

An examination of teachers' perceptions and practice when teaching large and reduced-size classes: Do teachers really teach them in the same way?

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Abstract

Class size research suggests that teachers do not vary their teaching strategies when moving from large to smaller classes. This study draws on interviews and classroom observations of three experienced English language teachers working with large and reduced-size classes in Hong Kong secondary schools. Findings from the study point to subtle differences between teachers' perceptions and their subsequent classroom practice. Implications for professional practice and development are presented.

Key words: class size reduction; secondary school; teacher perceptions; professional practice; professional development.

1. Introduction

This paper examines teachers' perceptions and practices when teaching large classes (of 40 students and above) and smaller classes where the number of students has been greatly reduced. While studies of the impact of class size reduction on teaching behaviour have been well documented (Bourke, 1986; Hargreaves, Galton and Pell, 1998), this paper draws on interviews and classroom observations carried out through multiple case studies of teachers who were working in different schools, but who were all responsible for teaching one large class and one smaller class at the same grade level in their respective schools. In each case study, then, both classes were taught by the *same* teacher, a research design which differs from previous studies of class size reduction, where the teacher variable was not controlled (Blatchford, 2003; Galton and Pell, 2010). By focusing on how these teachers operate in their large and reduced-size classes, it is possible to identify whether there is consistency between what they say about working in small classes and how they then teach those reduced-size classes.

This paper stems from an exploratory study which was conducted in the context of an ongoing debate between the teachers' union and the government in Hong Kong on the

reduction of large class size in secondary schools (usually 40 students or more) and whether smaller class sizes would lead to better student learning. Hong Kong presently occupies a central position in class size research because of the Government's decision to roll out a comprehensive small class teaching initiative at Primary school level from 2009 following a large scale study of class size in the same context (Galton and Pell, 2010). There is, however, a paucity of research data on the effects of class size in the secondary context both locally and globally. In particular, there is a very limited knowledge or published research on secondary school teachers' experiences of working with reduced-size classes, the exception being a few studies in the United Kingdom (Pedder, 2001; Blatchford, Basset and Brown, 2008). It is particularly important to look at secondary school contexts because it is in secondary schools where students arguably undertake more complex intellectual tasks and therefore require more support and scaffolding from their teachers, and this support may be more susceptible to class size variation (Pedder, 2006). Information gleaned from this study has implications for practice in classes of varying size. Two research questions underpin this study:

1. What are the secondary school English language teachers' perceptions of teaching large and reduced-size classes of the same grade level?
2. What are the differences, if any, between those perceptions and the subsequent practices of the same teachers when teaching in large and reduced-size classes of comparable ability?

This paper does not seek to intervene in the long standing debate on whether the academic benefits of small class size, if any, are cost effective or not. The aim of the paper is to extend the research into small or reduced-size classes by including an examination of what secondary school teachers actually *do* in their language classrooms where class size has been reduced. The goal of this paper, therefore, is to understand better the nature of teachers' perceptions of teaching reduced sized classes and the links between their perceptions and subsequent practice.

1.1. Teacher perceptions of teaching reduced-size classes

Teacher beliefs are the ideas that influence how teachers conceptualize teaching. These ideas encompass 'what it takes to be an effective teacher and how students ought to behave' (Pajares, 1992, p.322). Drawing on teachers' perceptions of small class teaching

has been a central feature of numerous class size studies around the world; most of the qualitative data on class size differences has, inevitably, stemmed from teachers' own perceptions of their classrooms. Unsurprisingly, perhaps, these have been overwhelmingly positive in the belief that class size reduction leads to better student behaviour, easier classroom management and the development of more positive attitudes in learners (Korostoff, 1998; Wang and Finn, 2000). In Hong Kong, questionnaire responses from teachers in a small class study of Primary schools revealed an almost uniform sense of "professional comfort" when teaching small classes (Galton and Pell, 2010, p.12) but the same study also noted that teachers intuitively saw smaller classes as being better teaching contexts even when they had not actually taught in one. Such feedback from Hong Kong teachers mirror the responses of those in the UK who were also asked for their opinions on teaching small classes (e.g. Bennett, 1996; Blatchford, 2003). Certainly, teachers' viewpoints represent a most important aspect in the argument for reducing class sizes because teachers' attitudes towards class size and their practice within a large or small teaching context could well be a mediating factor in the effectiveness of their pedagogy on learning outcomes. Nevertheless, there is a counterpoint here since many of these teacher interviews have taken place outside the classroom, or even included teacher respondents who have not necessarily experienced small class teaching. In sum, this can be seen as a decontextualised way of eliciting teacher opinions and might explain why teachers tend to indicate that class size has a significant impact on the effectiveness of their classroom teaching (Pedder, 2006). This paper, therefore, rests on the standpoint that relying solely on teacher report for an examination of the benefits of class size is not enough.

