leadership, Helpful/Friendly, Understanding, Student Freedom and Strict; and relatively low scores for Uncertain, Dissatisfied, and Admonishing.

These findings suggest that Chinese students preferred a more positive EFL classroom environment. This is consistent with findings from Wei et al. (2009) and Wubbels et al. (2006). The analyses also indicate that, in the Chinese context, students agreed that an English teacher should be a strong leader, understanding and helpful/friendly, and should give some freedom to students. At the same time, Chinese students preferred that their teachers should be strict. They also perceived that the teachers should not be uncertain, admonishing, and dissatisfied. This is in accordance with findings on teacher–student interpersonal behaviour in other countries (e.g. Wubbels 1993).

The mean Influence (DS) score of 0.59 (SD 0.03) was larger than the mean in Singapore of 0.56 (SD 0.22) or the Australian mean of 0.55 (SD 0.31), but smaller than the Chinese mean reported by Wei et al. (2009) as 0.67 (SD 0.32). This suggests that the degree of dominance or control of the teachers over the communication process in China was higher than in Singapore and Australia. In addition, this study’s Proximity (CO) mean of 0.78 (SD 0.06) was smaller than that of all three other countries (Singapore, Brunei and Australia), which indicates that the degree of cooperation of teachers in China was lower than that in the other countries. This study’s DS and CO means are both higher

than those of India (den Brok et al. 2005), with values of 0.51 (SD 0.16) and 0.55 (SD 0.25). Compared to India, English teachers in China were both more dominant in their communication process and more cooperative with their students. The possible explanation is that English teachers in China were not usually challenged by students and that had a lot to do with Confucian teacher-student relationship that features preaching and teaching of knowledge. Also, they were more cooperative when working with students.

For the second research question, we conducted multilevel analysis in which student achievement was the criterion variable and the two dimensions (DS Influence and CO Proximity) and other covariates were the predictors. The analysis showed a statistically significant positive association between CO Proximity and student achievement ($p < .01$). That indicates that CO Proximity can predict Chinese students' EFL scores, an echoing result with that of den Brok et al. (2005): The stronger the perception of Proximity, the greater the motivation of students in learning. In addition, the statistical results demonstrated that the differences among students' perceived teacher behaviours, rather than the teachers' genders and ages, related to differences students' EFL achievements across classes taught by different teachers. To contrast, teachers' behaviours did not relate to differences in average student achievement levels amongst classes taught by the same teacher. The positive association between Proximity (CO) and student achievement as well as relationship between teacher difference and student achievement revealed that interpersonal teacher-student relationships have a relation to EFL achievement in China. To contrast, DS Influence was not a significant predictor of student achievement. From a methodological perspective, it could be that the somewhat smaller amount of variance between teachers in DS Influence compared to CO Proximity ($ICC = .12$ versus $.17$) makes it difficult to detect a unique effect for Influence over Proximity.

With respect to the third research question, Chinese students reported higher scores for ideal teacher behaviour than for actual behaviour for Leadership, Helpful/friendly, Understanding, Student Freedom, lower scores for ideal teacher behaviour than for actual behaviour for Dissatisfied, Admonishing, and Strict. Uncertain is equal for ideal and actual teacher behaviour. The differences between actual and ideal teacher's behaviour are all statistically significant at the $p < .01$ level except for Uncertain. This suggests that Chinese students believe that their teachers still have more room to improve in terms of demonstrating leadership, helpfulness/friendliness, giving students responsibility and freedom in learning; and being less dissatisfied and strict with students, less admonishing. These findings align with Wei et al. (2009), Wubbels (1993), and Wubbels et al. (2006). In addition, genders or ages of students don't relate to students' perceptions of their EFL teachers, nor do the teachers' genders and ages. The lack of difference in the scores of teachers being strict for both actual and ideal teacher behaviours indicates that Chinese students preferred their EFL teachers to be strict, be in reality or in ideal.

Conclusion

In this study, we used a larger sample size from more classrooms and teachers in more schools than did Wei et al (2009) to conduct a QTI research in China's EFL classrooms.

