

How class size reduction mediates secondary students' learning: hearing the pupil voice

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Abstract This paper discusses the question of why and how class size can make a difference to teaching and learning from the students' perspective. Secondary school contexts and, in particular, the students' own voice on the issue of class size represent an under-researched area for class size studies. This paper draws on data from three case studies that examined secondary school English classes in Hong Kong (one large and one reduced-size class in each case). Both classes were of the same grade and taught by the same teacher. This paper positions the case studies within a broader context that focuses on class size and the processes that appear to be mediated by class size reduction. It also draws on interview data and findings from classroom observations. Notably, these data all suggest that students perceive smaller classes as being able to foster a greater sense of belonging and cohesion in their classroom, closer relations with teachers and enhanced participation levels in classroom activities. Crucially, findings also suggest that smaller classes can help to overcome some key cultural obstacles to learning such as language learning anxiety and the issue of 'face'. Some implications for teachers, trainers and researchers are also presented.

Keywords Class size · Secondary school · Student voice · Classroom communities · Classroom interaction

Introduction

Class size is an issue being keenly debated in Hong Kong and should be set against a backdrop of an ongoing debate between the teachers' union and the government on whether the reduction in large class sizes (usually 40 students or more) might lead to better student learning in secondary schools. The reference to 'students' learning' in the title of this paper does not include student learning outcomes, focusing instead on students' learning processes that encompass students' participation in classroom discourse, as well as the social, cultural and psychological dimensions of such participation. This exploratory study positions Hong Kong as the local lens through which to investigate an under-researched question in education about how class size reduction mediates teaching and learning from the perspective of the students, all of whom are Chinese and are learning English as a second language.

Background

This paper taps into a powerful student voice, a source of insight which has often been overlooked in other studies of class size. There is an understandable reason for this gap in the research on class size with the vast majority of research on class size being conducted in western cultures and in primary and early childhood contexts. Here, students may not have been in a position to articulate views and experiences on learning in reduced-size classes (see, for example, Finn and Achilles 1990; Blatchford 2003; Galton and Pell 2010). However, in studies not related to class size, the opinions of students have been shown to be extremely constructive, particularly in enabling schools and teachers to adopt changes in teaching and learning (see McIntyre et al. 2005). This paper rests on the standpoint

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that any study of the classroom must consider the student voice as a crucial source of data and insight. A focus on secondary schooling is justified, too, in that it is in secondary schools where students undertake more complex intellectual tasks and, therefore, require more support and scaffolding from their teachers. These support strategies are likely to be more susceptible to class size variation (Pedder 2006). Nevertheless, there is a paucity of research data on the issue of class size reduction in secondary schools, with two exceptions being studies conducted in the United Kingdom (Pedder 2001; Blatchford et al. 2011). While published research may be limited, the importance of focusing on learners in secondary schools has not gone unnoticed. Finn et al. (2003), for example, suggest that focusing on older students must be a priority because the classroom dynamics presented in their review are just as relevant at senior levels as they are at lower levels of schooling. The same researchers also note that studies of students' behaviour in small classes have nearly always drawn on teacher reports for data (2003, p. 340). This study, then, aims at eliciting the student voice believing it to be a legitimate object of enquiry that has received scant attention from researchers in the Asia-Pacific region and beyond.

It would surely be a failing to overlook the influence of culture when examining the context of learning and this study aims to build upon other work on class size carried out in an Asian context (Din 1998; Jin and Cortazzi 1998; Cortazzi and Jin 2001). In doing so, it hopes to contribute to a better understanding of how class size reduction might influence particular cultural aspects such as language learning anxiety and students' learning styles. Class size studies carried out in western contexts have pointed to smaller classes facilitating greater participation from students. Finn et al. (2003) advocate the utilization of psychological and social theory to explain why smaller classes appear to have a positive influence on students' social and academic behaviour. Their review of class size research suggests that class size might also influence the teacher's sense of community with the class, that teachers 'know' their students better and are able to interact more with their pupils at an academic and social level. They employ the term 'group cohesiveness' to explain the fact that students in smaller classes tend to support one another more and encourage each other to engage in learning activities. In a reduced-size class, individual members may not be able to 'hide' easily and are, therefore, more likely to participate in classroom discourse and activities. The same research also points to two principles, 'visibility of the individual' and 'sense of belonging' as important components of any explanation of learner behaviour in large and reduced-size classes. The latter principle, 'sense of belonging', provides the conceptual framework for this

paper. It should also be noted that this principle has received the least attention from researchers (Finn et al. 2003, p. 352).

It is timely to examine the issue of class size in Hong Kong and the Pacific Rim as this context represents a very different cultural backdrop to the western contexts where much of the research on class size has been conducted. For example, Hong Kong classrooms are often characterized by whole-class instruction where teachers have been typically stereotyped as figures of authority and respect (Littlewood 1999). Other cultural aspects such as self-esteem, confidence, 'face', and what research has called the 'collectivist' culture aspects have also been documented as characteristics of Asian classrooms, and Chinese learning contexts in particular (see, for example, Triandis 1995 and Jin and Cortazzi 1998). The issue of language learning anxiety in Asian classrooms is well established, particularly in the second language context (see Horwitz et al. 1991). Tsui's (1996) seminal work in Hong Kong describes how Chinese students are not always willing to answer questions in class even when they know their answer is correct. Recently, there has been renewed interest in how language learning anxiety in Confucian Heritage Cultures (CHCs) impacts on English language learners (see Xie 2010; Harumi 2011). An examination of whether students perceive the impact of class size on this important psychological factor in language learning represents a meaningful research goal.