1.2. Teacher practices in regular and reduced-size classes

While teachers appear universally welcome smaller classes, there is a substantial body of research which suggests that teachers do not change their practice when moving from larger classes to smaller ones (Cahen, Filby, McCutcheon, & Kyle, 1983; Rice, 1999). This is in spite of the powerful teaching opportunities that small classes are supposed to offer (Pate-Bain, Achilles, Boyd-Zaharius, & McKenna, 1992; Finn and Achilles, 1999). Teachers may *claim* that they teach differently when presented with a smaller class, but

the reality appears to be that they very often maintain the same pedagogy that they employ in large classes (Shapson, et al. 1980). In other research, small classes were still found to be “teacher-centred, teacher-controlled...student choice, independence and interest are of less concern than individual content coverage” (Molnar et al., 1999, p.173). In light of these studies, it is possible to claim that while cutting class sizes *might* lead to improved teaching and learning, it is also possible that it *might not* if teachers continue to instruct their classes in same manner as they do in large classes. A teacher who does not see the value of interaction with, and among, students, for example, is unlikely to change his or her practice in a class of a different size (Hargreaves, Galton and Pell, 1998). This inevitably highlights the importance of decision making on the part of the teacher and here the gap between reported practice and the actual practice of teachers in the classroom starts to emerge.

To complicate the picture further, trying to identify good or ‘best’ teaching practices in reduced-size classes is fraught with difficulties. Galton (1998), for example, argues that there are very few clear answers to questions about which strategies teachers should adopt when operating in small classes but there is acceptance in some quarters that specific teaching strategies are required in small classes to exploit properly the learning opportunities available (Graue and Rauscher, 2009). These strategies might include encouraging more teacher-pupil talk, more pair and group work, the creation of a context for meaning for students, more developmental feedback and the promotion of peer tutoring. One of the reasons for this lack of knowledge of good teaching practices in smaller contexts is that much of the focus of class size research has been on measurable learning outcomes rather than on the types of pedagogy being practiced in those classes. Some researchers have tried to address this gap in the literature, with Hattie (2005) noting that examples of effective teaching such as the ones mentioned above can be achieved in any classroom, regardless of size. Such a view appears to be reinforced by Galton and Pell (2010) who note “the principles of effective teaching are the same in classes of all sizes” (p.6-7). In their longitudinal study they build on previous research into effective teaching (e.g. Brophy and Good, 1986; Porter and Brophy, 1988) by pinpointing six pedagogic principles which they believe facilitates students’ understanding: a clear

statement of learning objectives to students at the start of a lesson, the use of extended questioning techniques, increasing pupil participation, using group and pair work to promote a spirit of cooperation among learners, providing feedback that promotes student reflection and self correction and, finally, the adoption of an assessment for learning framework. Crucially, however, they note that these pedagogical practices might be more easily achieved in small, or reduced-size classes.

Research has also promoted ‘dialogic teaching’ a concept elaborated by Alexander (2004) in both whole class and small class settings. Seen as being collective, supportive and reciprocal, dialogic teaching advocates more discussion among class members above the use of instructional talk, a cumulative approach to classroom talk, the use of more open questions, keeping lines of enquiry open and not closing interactional opportunities down and is said to achieve the best educational results (Nystrand et al., 1997; Alexander, 2000). This pedagogic approach which places emphasis on sustained pupil participation in classroom talk, underpins my analysis of classroom discourse from the selected case studies (see Methodology).

1.3 Explaining the gap between perception and practice

A disjuncture between what teachers say they do in reduced-size classes and what they actually do in those classrooms is already established. However, this should not come as a surprise given that teaching has long been seen as a conservative profession and that a gap has been identified between knowledge that stems from educational research and the actual practice of teaching (McInyre, 2005). This study recognizes that what teachers do and what teachers feel are inextricably linked. McInyre (2005) succinctly states that “while research-based knowledge about good practice has to be formulated in generalized terms, classroom teaching is necessarily and very fundamentally personalized” (2005, p.360). Research suggests that teaching a small class may allow educators to do more effectively what they know is right in terms of teaching and learning (Finn and Achilles, 1999) and this appears to be an entirely rational proposition but it overlooks the complex nature of the classroom context and the multidimensionality of a teacher’s work (Doyle,

1980). It may also be that many educators are not always able to theorise their work more in order to maximize the benefits of a small class, as Galton and Pell (2010) note,

There is strong evidence that one of the main reasons why it is so difficult to implement pedagogic change of any kind is that teachers do not have a grasp of the underlying theories which support the use of certain teaching approaches. (2010, p.64)

In trying to examine the differences, if any, between teachers working in large and reduced-size classes in this study, it is useful to remember that although teachers are not necessarily theoreticians, they are able to articulate their perceptions and decision-making when they have good reason for doing so, when problems arise in the classroom or when they find themselves in new situations or contexts (Brown and McIntyre, 1993). At these critical moments teachers are able to reflect on their practice (Schon, 1983) and all the teachers who participated in this study are examples of educators facing a novel situation, namely teaching large and reduced-size classes of the same grade level and of similar academic ability for the first time.