This enabled us to interpret the relationship between Chinese students' perceptions about their EFL interpersonal teacher behaviours and English achievements with more stable findings. They go in line with QTI research in China (e.g., Wei et al. 2009) and in other countries with other subjects (e.g., Wubbels 1993; Wubbels et al. 2006). The results of current study may be generalizable for EFL classrooms in China. That all eight dimensions of teacher interpersonal behaviours were found to relate to student's English achievement in China implies that teachers, school administrators, and teacher educators all have room to improve their teacher/teaching qualities. These implications also apply to countries who share similar culture of learning/teaching with China.

First of all, teachers could use the findings of this study to improve their interpersonal behaviour based on students' perceptions; for example, by comparing their own classroom outcomes to the averages reported in the present study, by comparing their own perceptions to those of their students, or by comparing differences between perceptions of preferred and actual behaviours. Secondly, other researchers (e.g., Fraser and Fisher 1986; Thorp et al. 1994; Yarrow et al. 1997) have reported how teachers have used assessments of their students' perceptions of their actual and preferred classroom environment as a basis for identification and discussion of actual-preferred discrepancies, followed by a systematic attempt to improve classrooms. Applying this specifically to the current study in China's EFL classrooms, since Chinese students reported higher scores for ideal teacher behaviour for Leadership, Helpful/Friendly, Understanding, and Student Freedom, teachers should demonstrate more enthusiasm in the subject they teach, be more patient with students, more cognizant with everything related to students, and offer more pleasant classroom environments. Meanwhile, students preferred their English teachers to be less admonishing, less dissatisfied, and less strict. This means the culture of learning in China has changed. Students are unlike previous generations who enjoyed the teacher-centered, teacher-controlled classrooms. It is time for Chinese EFL teachers to embrace more communicative-based English pedagogy (e.g., Hu 2002; Hu 2005), more dialogic approaches, and more student-friendly classroom environments for better student achievement. Thirdly, one of the factors that demotivates English language students is individual teacher behaviour (e.g., one-way communication, satisfaction towards students) in classroom (Kikuchi 2009). Higher scores in both ideal Influence (DS) and Proximity (CO) in student perceptions of interpersonal teacher behaviours in current study are suggestive to school administrators and EFL teacher trainers in China or other countries with similar cultural context in EFL teaching and learning. It is important for EFL teacher educators and school administrators in China and countries embracing similar EFL teacher education curricula to include classroom management or strategies enhancing interpersonal teacher-student relationships courses into their EFL teacher preparation curriculum or teacher professional development plans. According to the country report for secondary English education conducted by Silver et al. (2002), the majority of secondary teacher education courses in China focused on linguistics and literature with only one teaching methodology course. In current study, we found huge discrepancies between students' ideal teacher behaviours and actual teacher behaviours, as well as positive associations between student's perceptions of their teachers' behaviours and teacher control in relation to their English learning outcomes. Such discrepancies and interrelated cause-effects of interpersonal teacher-student behaviour to student learning outcomes call for pre-service and/or in-service EFL teacher training to

enhance interpersonal teacher-student relationships and to provide for more democratic classroom climates.

When planning EFL teacher training programs or professional development, trainers or organizers should include reading materials and strategies for EFL teacher trainees to enhance their teacher-student interpersonal relationships and to facilitate discussions for providing more student friendly learning environments. By raising the awareness of knowing EFL students' expectations for ideal teacher behaviours, EFL teacher trainees should understand that mismatch of students' preferred teacher behaviour and actual teacher behaviour will discourage students to learn, or worse, negatively affect students' English achievement.

There are inevitably some limitations of the present study like all others. The QTI Chinese version (48 items) still has room for improvement. Student freedom has an alpha coefficient below .70, suggesting more improvement is needed in the future research. Also, when examining the relation with students' outcomes, the current study did not include students' prior achievement (e.g., including the whole semester's summative assessment scores). One considerations for further research could be an open ended question or a follow up interview to students regarding the items on the Uncertain dimension. It would be interesting to further explore why there was no difference in Chinese EFL students' perceptions for actual and ideal teacher behaviour for Uncertain. A second consideration could be a parallel EFL teacher perception questionnaire to compare the perceived actual and ideal teacher-student interpersonal behaviours of both teachers and students, as well as whether the matched or mismatched perceptions demonstrate a relationship to students' English achievement. Third, we could improve our sampling method to select samples more scientifically. Fourth, studies in QTI are mainly quantitatively, we may be able to design a qualitative study in QTI.

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