To sum up, this paper does not seek to intervene in the long-standing debate on whether the academic benefits of small class size are cost effective or not, noting the work of others in this regard (Hanushek 1998; Hattie 2005). Instead, it sets out to illuminate an area of the class size issue where there are limited research data both regionally and globally, namely how class size reduction impacts upon secondary school students who have been described as the 'first level consumers of educational services' (Erickson and Shultz 1991, p. 481). The significance of the study is twofold. Firstly, class size research has largely overlooked the student voice, certainly when compared with the more frequent reliance on teachers' reports. Secondly, the students' perspectives might lead to a better understanding of the significance of class size reductions in relation to the social and cultural aspects of the classroom where, arguably, the cultural background of learners is an important mediating factor. Two research questions are put forward:

1. How do students perceive the differences, if any, between teaching and learning in a large class with teaching and learning in a reduced-size class?
2. How do these differences, if any, influence cultural and social aspects of learning?

Contextual background

This study is set in Hong Kong, a context influenced by Confucian Heritage Culture (CHC) orientations according to Biggs (1996). CHCs tend to have large classes and secondary classes in Hong Kong often contain 40 students or more. Comparisons between class sizes in Asia and international research in this field reveal just how unique the local region is in terms of typical class sizes; Taiwan (30–35 in ‘small classes’) and Shanghai (typically 30 in ‘small classes’) are just two examples. In Hong Kong, too, a class size of between 25 and 30 would be regarded as ‘small’ by teachers and students. To put those numbers into perspective, the famous Student Teacher Achievement Ratio (STAR) project that has contributed so much to the small class debate included ‘regular’ class sizes of 22–25 and ‘small’ class sizes of 13–17 in its examination of class size on student achievement in Tennessee, USA (admittedly, in an early childhood context). So, while findings from international studies on class size are informative and helpful, they may not necessarily be generalizable to other regions, particularly Asia, where class sizes can be much larger. One of the most problematic issues at the start of this study was determining how best to define ‘small’ in a Hong Kong school context. This explains why I chose to focus on classes where the regular class size had been greatly reduced rather than trying to identify an optimal ‘small’ class size. In Hong Kong, many local secondary schools have made attempts to split classes or reduce numbers in highly valued subjects like English language because, very often, school managers believe that a reduced-size class better facilitates language learning opportunities for their pupils. This has been increasingly noted on school websites and publicity materials used in the promotion of local secondary schools. Table 1 highlights the class sizes in the secondary schools that were part of this study.

Methodology

The focal point of this study was the environment of the classroom in its entirety, and so case study research was used as the method of enquiry. I was able to identify cases that fit into the research design of this study through

extensive contact with the local school community. I was able to adopt a non-experimental design believing that this was the best way to capture the reality of the classroom context. However, there were some key methodological considerations in the light of previous research studies that have suggested that differences in classroom interaction and pedagogical strategies are not necessarily mediated by class size. Instead, other teacher factors such as age, gender, experience, attitude and decision making might play a significant role. This problematic teacher factor variable was addressed by comparing large and reduced-size classes taught by the *same* teacher, a unique research design in the literature on class size. That is, each teacher was responsible for teaching one large class and one reduced-size class of the same grade. Three local secondary school English teachers volunteered to have their lessons observed and video recorded which ensured a naturalistic setting for the study. In each school, one teacher was responsible for teaching two English language classes of the same grade, one of which was a large class and one of which was a reduced-size class. In each case school, these teachers had been given the two classes largely because of workload issues in their respective schools. The observed classes formed part of the teacher’s existing teaching schedule, and participants were not asked or required to make any amendments to their lessons, subject content or teaching methods. The participating teachers in the study were all female reflecting the gender bias of the teaching profession in Hong Kong. Each teacher had between 5 and 13 years experience of teaching at secondary level in Hong Kong, with 5 years being a commonly accepted criterion in the selection of experienced teachers (Tsui 2003). All possessed a postgraduate diploma or certificate in education as well as a Masters degree in Education. The teachers had not previously taught two classes in the same year level.

Another variable where it was necessary to exert some control was the academic ability of the students. For the research data to be valid and reliable, the two classes needed to be of comparable ability, and this was verified by consulting examination results from respective classes and speaking with school administrators. All schools were co-educational, and each school represented a different academic level which ensured some control over the academic ability factor. In Hong Kong, schools are divided into three bands (band one to band three) with band one

Table 1 Class sizes of secondary schools used in this study

| Secondary school | Form level (grade) | Large class size | Reduced class size |
|--------------------|--------------------|------------------|--------------------|
| Secondary school 1 | S.3 (grade 9) | $n = 41$ | $n = 25$ |
| Secondary school 2 | S.4 (grade 10) | $n = 37$ | $n = 27$ |
| Secondary school 3 | S.2 (grade 8) | $n = 39$ | $n = 21$ |

indicating a higher level of academic ability among students and band three the lowest. There was no random control over the choice of student subjects; this was guided by the school's arrangement of having the same teacher teach both classes. In each institution, the selection of students in each class was done randomly, meaning there was no streaming of particular students or groups. In one school, for example, the reason for having a reduced-size class was to measure the effectiveness of small class teaching with a view to expanding the initiative to other grades. In the other two schools, the reduced-size classes were seen as a potential solution to individual teachers' workload and timetabling issues. None of the students had experienced learning in reduced-size classes prior to this study. Each case study was conducted in the second semester of the school timetable because it was believed that relationships in class (between students and teachers) would have been well established by that time. The data set for this paper includes semi-structured interviews with 191 students and 48 lesson observations conducted in 3 different secondary schools.