2. The Context of the study

This study is set in Hong Kong, a context influenced by Confucian-heritage culture (CHC) orientations according to Biggs (1996). Hong Kong classrooms are often characterized by whole class instruction and by teachers who have been typically stereotyped as figures of authority and respect (Littlewood, 1999). CHCs tend to have large classes and secondary classes in Hong Kong often contain 40 students or more. In the local context, then, a class size of 25 (as in this study) would certainly be defined as ‘small’ but it is highly unlikely that a class size of 25 would be labeled as ‘small’ from an international perspective. For example, one of the most influential studies on class size conducted in the USA, the Student Teacher Achievement Ratio Project (or STAR Project), included ‘regular’ class sizes of 22-25 and ‘small’ class sizes of 13-17 in its examination of the effect of class size on student achievement in Tennessee, USA. Arguably, such small class sizes are unfeasible in Hong Kong which makes it hard to generalize their findings in the local context. Blatchford and Mortimore (1994) suggested that an optimal ‘small’ class was 20 students or fewer, but even this definition was impossible to adopt in my study where the

smallest class size is 21. It has therefore been problematic trying to define ‘small’ in the context of this study and this explains why my study chooses to focus on classes where the regular class size has been greatly reduced rather than trying to identify an optimal ‘small’ class size. This explains my employment of the terms ‘smaller’ or ‘reduced-size’ classes in the paper. Table 1 below shows the class sizes of the classes that are the focus of this paper.

Table 1 *Secondary school class sizes in this study*

Year level (grade)	Small class size	Large class size
Grade 9	n= 25	n= 41
Grade 8	n= 25	n= 40
Grade 8	n= 21	n= 39

Finally, curriculum documents in Hong Kong encourage teachers to promote higher order thinking skills by enhancing the quality of interaction in the classroom with the use of more open-ended questions being one example given (CDC & HKEAA, 2007, p. 68). This may explain why many Hong Kong secondary schools are experimenting with small classes as a way of promoting the type of learning environment suggested in curriculum documents and it also returns us to the concept of dialogic teaching (Alexander, 2004) but such a change in teaching behaviour is not easy. Hong Kong classrooms, like other CHCs, have been seen as largely teacher-centred, and where closed questions dominate discourse patterns in English classrooms (Tsui, 1996). They are also where students sometimes lack the confidence to ask questions or challenge their teacher because of the debilitating influence of language learning anxiety on their classroom behaviour (Tsui, 1996, Cheng 2000).

3. Methodology

I employed a qualitative research methodology in the collection and analysis of data stemming from this study. The database includes 22 semi-structured interviews with three experienced teachers across three case study schools as well as 48 lesson observations.

This study employed a multiple case study approach aimed at outlining, enhancing and expanding theories and concepts around the issue of class size. A multiple case study is adopted 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. A ‘case’ in this study constitutes a teacher teaching a large class as well as a reduced-size class of comparable level and ability. Each case then provides an opportunity to understand and explain any differences that are identified. By taking a particular case and understanding it well, it is possible to determine what it is and what it does (Stake, 1995, p.8). Case studies have proved invaluable in illuminating some of the fine detail in what makes small classes different to larger ones (Blatchford, 2003, Galton and Pell, 2010). This study holds similar aims.

The emphasis of detailed case study is on particularization and not generalization (Stake, 1995) and findings from this study are intended to generate insights which will inform a long-standing educational issue: namely, how class size reduction affects the perceptions and practices of teachers in classes of different size. Whilst attempting to adopt a naturalistic approach throughout the study, I paid some attention to exerting control over key variables that would have an impact on classroom interaction and learning, namely, the teacher, the content of the lesson (including the topic and the language skills) and the academic ability of the students. I was given access to each school’s examination results in order to ensure that students in each case study were of comparable ability.

3.1 Participants

3.1.1 Teachers

I was able to identify cases that fit into the research design of this study through extensive contact with the local school community. The design required that one teacher 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, should participate. In each case school, the teachers had been given two classes of the same grade largely because of workload issues in their respective school. The teachers had not taught two classes of the same grade level before.