The adoption of a multiple case study is to determine whether findings can be found across more than one case, and this replication strategy (Yin 1991) then helps to strengthen our understanding of individual cases. By replicating the same research design in multiple school settings, it is hoped that findings will offer insights into our understanding of how class size reduction might mediate learning in secondary schools. It should be pointed out that this study does not seek to compare individual students or teachers across the case studies; the only comparison is of the large and reduced-size class in each case.

Data collection

Student interviews

Multiple interviews were conducted with students in large and reduced-size classes to elicit qualitative data on how they perceived their learning and teaching in their respective cohorts. Group and individual interviews were conducted with a total of 191 students during lunchtime and after school. A group of around six or seven has been seen as the optimum size (Lewis 1992), and each group interview had a maximum of 5 respondents. Questions stemmed from previous studies on class size and classroom processes identified in small classes: important episodes and incidents from observed lessons; students' own views on what they liked and disliked about learning English in their respective classes, their views on learning and teaching in large and reduced-size classes, their views on peer relationships in their respective classes; their participation in class and

reasons for engagement in their respective class (see 'Appendix 1' for the questions posed to students). Interview data collection and analysis followed a grounded theory approach that facilitated the emergence of patterns. Interview transcripts, daily field notes and salient themes underwent an iterative process of data reduction and verification (Miles and Huberman 1994). I analysed interview data using three stages of coding: open, axial and selective coding (Strauss and Corbin 1998). There is no attempt here to claim that these perspectives are the only possible interpretation of interviewee responses. However, respondent validity was ensured to a large extent with students and teachers reading and approving the interview transcriptions.

Classroom observations

Observation of student behaviour in the English language classroom generated data on classroom events and discourse in both large and reduced-size classes. Classroom discourse has been seen as a central component in the learning process and an integral part of the language acquisition process (see Johnson 1995; Ellis 1998). Research has pointed to smaller classes being more likely to foster increased interaction among students and their teachers (Blatchford et al. 2009), and so data on classroom discourse from large and small classes serve as a helpful indicator of possible differences between the teaching and learning in the respective classes. Each class was observed over one full cycle of teaching, typically around 8 lessons for each class (48 lessons in total). Every lesson was video recorded and subsequently transcribed. Classroom transcriptions were carefully analysed, and focus was placed on the interaction patterns between class and teacher, as well as student and student. This was to determine whether there were any differences between the reduced-size and large classes in this crucial area of language development. I primarily focused on the exchanges and moves between participants (see Sinclair and Coulthard 1975).

Research on class size (Cooper 1989) suggests that students in smaller classes may be more willing to participate by asking questions and engaging with the teacher. Such engagement may include students asking their teachers for help and clarification during lessons, either verbally or by non-verbal means (such as raising their hands in class). Students in smaller classes may also sense a lighter learning atmosphere because of stronger cohesion among classmates (Finn and Wang 2002), and it is possible that this may translate into more spontaneous communication acts, including jokes and even playful challenges to their teacher. At the same time, learner anxiety has been seen as a very real barrier to these types of communication in the Asian context. Hence, by placing emphasis on interaction patterns initiated by learners towards their

teacher(s), I hoped to obtain some insights into students' confidence and willingness to participate in the learning process. I used field notes to record the number of times students initiated interaction with their teacher by asking questions. I also recorded the times when students responded to teachers' questions without being nominated. The occasions on which students challenged their teacher verbally were also recorded, and finally, the number of times students engaged in humorous exchanges with their teacher was also noted. I subsequently verified these figures by reviewing lesson transcriptions after the observations with each episode being analysed qualitatively. An overview of quantitative results from the three schools is presented in Table 2.

Findings: student interviews and lesson observations

The following section sets out the salient findings from the student interviews in the three case study schools. To recapitulate, the research questions underpinning this study aimed at eliciting the student voice on teaching and learning in large and reduced-size classes as well as examining them from a social and cultural perspective.

Interview data from semi-structured interviews helped to inform the earlier questions. Students in smaller cohorts cited better classroom management, more task time, increased opportunities to ask questions, lessened levels of anxiety, better relations with their peers, closer relations with their teachers and a happier and more engaging learning environment. Responses from students in reduced-size classes were consistently positive and will be presented in the following section according to the main themes that emerged from the coding of interview transcripts: group cohesiveness which included relationships

with teachers and peer support. These themes are presented under an overarching concept of 'students' sense of belonging'. There are other perspectives of learning in this study which merit discussion, but due to a lack of space in this paper, I choose to focus on language learning anxiety, which was the most common theme identified across the case study schools. Interview excerpts are verbatim as students volunteered to use English (their L2) in interviews with me.