Three teachers from different case schools volunteered to participate in the study. The selection of participating teachers was limited by their own willingness to be observed as well as the permission of their schools. I invited these teachers to have their lessons over one cycle of teaching observed and video-recorded (each teaching cycle typically lasted for 7 or 8 lessons and lessons were around 40 minutes long). These observed lessons formed part of the teacher's existing teaching schedule and followed the regular secondary school curriculum in English which prepares students for general examinations at grade 10. The teachers who took part in the study were all female, reflecting the gender bias of the teaching profession in Hong Kong. Five years of experience seems to be a commonly accepted criterion in the selection of experienced teachers (see Tsui, 2003) and each teacher in this study had between 6 and 20 years experience. All possessed a postgraduate diploma or certificate in education as well as a Masters degree in Education.

3.2 Procedures

3.2.1 Teacher interviews

Interviews are seen as a way of getting inside participants' heads (Tuckman, 1972) and a baseline interview was held with each teacher before the observation period commenced. This allowed me to obtain teacher's personal viewpoints and experiences of teaching their respective classes. More regular interviews with each teacher participant were carried out during the observation period, normally after each class. The main foci included: lesson planning, reference to particular classroom episodes and incidents, teachers' opinions on the two classes taught and expectations of each, discussion of the teachers' pedagogical decisions, the teachers' organization of classroom learning, the teachers' views on classroom interaction in the two classes, and teachers' views on opportunities for individualized teaching in their classes (see appendix A for the interview questions used with each teacher). Interviews typically ranged from 20 minutes to 50 minutes with each being audio-recorded and later transcribed verbatim. This approach ensured comparability with qualitative class size research studies already mentioned (e.g. Shapson et al., 1980; Molnar et al., 1999) in eliciting the views of teacher participants.

3.2.2 Teacher practices

Observation of classroom teaching generated data on classroom events and discourse in both classes taught by each teacher. Such an approach allowed for a more emic perspective to be taken. The observations placed emphasis on each teacher's attempts to enhance interaction in their respective learning environments. In this way, it could be seen whether or not a teacher was actively engineering the opportunities for increased student-student interaction. Video and audio recordings of all lessons were transcribed verbatim for further analysis. Aware of the danger of the observer's paradox (Labov, 1994), I did not participate in observed lessons, and any feedback on the teachers' work in each class was delayed until after the cycle of teaching was completed, thereby minimising the potential risk of data contamination.

The analysis of data in this study of large and small classes was done by breaking each transcribed lesson into smaller sections or episodes. Field notes recorded examples of classroom discourse with data divided into three modes of interaction: teacher-class, class-teacher, and student-student. This allowed me to examine the teachers' discourse and to see whether those discourse patterns changed as the teachers moved from large to reduced-size classes. Global research in the area of classroom discourse suggests that it is made up of a three-part exchange structure, namely an initiation, a response and a follow-up move or IRF, (Sinclair and Coulthard, 1975). Through analysis, I also wanted to mark the distinction between display (closed) and referential (open) questioning in terms of language learning as research shows that when teachers ask more referential questions in class, the replies from learners are significantly longer and more structurally complex (Brock, 1986).

I combined observation sheets with field notes and video transcriptions to code communication patterns in this study. Micro-categories of interaction modes on the observation sheet were drawn from some of the characteristics of dialogic teaching cited earlier (Alexander, 2004): addressing individual students, addressing the whole class, using open questions, using closed questions, teachers developing dialogue with pupils

by extending the 'Follow-up/Feedback' move in teacher-student exchanges, personalisation (referring to students' by name) and using humour with the class. The use of student names, humour and personal comments from the teacher may be seen as examples of 'knowing' students (Wang & Finn, 2000). Field notes were also used to record each teacher's attempts to change the layout of their classroom to maximize student participation in learning, another characteristic of dialogic teaching.

3.3 Data analysis procedures

All transcribed lessons were analysed both quantitatively and qualitatively. For example, the numbers of times a teacher employed open questions or referred to a student by name during lessons were noted and quantified. This allowed me to compare the teacher's discourse in her large and reduced-size class over one teaching cycle (see table 3).

I transcribed all interviews myself in order to be completely immersed in the data and respondent validity was achieved by teachers reading and approving all interview and lesson transcriptions (Stake, 1995). Interview data was analysed using a coding process (Strauss & Corbin, 1998), and all interview data was compared so that patterns could be identified. Interview transcripts and daily field notes underwent an iterative process of data reduction and verification (Miles & Huberman, 1994). I started by assigning codes to the interview transcripts and from these codes a number of themes emerged through an iterative process of analyzing data. When a theme was identified I was able to pool data from other research instruments which corresponded to that theme. A coding system to characterize teachers' practices was outlined in an earlier section of this paper (see 3.3.2).

To enhance trustworthiness, peer examinations were conducted with associates in Hong Kong providing feedback and insight on the emerging arguments and propositions. Extracts from interviews and classroom observations are used later in this paper and stand as evidence for the findings reported therein. Space precludes the inclusion of lengthy transcriptions in this paper but classroom vignettes are included to highlight what was going on in the classrooms under discussion.