Students' sense of belonging

Group cohesiveness

In each case study, students reported that the smaller classes were 'more harmonious', had 'more spirit' and were more 'united' than the large classes. This was a prevalent theme, strengthened by the fact that all the students had previously studied in large classes and were able to articulate their perceptions on the differences between the two, as the following extracts demonstrate,

I have not had class spirit like this before. I have many friends in the class and not like before. In my other classes I knew some people but here I talk to all my friends. We are a group. (Small class student in School 1)

A smaller class means that we can be more together and more of a class. We help each other because we are in this class. We know others better...so we help. The class size makes us have a closer relationship. (Small class student in School 1)

These responses were illuminated further when the same students shared their reasons *why* the smaller class was

Table 2 Classroom interaction modes (class/student-teacher)

| Interaction modes | School and class | | | | | |
|---|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | School 1 | | School 2 | | School 3 | |
| | Large class (n = 41) | Small class (n = 25) | Large class (n = 37) | Small class (n = 27) | Large class (n = 39) | Small class (n = 21) |
| Teacher-elicited responses (when students answer questions after being nominated directly) | 31 | 23 | 32 | 17 | 38 | 31 |
| Student-initiated responses (when students volunteered an answer without any nomination from the teacher) | 12 | 37 | 23 | 32 | 16 | 41 |
| Students initiate interaction with their teacher (when students ask questions or seek clarification) | 8 | 39 | 16 | 52 | 14 | 56 |
| Student challenges teacher (when students make a spontaneous comment in response to the teacher's input) | 1 | 7 | 2 | 9 | 4 | 12 |
| Student uses humour with teacher (when students joke with the teacher) | 4 | 21 | 3 | 8 | 5 | 11 |

different to the large class that they had been part of in previous years,

In a large class we are not together. You know, there are different groups of people and friends. If we do not belong to those groups then we do not have anyone to talk to or get help from. I never felt close to my classmates before but this year I feel part of the class. (Small class student in School 2)

When invited to explain what impact these ‘different groups’ have on learning in large classes, one student from a smaller class offered this response,

In the big class you will find many groups...own circles...big circles...very separate. The problem of many little circles is very serious...in this class just one circle...Circles are better students...their results are better and they will become a circle but they won't teach other students...afraid to help because others will steal their knowledge...they are selfish and won't help others... (Small class student in School 2)

Another interviewee in this smaller class made the link between class size, the ‘circles’ in the larger classes and their own support system in the small context,

Maybe some students need help more than me (in large classes) so some teachers just take care of them...then the teacher cannot answer my question but in this class it is quick and the teacher can help quickly...we get support from the teacher and from each other...in small class we can encourage each other...in big classes the students don't work together...again they are little circles of different students... (Small class student in school 2)

A student from the corresponding large class in this case school expressed agreement,

We have a group of friends and we just talk in that group. Others have another group of friends...so many small groups in the class. We are not like a class but many different groups. (Large class student in School 2)

The strong sense of cohesion between students in the smaller classes was also manifested in the way students provided support to one another and in a number of different ways. In case school 2, for example, students in the smaller class ($n = 27$) could be seen working together at lunchtime and during recess. Students sat and discussed work, and upon further examination, it could be seen that students were relying on each other for help with academic subjects. Students in this class acknowledged one of their peers as being an ‘expert’ in the subject of Principles of Accounts, with one crediting this boy for helping her to pass a recent exam in the subject,

We always ask him for help...last year I didn't pass (the exam in this subject) but now I pass because of him... (Small class student in School 2)

When interviewed, the boy who was providing help to his peers accepted that he gave ‘uncountable’ help to his class, but that the support was reciprocal in that his classmates also helped him with Chinese language, a subject which he regarded as one of his weakest. This boy explained why he was willing to help his classmates by paraphrasing a Confucian proverb,

When a group of people is working, someone can be the teacher in the group and the whole group will be improved (Small class student in School 2)

In the smaller class of case school 3 ($n = 21$), students were seen to proofread each other's work during lessons and seek feedback from classmates on tasks during lessons. During interviews, students openly acknowledged that they liked to share their work with one another in class. In this same class, the students had formed a mini-class library consisting of short stories and poems that students had collected after receiving some lessons on literary texts. One student looked after the library of materials, but all the students reported that they had contributed materials to this library for the benefit of their peers.

Peer support was very different in the large class of case school 3 ($n = 39$) with students clearly preferring to work independently or within their own peer groups. That is not to say that the students did not work together, but as the following interview extract shows there appeared to be a more fragmented support system with students relying more on a smaller circle of friends,

I do not speak with some of my classmates. I will not share my work with them because I do not know them. I will only share with my friends. (Large class student in School 3)

Some students in the large class openly stated that they preferred working on their own and did not like group work or collaborative tasks set by the teacher,

I don't like working with others. Not because of them but I want to do my own work and see if I can do it. Group work wastes my time. (Large class student in School 3)

I like working with classmates but not in class. It wastes time. Why can't we work on our own...it is better that way. (Large class student in School 3)

Students in the reduced-size classes were seen to be more engaged socially, and this engagement appeared to apply to the teacher as well. In observations of the smaller classes, students were seen to be closer to their teacher,

particularly in the way they interacted with them during lessons. There were more examples of humour from students in the small classes and many more instances of students asking their teachers for help during lessons (see, also, 'Appendix 2'). Students in the smaller classes seemed to recognize that a closer relationship between teacher and class was beneficial to their learning,

She knows us. She talks to us and knows us. I like that. She joins the jokes sometimes. She understands us. (Small class student in School 3)

If we need help we can ask her immediately and she will help us. She knows us better and that can help us improve. (Small class student in School 2)

In case school 3, the students in the smaller class ($n = 21$) surprised their teacher with a sudden rendition of 'Happy Birthday' during one lesson. It later transpired during interview that the students had remembered their teacher's birthday after she had revealed the date during an earlier lesson on horoscopes. In class they sang the song and presented her with a card before teasing her that she should take the whole group for a celebratory meal. In the corresponding lesson with the large class ($n = 39$), no such reference was made to the teacher's birthday even though the teacher had given the same horoscope lesson to them. Students studying in this large class even claimed that the teacher did not 'know' them and rarely referred to students by name. They also revealed that this did not only apply to English lessons,