4. Findings

The small cohort of teachers in this study notwithstanding, the combination of teacher interview and classroom observation did produce some insights, which are separated into two main sections: teachers' perceptions of teaching reduced-size classes and classroom observations. Under each section some salient patterns identified through the coding process are presented. In teacher interviews, these include: lesson planning, adopting different teaching approaches, improved classroom management and knowing students.

4.1 Teachers' perceptions on teaching reduced-size classes

4.1.1 Lesson Planning

All three teachers commented on how they planned their lessons in the two classes. Barbara and Anna (both pseudonyms) held similar views,

I prepare them both in the same way. I don't really have time to do anything different...it's easier to do the same things so I plan the same materials for both.
(Barbara)

Of course I plan them both together. I have to teach them the same things so I plan the lessons for both and then they both receive the same input from me.
(Anna)

From these examples, Barbara and Anna acknowledge that at the planning stage they prepare both classes in the same way and attribute this to lack of time (in covering the syllabus) and ensuring a standardized approach to content delivery across the two classes (because both classes are preparing for the same assessments). The final teacher, Cathy, (a pseudonym) shares a different perspective,

I do prepare them mainly the same way. As you know, we have to cover the same textbook and students are tested on the same things. But...I do think carefully when I am planning for the smaller class...I mean that I know they can do a little more...I can do some different things with them so sometimes I add a task or an activity. I know I also have a little more time to give the students in the small class so I can plan more for them. (Cathy)

Here, Cathy recognizes the constraints highlighted by Anna and Barbara but is able to articulate a different approach to her smaller class in her planning and in her classroom

teaching. This question of how, or whether, these teachers adopt different approaches in their teaching is elaborated on next.

4.1.2 Adopting different teaching approaches

As seen, Cathy seems to sense greater teaching opportunities in her smaller class and here she talks about her pedagogical approach to the two classes,

It's much easier when preparing class (in the small class) because I know what I can do with the students. Sometimes in a class of 30 or 40 it's like trial and error...some things work and some things don't. I have more freedom in a small class. (Cathy)

I don't have to worry about things like classroom space and moving desks in the small class. I can simply ask them to get together and they do. In a normal class (meaning 40 plus students), this is a nightmare because it wastes time and makes noise. (Cathy)

In these excerpts, Cathy stresses that teaching a smaller class gave her more “freedom”, particularly in the way she plans and implements instructions and tasks in lessons. Anna offers a similar point about a small class allowing her to push her students harder than in the large class, “*They finish things quickly so I push them harder...harder than the larger class.*” Anna was then asked to explain how she saw her role in both classes,

With the smaller class I am more facilitative but in the larger class I am more of a teacher...with the large class I put more burden on myself and lessons are more teacher-centred. (Anna)

In these comments, Anna says she pushes the smaller class “harder” than the larger class and reveals how a smaller group helps to shape her own teaching style,

I think with a large class I don't expect as much as I expect from a smaller class...in the smaller class I expect almost all the students to focus on the lesson ...It's a different type of teaching. (Anna)

This extract suggests that a reduced class size has actually changed the teacher's expectations of her students. Although this may point to teachers' awareness of the different possibilities that a small class might afford, a recurring admission in interviews was that they did not actually change their pedagogy. For example, when prompted about the pedagogical differences in her two classes, Barbara admitted that “*I do the same things with both classes. I have not got the time to make up new things for one class so*

they both get the same. It's easier that way." When asked about specific changes to the teaching of her smaller class, Anna acknowledges that there are "*none, really*" but that any change is mostly "*psychological*" and that the reduction in her class size felt "*like a huge burden had been lifted.*" Anna points to a lighter workload as the biggest benefit of having a small class,

I was happy (upon hearing she would be teaching a smaller class) as this meant I didn't have as much marking and preparation to do...it's hard to have 40 students because of all the marking and deadlines for homework. I felt relieved to be honest. (Anna)

4.1.3 Improved classroom management

A recurring theme from the teacher interviews was reference to classroom management, as this example demonstrates,

It's so much nicer (teaching the small class)...it was really unpleasant before...I can monitor what everyone is doing... they don't play up in all sections of the room...there's just less noise, less disruption and less everything. It's a more pleasant environment I would say... (Barbara)

Barbara comments that the initial experience of working with large classes was a painful one and that she would "*take a deep breath and pray*" before each lesson commenced, but as a result of having a smaller class (n=25), she was "*not so demoralized about preparing lessons*" anymore.

Cathy also cites management issues when comparing the differences she experienced in her two classes (n=39 and n=21). Describing her large class as "*more of a trouble*" Cathy notes that the large class was more difficult to manage and that "*mentally*" she needed to consider more things such as, "*...their moods and feelings...but I find that the large class is harder to predict.*" She later expanded on this point,

Well, I don't mean they (the large class) are bad, but it's much harder preparing for a larger class because I worry about management and how to handle all the students at once. I do not always get the same sense of enjoyment teaching this class, but in the small class I always feel quite relaxed...I think it's mentally easier in the smaller class as the numbers are lower, so there is less chance of student trouble. (Cathy)

Cathy cites classroom management as the most important factor in explaining her positive feelings towards small class teaching and notes that her students in the reduced-size class are more positive in their outlook than in the larger class. When asked to elaborate on what this meant in terms of classroom behaviour and interaction Cathy responded,

Well the students are more expressive in the small group. They laugh more with each other and we have lots of fun. Their spirit is good and whatever I give them they seem to like. They don't complain...they work together and don't seem to be afraid of new activities. Last week I asked them to write a blog for a song that we listened to in class. They did it really well and told me it was interesting. When I did it with the other class (n=39) they said it was boring but it was the same thing...they still did it but it was not the same. (Cathy).

Cathy's response highlights not only the sense of enjoyment that she appears to derive from working with the smaller cohort, but also the way that students in the smaller class seem to respond more positively to classroom tasks.

4.1.4 "Knowing" students

A consistent pattern which emerges from interviews is that teachers know their students better in smaller classes, as the following excerpt illustrates,

I think I can really know my class better. For instance, at the start of the term, I felt I knew all of them by the end of September. In my first year it took me until the end of the first term to feel the same way because there were over 40 students in that group. (Cathy)

Anna also explains that teaching a reduced-size class has presented her with the opportunity to get to know her pupils better,

It helps to build a class spirit where we are all together and working together. I can do that because I know the students and they know me. The relationship between us has got stronger over the year. (Anna)

In a post-lesson interview Anna comments on a particular student, who made a clever joke using language play during a lesson,

He is a very interesting character. He loves playing jokes in the class and he thinks quickly. He loves to read and I often see him looking at the newspaper and doing the crosswords and puzzles. He once challenged me to beat him in a crossword race. I have sent him some online puzzles before and I know he does them. He's definitely sharp. (Anna)

In the small class it (knowing them better) helps. Yes, because now I know their character. I know their thinking quite well so when I give feedback I also know what they need to hear. It also helps me to get everyone involved in the smaller class. (Anna)

Here, Anna reports that she knows her students well and admits to being able to describe the learning strategies and personalities of all her students in the smaller class. However, this sense of “knowing” her students not only refers to knowing their names. It also means that she has a better understanding of the students’ characters and their way of thinking which, to her, represents an important advantage in promoting better teaching and learning processes in class,

The response from teachers in larger classes was different, as shown in this response from Anna,

Honestly speaking I don’t know them that well. I teach them and they work, but we don’t have a close relationship...not really. In the large class, sometimes I don’t even know the students’ names...not all of them. Small classes definitely help with better relations. (Anna)

Barbara also acknowledges that getting to know all her students in the larger class “is virtually impossible” and said she was unable to comment on their individual learning styles.

Interview excerpts from teachers working in smaller classes are consistent with the positive views expressed by respondents in previously cited class size research. They all reveal commonalities in explaining the positive response: the psychological benefits of having fewer classroom management problems to worry about, better knowledge of students and more opportunities for teaching. Even so, two teachers reported that they did not actually change or vary their pedagogy when faced with a smaller class, but instead, chose to do much the same in both classes, echoing findings from other class size studies of teacher practice (Shapson, et al. 1980). In the following section, observational data including classroom exchanges are presented to ensure a more emic perspective to the study.

4.2 Classroom observations

4.2.1 Organisation of learning

The number of times teachers varied their organization of learning in large and reduced-size classes during lessons was recorded. As table 2 demonstrates, teachers organized group work more frequently in the smaller classes than in the large classes. In the large classes, teachers rarely varied the organization of learning over the observed cycle of teaching.

Table 2 *Organisation of learning in each class*

Teacher	Anna		Barbara		Cathy	
Class	Large (n=41)	Small (n=25)	Large (n=40)	Small (n=25)	Large (n=39)	Small (n=21)
Teacher reorganizes the class using group work	n=1	n=8	n=1	n=4	n=1	n=1

4.2.2 Classroom discourse analysis

Further examination of the teachers operating in large and reduced-size classes continues with an analysis of classroom observation data. These data demonstrate the differences in the ways each teacher interacted with their large and small classes. Table 3 shows how teachers address far more questions to individual students in their smaller classes. Another interesting finding is that many more open questions are found in the smaller classes, and there are also more cases of teachers extending the interaction with pupils by sustaining the line of enquiry. There are more examples of personalized interaction in the small classes, with teachers clearly using students' names more in their smaller class context, and more examples of humour from each teacher are noted in the smaller contexts, too.