I don't think she knows who I am (laughs). Many teachers do not call us by names...it is normal. Not just her. (Large class student in School 3)

These comments echoed the view of a large class pupil in school 1 ($n = 41$),

The teacher does not know us. They can only see some students so it's useless to ask (meaning to ask for help). The teachers only see a small group of students and not the others. (Large class student in School 1)

Cultural perspectives: language learning anxiety

Many students reported having less pressure in the smaller classes because they sensed support from their peers, as the following extracts reveal,

I would never ask a teacher a question in the old class (a large class) because other classmates might laugh at me. Now I feel better about asking...the students are better now...not so many...I like speaking with classmates now. Not so much pressure as before. (Small class student in School 2)

I do not worry about talking in English now...I can answer the teacher's questions now because no-one looks down on me. (Small class student in School 2)

Similar comments were found in other case study schools,

In a large class the students laugh at me but not in the small class. We are friends and we support each other. It is easier in a small class. (Small class student in School 1)

When asked to explain what she found 'easier' in the smaller classes, the student replied 'studying'. In case school 3, students in the smaller class ($n = 21$) admitted that they were more willing to take risks in English lessons,

I didn't like answering questions before. Now it's OK. I listen more and we all answer. (Small class student in school 3)

Better than before. Much better now. There is no pressure now. They don't laugh at me. (Small class student in school 3)

In the large classes, this perceived confidence to speak up was not so apparent. In most cases, the students' reasons included references to feeling psychologically unsettled by the thought of speaking out in class.

I don't want to lose face. You know this is very important in the class and others will say harsh things if we are wrong. (Large class student in School 1)

I get nervous speaking in class. I prefer the teacher does not ask me questions. I do not like presentations but we always have them in English. (Large class student in School 2)

An interesting exception to this was found during the study. During observations of the large class in school 2 ($n = 37$), a male student raised his hand and asked if he could make a presentation, even though the teacher had not nominated him to do so. This appeared to surprise the teacher and his classmates, and in a subsequent interview, the boy was able to explain his actions,

I want to take the chance to use my English and express my feelings in any subject and any tasks...to get attention from the teacher and students. It's not so easy with so many students. (Large class student in School 2)

This student was prepared to overcome his feelings of anxiety to learn through participation, and when asked why he wanted to take 'the chance' to use his English, his answer points to time constraints being an obstacle to student participation in large classes.

We can't get a chance to speak within one week. The teacher prefers to ask us questions. If we don't get the chance we isolate ourselves and lose interest. We can easily daydream. (Large class student in School 2)

The following section draws on observational data and triangulates with the students' perceptions on learning in large and reduced-size classes.

Findings: classroom discourse

To recapitulate, classroom discourse analysis was organized under the following micro-categories of interaction: teacher-elicited responses, student-initiated responses, the times students asked for help or clarification, the times students challenged their teacher and the times when students initiated humour with their teacher. Findings from the examination of these micro-categories echo previous class size research that concluded that smaller classes facilitate more student–teacher interaction (Cooper 1989; Blatchford 2003). Results from the three case study schools are presented in Table 2.

Importantly, these data appear to validate the students' views about their perceptions and participation in large and reduced-size classes which were outlined in the previous section. Horwitz et al. (1986) cite communication apprehension and fear of negative evaluation as key constructs of foreign language classroom anxiety. Classrooms are social situations where both these types of social anxiety may be experienced, but across the three case studies, a striking difference has emerged in classroom observation data. Findings show students in all of the smaller classes initiated more responses (without being nominated by their teacher) than their peers in the large classes. Students also initiated more interaction during lessons by asking questions and seeking clarification from their teacher. This adds weight to the students' reported comments that they felt less anxious in smaller classes and that they were willing to take more risks in English classes. Students openly claimed that they felt greater 'support' from their classmates and their teacher which, in turn, appears to have empowered them to take a more active role in the learning process. Such participation might also be evidence of students' engagement in English lessons.

In contrast, there were more examples of teacher-elicited responses and fewer student-initiated responses in the larger classes observed. This suggests a crucial difference in interaction patterns between the two classes, and one which suggests that teachers may adopt different approaches to questioning in classes of varying size. Fewer examples of student participation in the large classes might also confirm students' reported preference for individualized work and their stated opinion that the teachers did not 'know' them.

Students in the reduced-size classes were also seen to make more spontaneous, humorous interjections during lessons. There were more examples of humour and challenges from students towards their teachers in all three of the smaller classes suggesting that students' behaviour and participation is very different when class size is reduced. Again, these findings suggest that students' level of language learning anxiety decreases in reduced-size classes resulting in more spontaneous, creative language output from learners. The importance of this cannot be overstated because it seemed to facilitate greater participation by students in classroom discourse and language learning tasks. 'Appendix 2' provides some examples of classroom exchanges in the smaller classes where students can be seen responding to teachers' questions without any nomination beforehand, making jokes with their teacher or challenging them in a playful manner. It should be noted that such exchanges were rarely found in observations of the large classes.

Discussion

The primary aim of this paper was to hear the student voice on the issue of whether class size is a mediating factor on their learning. This study has shown that the student voice can be a rich and powerful source of insight into curriculum innovation like class size reduction. Data from interviews and classroom observations found that reduced-size classes are more likely to promote crucial aspects of quality learning. For example, the smaller classes in this study appeared to alleviate students' anxiety about learning subjects like English language, recognized as socially important. The smaller class contexts also appeared to promote greater student participation in the classroom and, importantly, foster greater support for learning from fellow students. Students reported that they enjoyed better relations with peers and their teachers in smaller classes. This study has found these factors to be more prevalent in the reduced-size classes than in the large ones and finds that all of them are mediated by class size. This offers a compelling explanation for increased learning in classes where size has been greatly reduced.