Table 3 *Classroom interaction modes (teacher-class)*

Teacher and Class	Anna		Barbara		Cathy	
	Large (n=41)	Small (n=25)	Large (n=40)	Small (n=25)	Large (n=39)	Small (n=21)
Teacher-student Interaction modes (number of instances recorded in transcripts)						
Addressing individual students	7	36	8	11	23	45
Addressing whole class	34	23	41	50	21	18
Using open questions	17	23	11	15	21	42

Using closed questions	24	27	42	37	31	32
Extending dialogue with pupils by extending the 'F' move into an 'I' in I-R-F exchanges	11	19	12	14	24	39
Personalisation (referring to students' names in class and in tasks)	4	26	6	13	22	48
Using humour with class	4	11	2	3	4	10

The difference between the numbers of times teachers addressed individual students when compared with eliciting answers from the whole class was explained by Anna,

In the small class there is more chance of students answering me. I know that someone will answer, so that allows me to ask more open questions at times. In the large class I don't have the time to ask a question and wait for an answer. It's easier in the small class that way. (Anna)

Anna reveals an acute awareness of the differences in her own approach across the two classes. She claimed this was due to having “more time” in the small class to ask open questions. Another pedagogical difference was found in Cathy's lessons. In her interviews, she had previously referred to her ‘no-hands policy’ for students in the smaller class (n=21). This meant that students could call out answers at any time and did not have to raise their hands in order to facilitate a nomination from Cathy. This teaching strategy was not employed in the large class, however, and in observation these classes revealed the opposite to be true; here, students were still required to raise their hands when answering questions or volunteering responses. Cathy put forward this explanation,

In the small class the students seem to call things out and because of the small number of students I can deal with it easily. It's quite natural and I can control it. I thought about it in the large class but will I know where the answers are coming from? Will the students speak up? I don't know, so it's easier to have a hands-up policy and then I can encourage them to participate this way. (Cathy)

The three teachers tended to personalize their teaching much more in their smaller classes. One lesson transcription extract demonstrates this difference. In this lesson, Cathy is introducing figurative language to her students and this extract focuses on metaphors used in advertisements (a car was compared with a cheetah in the advert),

Excerpt 1 from small class (Cathy)

- | | | | | |
|------|---|------|-----|--|
| Ex 1 | 1 | I | T: | What sort of metaphor can we see in this advert? Talk among yourselves. |
| | 2 | R | Ss: | [Students working together] |
| Ex 2 | 3 | Re-I | T: | mmm... John and Ben , did you have an idea? What do you think? |
| | 4 | R | S1: | We think it's an advert for a car |
| Ex 3 | 5 | F-I | T: | A car. Mmm...but John there is no mention of a car. So what... |
| | 6 | R | S1: | Metaphor...see...it's a metaphor. The cat is a car. |
| Ex 4 | 7 | F-I | T: | Ben , you look puzzled. Is that what you agreed together? |
| | 8 | R | S2: | Yes. The car is described as a fast animal...like the cat in the picture. |
| Ex 5 | 9 | F-I | T: | Right. That's clearer. I'm sorry John I know you have the answer but I wanted you to be clearer. Belle , what about you? What did you and Sam come up with? |

Excerpt 2 from large class (Cathy)

- | | | | | |
|------|---|-----|-----|---|
| Ex 1 | 1 | I | T: | This advert is strange isn't it? We have an advert that talks about cats and roads but there is no mention of what is for sale. What can it be? Does anyone know? |
| | 2 | R | S1: | A sports car. |
| Ex 2 | 3 | F-I | T: | A sports car. Interesting. Yes. A car. Why a sports car? |
| | 4 | R | Ss: | Fast |
| Ex 3 | 5 | F-I | T: | Mmm...Like the cat you mean? |
| | 6 | R | Ss: | Yes. |
| | 7 | F | T: | OK good. The advert is using a fast animal to compare directly with a car. |

In excerpt 1, Cathy refers to students more by name in the smaller class (n=21) while in the larger class (n=39), she invites the class to answer as a whole. Another interesting difference to note is the way Cathy allows students the chance to talk with each other about the metaphors in the small class (line 1) while in her large class the teacher progresses directly into whole-class questioning without any provision for peer discussion (line 1 of excerpt 2). In her interviews Cathy attributed the lack of

individualization and her decision not to ask students to collaborate on the need for “efficiency,”

I know the students in the small class, but I also know the large class as well. I just think it saves time in the large class. We don't have as much time so I go a bit quicker. (Cathy)

At the end of excerpt 2 Cathy confirms the answer to her earlier question thereby closing down the interaction with students. In excerpt 1, she takes a different approach by acknowledging the response from Ben and John (line 9), but then initiating a new exchange with two other students; she does not provide the class with confirmation of the answer and continues her dialogue with them.