Many of these findings are also in line with the previously cited work of Finn et al. (2003), but it is the pupils' elaboration on these answers which may provide the key to a better understanding of what possibly makes small better in terms of class size. In this paper, I have demonstrated how students perceive 'class spirit' or group cohesion as one of the characteristics of their small class environment. Such a finding has been suggested in previous studies of class size in western cultures where small classes were noted for their 'groupness' and community, but was

derived primarily from teachers' reports and not the students themselves (Wang and Finn 2000; Finn et al. 2003). Flowerdew (1998) concluded that group work can assist in the breakdown of cultural barriers that sometimes impede communication interaction in Asian classrooms. The present study has shown that as class numbers decline, students sense they benefit from being part of a single, more unified 'group' instead of the conflicting and individual 'circles' cited by students earlier. These circles or groups of friends might be seen as within-class groups or splinter groups, but clearly to these students they are not seen as positive or supportive. This contrasts strongly with the sense of cohesion among all classmates in the smaller classes in the three case schools.

When examining the theme of group cohesion, the students' reference to increased peer support and better teacher-student relationships in the small classes stands out. Here, there are some important commonalities across the cases. Teachers in Asia have been stereotyped as authority figures by their students rather than as facilitators of learning (Littlewood 2000), but in this study, the closer relations between students and teachers in the smaller classes suggests that such a view may not hold true in small classes where the teacher is seen as being an integral part of the classroom learning community. This was evidenced by the students who sang a birthday song for their teacher and in the students' comments on how their teacher 'knew' them better. It may also be that smaller classes in this study foster what Ting-Toomey (1994) referred to as the 'we-identity' in her analysis of group-oriented cultures. This could also be seen in the amount of cooperation between students in the smaller classes. In some large classes, such as in school 1 where students openly stated a preference for individual work over group activities, there was more evidence of an 'I-identity' with emphasis on an individualistic culture of learning. This highlights the importance of teacher sensitivity towards the distinction between an individual culture and a group one when shaping the classroom landscape. Examples from the small classes are consistent with Confucian values of cooperation, and evidence from the case studies points towards this cooperation being able to weaken the influence of self-effacement and face on learning.

In the smaller classes, students openly shared their experiences of wanting to participate more in lessons and feeling less anxious about speaking in front of their peers. These experiences were then supported by the analysis of classroom discourse which demonstrated greater participation from those students. This seems to reinforce the students' perceived awareness of how and why small classes can foster increased confidence in students working in smaller contexts. Such findings suggest that small class size does appear to reduce key performance anxieties. Horwitz

et al. (1986) identified three related performance anxieties that can inhibit second language learners as follows: communication apprehension, fear of negative evaluation and test anxiety, and it is clear that from the smaller class students' responses, the first two anxieties appear to be weakened as a result of being in a reduced-size class. Interview data suggest that the smaller class students appear to describe a stronger sense of security in their learning environment. They feel safer in the knowledge that they have a better understanding of their classmates in the smaller class and, therefore, a stronger sense of trust in their role as a supportive audience, or even as an assessor during individual and group presentations in class. The students' ability to compare their feelings of speaking in small classes with their participation in large classes was revealing. In interview, small class students frequently reported that while they sometimes felt nervous when presenting in class or answering the teachers' questions, they were more willing to participate because of the greater perceived support from classmates and were no longer concerned about being looked down upon, or laughed at, by their peers. In contrast, students in the large classes reported that there were students who they do not know or 'don't trust', and so this sense of unfamiliarity may enhance the social anxiety when they are asked to speak or present in front of others. Such a finding has important implications for teachers, perhaps.

This study has allowed for an important cultural perspective to be examined, too; how small class size might assist in the alleviation of second language learning anxiety among Asian students, previously cited as a cultural barrier to language acquisition and participation. The students interviewed across the small classes in the three case studies reported that they felt more empowered to participate in classroom discourse and did not sense a loss of 'face' as they had when studying in a larger class. The highlighting of key cultural and psychological factors like language learning anxiety echoes those already identified by research on second language learning in which self-esteem, confidence, 'face' and the collectivist culture have been shown as characteristic of Asian students. This, again, has significance in the Asian context because as class numbers are reduced so students seem to benefit from being part of a smaller, single 'group' instead of being part of individual 'circles' cited earlier by students in large classes. Importantly, findings from this study have obvious relevance to those schools and institutions in Hong Kong and the Pacific Rim that may be implementing small class teaching because they suggest that class size reduction can assist in the breaking down of cultural obstacles to learning.

Nevertheless, the issue of culture is fraught with complexity. This study's second research question aimed at looking how students' perceptions on class size might influence cultural perspectives of learning, but it is equally

important to try and determine whether cultural and social factors might shape the effect that class size reduction has on students' attitudes and behaviour as well. It may also be that the levels of learner anxiety in English classes were already heightened because of the high status of the subject and its importance to students' progress in school (normally students must pass compulsory subjects like English, Mathematics and Chinese language to progress to the next year). Therefore, research examining students in reduced-size classes in other academic subjects may also produce interesting insights. There is certainly a need for future research in this tangled area.

Conclusions and implications

Research on class size in Hong Kong and Asia is limited and the three case studies reported on in this paper contribute to our knowledge base by placing new emphasis on secondary school contexts and, in particular, on the all-important student voice. This reaffirms previous research (McIntyre et al. 2005; Pedder 2006) that advocates the examination and inclusion of students' opinions and views in research pertaining to teaching and learning initiatives. This study is not without its weaknesses, however. Firstly, measuring student learning outcomes was not feasible because of time constraints, but a longitudinal study of one teacher working with classes of varying size, of comparable academic ability in the same year level, would provide a valuable opportunity to gauge if, and to what extent, the classroom processes identified in this paper might lead to tangible and measurable academic benefits.

Findings from the smaller classes in this study also point to the importance of taking a sociocultural perspective towards any examination of class size. Students in this study reported having closer relationships with their peers in the smaller classes, and peer tutoring was a commonality across the small classes in this study. Students were seen to cooperate more with each other in small classes, helping one another with homework and studies and even when preparing for tests. From a theoretical standpoint, the concept of mediated action is central to Vygotsky's (1978) theory of human development, and it might be proposed that these examples of student engagement in social interaction bring individual and collective benefits to the small classes. Examples of peer scaffolding may also represent evidence of the notion of the zone of proximal development (ZPD) in operation. Such student behaviour runs contrary to other studies that have suggested that while smaller classes may help students academically, this may come at the expense of better social relations (Blatchford and Catchpole 2003). While most studies of class size have tried to focus on the cognitive and academic

benefits of class size through the administering of tests and the like, this study has revealed that social and psychological dimensions of learning may be equally powerful elements in helping to understand how class size might mediate learning.

I conclude by suggesting that reductions in class size in Asian classrooms should not be examined in detail without a combination of increased sensitivity and awareness towards the cultural background and values of the students as well as the proactive exploration of pedagogical initiatives to cope with those cultural aspects. Students' perceptions in the three case study schools shed important new light on the class size issue. Teachers and administrators may benefit from tapping into the experiences and views of these front line 'consumers', particularly in the secondary school context. We still require further examination of the multitude of social dynamics that operate in small classes, as findings will surely facilitate better awareness of why small classes seem to benefit their occupants, and how those benefits might be maximized.

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Appendix 1: Semi-structured interview prompts for students

Semi-structured interview prompts and question headings used in interviews with students in each case study. Examples of verbatim questions are included below each prompt.

1. What is your view towards the size of the class in relation to your own learning experience?

What do you think of studying in your class?

Does the size of the class make a difference to you?

Why/Why not? How?

2. Describe the learning context in your classroom

Describe your classroom layout

How is your classroom organized?

3. What do you think of pupil behaviour in this class?

Can you describe the general behaviour in your classroom?

4. What do you think of the relationship with your teacher in this class?

Can you describe the relationship your class has with your English teacher?

5. How and why does class size improve your relationship with classmates, if at all?

Can you describe your relations with classmates in your class?

6. What are your views on opportunities for individualized teaching in your class?

Do you get attention from your teacher in the class?

What sort of attention does your teacher give you? Can you describe it?

7. How does class size influence classroom interaction in your class?

Can you describe the interaction in the classroom?

Is there more interaction between you and the teacher and you and your classmates?

When do you participate in class? How often?

8. What do you think of the quality of teaching and curriculum coverage in your class?

What do you think of the teaching style in this class?

Is the teacher able to cover the curriculum/syllabus?

How would you describe the English lessons that you have?

9. Do you think you are able to pay attention and be on-task in this class?

Do you pay attention in class?

How often are you on-task? When? Why?

How often are you off-task? When? Why?

10. How do you feel towards the sense unity of your class?

What do you think about your class as a group?

Do you work together in class?

What about out of class?

11. What do you think about your own development in this class?

How have you developed in this class?

Do you think you have improved or got worse as a result of being in this class? Why? Why not?

What makes you participate in class?

12. What is the influence of class size on cultural aspects like face and learner anxiety?

Do you feel nervous in class? When? Why?

How do you feel about studying in this class?

How do you feel when you give answers or present in class? Why?

Appendix 2

Drawing on lesson transcriptions, examples of students responding, challenging and joking with their teacher are provided here:

Students responding to teachers' questions without being nominated

T: What is the word for this action?
(a student raises her hand)

T: Yes, Candy?

S1: Slicing.

(T-teacher, S1-individual student_lesson 6_School 1 small class)

Students challenging their teacher verbally

T: I have a quick task for you

S1: How quick?

T: It doesn't matter, OK? It's just quick. Don't worry.

(T-teacher, S1-individual student_lesson 6_School 2 small class)

Students engaging in humorous exchanges with their teacher

T: *What is this action called? What am I doing now?*
(Teacher is miming the action of chopping food by chopping downwards on the desk)

S1: *Cutting off your arm*

(class laughs)

T: I don't think so. Very funny...what was I doing?

(T-teacher, S1-individual student_lesson 1_School 1 small class)

References

- Biggs, J. (1996). Western misperceptions of the Confucian-heritage learning culture. In D. Watkins & J. Biggs (Eds.), *The Chinese learner: Cultural, psychological and contextual influences* (pp. 45–68). Hong Kong: Comparative Education Research Centre and Australian Council for Educational Research.
- Blatchford, P. (2003). *The class size debate: Is small better?* Philadelphia: Open University Press.
- Blatchford, P., Bassett, P., & Brown, P. (2011). Examining the effect of class size on classroom engagement and teacher–pupil interaction: Differences in relation to pupil prior attainment and primary vs. secondary schools. *Learning and Instruction, 21*(6), 715–730.
- Blatchford, P., & Catchpole, G. (2003). Class size and classroom processes. In J. P. Reeves & R. Watanabe (Eds.), *International handbook of educational research in the Asia-Pacific region*. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Blatchford, P., Russell, P., & Brown, P. (2009). Teaching in large and small classes. In L. J. Saha & A. G. Dworkin (Eds.), *International handbook of research* (pp. 779–790). Berlin: Springer.
- Cooper, H. M. (1989). Does reducing student-to-instructor ratios affect achievement? *Educational Psychologist, 24*(1), 79–98.
- Cortazzi, M., & Jin, L. (2001). Large classes in China: 'Good' teachers and interaction. In D. A. Watkins & J. B. Biggs (Eds.), *Teaching the Chinese learner: Psychological and pedagogical perspectives*. Hong Kong: CERC.
- Din, F. S. (1998). The benefits of teaching small classes perceived by Chinese urban school teachers. Paper presented at the Annual Meeting of the Eastern Education Research Association.
- Ellis, R. (1998). *Research and language teaching*. Oxford: Oxford University Press.
- Erickson, F., & Shultz, J. (1991). Students' experience of the curriculum. In P. W. Jackson (Ed.), *Handbook of research on curriculum: A project of the American Educational Research Association* (pp. 465–485). New York: Macmillan.

- Finn, J. D., & Achilles, C. M. (1990). Answers and questions about class size: A statewide experiment. *American Educational Research Journal*, 27(3), 557–577.
- Finn, J. D., Pannozzo, G. M., & Achilles, C. M. (2003). The “why’s” of class size: Student behaviour in small classes. *Review of Educational Research*, 73(3), 321–368.
- Finn, J. D., & Wang, M. C. (Eds.). (2002). *Taking small classes one step further*. Philadelphia, PA: Temple University Center for Research in Human Development in Education.
- Flowerdew, L. (1998). A cultural perspective on groupwork. *English Language Teaching Journal*, 52(4), 323–329.
- Galton, M., & Pell, T. (2010). *Study on small class teaching in primary schools in Hong Kong*. Hong Kong: Education Bureau and Cambridge University.
- Hanushek, E. (1998). *The evidence on class size*. Rochester, NY: University of Rochester, W. Allen Wallis Institute of Political Economy.
- Harumi, S. (2011). Classroom silence: Voices from Japanese EFL learners. *English Language Teaching Journal*, 65(3), 260–269.
- Hattie, J. (2005). The paradox of reducing class size and improving learning outcomes. *International Journal of Educational Research*, 43, 387–425.
- Horwitz, E., Horwitz, M., & Cope, J. A. (1986). Foreign language classroom anxiety. *Modern Language Journal*, 70(1), 125–132.
- Horwitz, E., Horwitz, M., & Cope, J. A. (1991). Foreign language classroom anxiety. In E. K. Horwitz & D. J. Young (Eds.), *Language anxiety: From theory and research to classroom implications*. New Jersey: Prentice Hall.
- Jin, L., & Cortazzi, M. (1998). A dialogue: Large classes in China. *International Journal of Educational Research*, 29, 739–761.
- Johnson, K. E. (1995). *Understanding communication in second language classrooms*. Cambridge: Cambridge University Press.
- Lewis, A. (1992). Group child interviews as a research tool. *British Educational Research Journal*, 18(4), 413–421.
- Littlewood, W. (1999). Defining and developing autonomy in East Asian contexts. *Applied Linguistics*, 20(1), 71–94.
- Littlewood, W. (2000). Do Asian students really want to listen and obey? *English Language Teaching Journal*, 54(1), 31–35.
- McIntyre, D., Pedder, D., & Ruddock, J. (2005). Pupil voice: Comfortable and uncomfortable learnings for teachers. *Research Papers in Education*, 20(2), 149–168.
- Miles, M., & Huberman, M. A. (1994). *Qualitative data analysis* (2nd ed.). Beverly Hills: Sage Publications.
- Pedder, D. (2001). *The impact of class size on effective teaching and learning: A conceptual and methodological investigation*. Unpublished PhD dissertation, University of Cambridge, Faculty of Education.
- Pedder, D. (2006). Are small classes better? Understanding relationships between class size, classroom processes and pupils’ learning. *Oxford Review of Education*, 32(2), 213–234.
- Sinclair, J., & Coulthard, M. (1975). *Towards an analysis of discourse*. Oxford: Oxford University Press.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.
- Ting-Toomey, S. (1994). *The challenges of facework: Cross-cultural and interpersonal issues*. New York: State University of New York Press.
- Triandis, H. C. (1995). *Individualism and collectivism*. Boulder: Westview Press.
- Tsui, A. B. M. (1996). Reticence and anxiety in second language learning. In K. M. Bailey & D. Nunan (Eds.), *Voices from the language classroom*. Cambridge: Cambridge University Press.
- Tsui, A. B. M. (2003). *Understanding expertise in teaching*. Cambridge: Cambridge University Press.
- Vygotsky, L. S. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.
- Wang, M. C., & Finn, J. D. (Eds.). (2000). *How small classes help teachers do their best*. Philadelphia, PA: Temple University Center for Research in Education.
- Xie, X. (2010). Why are students quiet? Looking at the Chinese context and beyond. *English Language Teaching Journal*, 64(1), 10–20.
- Yin, R. (1991). *Applications of case study research*. Washington, DC: Cosmos Corp.