The issue of time constraints was also evident in Barbara's class. Observation of her lessons revealed she used more open questions in the smaller class and addressed individual students more, yet the number of instances remained quite small, as were the recorded differences between the two classes (see table 3). One of the reasons for this could be the very teacher-centred nature of both classes; interaction was not actively promoted or facilitated by the teacher and students rarely engaged in extended interaction patterns beyond the typical initiate-respond-follow-up/feedback sequence of questioning. In her interviews it transpired that the teacher was quick to close down interactional opportunities by moving on to another subject or question,

I don't really have time for that (extending talk). I want them to get on and talking doesn't help. It is best if I get on with the topic...There is so much to cover. (Barbara)

The reference to “*too much to cover*” reveals Barbara's concerns about curriculum coverage and how it is more important in her eyes than classroom interaction or opportunities for extending the classroom discourse. This also echoes Anna's earlier comment about having “*too much to do*” in terms of covering the curriculum as well as Cathy's need for greater efficiency in her teaching.

5. Discussion and implications

Previous class size research has suggested that teachers do not change their practice from a large class to a smaller one in any significant manner. Interview data from Barbara and Anna in this study largely echo findings from those studies particularly in the teachers' admission that they planned their lessons for both classes in the same way and then taught them both in the same way. However, this study did not rely solely on teacher reports. Instead, the strength of this study lies in the research design of comparing the same teacher's perceptions of teaching in a large and reduced-size class setting with her subsequent practice in those same contexts. Findings suggest that the three teachers did not cast off one philosophical or pedagogical orientation in favour of another as a result of being in a reduced-size class which is in line with conclusions of previous studies but, crucially, evidence from this study points to teachers beginning to individualise their instruction more in reduced-size classrooms and this section sets out to provide a satisfactory reason for this which has thus far not been forthcoming in previous studies. This has implications for teachers' professional development and pedagogy in small or reduced-size classes.

Through detailed classroom observations a number of teaching differences emerged which ran contrary to my own expectations at the outset of the study. Those differences included more group work being utilized in the small classes. Notable differences in the way teachers employed varying question types and extended dialogue with pupils in interactional exchanges were also observed with more examples of these strategies identified in the smaller cohorts. Teachers' claims that the smaller classes allow them to "know" their students better has been evidenced in observations by teachers using students' names more frequently in that classroom context. Finally, more examples of humour from the teacher in the smaller classes have been noted. In sum, teaching in the reduced-size classes mirror more of the key tenets of dialogic teaching (Alexander, 2004) than in the larger classes and suggest that the three teachers are not teaching their classes in exactly the same way. A limitation of this study is the focus on just three teachers, so any conclusions drawn are tentative at best. Nevertheless, the following discussion will attempt to contribute to our knowledge on professional practice in small classes by

addressing the question at the heart of this study: whether teachers really do change their pedagogy, if so why and, under what conditions?

5.1 Explaining the teaching differences in the large and reduced- size classes

Trying to explain and interpret these differences is not easy. The positive reaction of Anna, Barbara and Cathy on being allocated small classes to teach might be seen as a trigger for a different, more effective teaching repertoire because, as we have seen, pedagogy cannot be separated from the human component. All three teachers were teaching a large and a reduced-size class for the first time and so each could be said to be learning from their practice, a key element in how professionals give meaning to their experience. Case study data reveal that the three teachers were learning from their practice as evidenced by their recognition of the psychological benefits of a reduced-size class as well as their ability to personalize their approach more in the smaller classes.

Donald Schon's seminal work on defining the reflective practitioner is helpful at this juncture. Schon, (1987) states that there are two forms of knowing in professional practice: knowing-in-action and reflection-in-action. In the case of Anna, Barbara and Cathy, all appeared to make spontaneous decisions in class which may not have necessarily stemmed from an explicit plan or goal; this is in line with Schon's notion of 'knowing-in-action'. In baseline interviews, teachers spoke of possessing a sense of "freedom" and described "a different type of teaching" in their small classes but it was not always evident from classroom observations that these concepts were being translated into permanent pedagogical change. This may explain why teachers asked more open questions in class, but were unable to provide a pedagogical rationale for doing so during their interviews.

While all three teachers commented on smaller classes providing them with fewer discipline problems, not all were seen to take advantage of a more harmonious classroom environment in terms of concrete pedagogical innovation; Cathy changed the layout in her two classes just once in the observation cycle. Again, while the three teachers acknowledged the benefits of having a smaller class, some of them referred more than

once to prohibitive time constraints that acted as a block to their lesson planning and pedagogical decision making in class. This may also account for why Barbara's classroom discourse was almost the same when communicating with both her classes (see table 3). Cathy also talked about not having enough time in the classroom and while she felt she could ask more questions and personalize her lessons more in the smaller class, she believed that this was not so effective in the large class meaning that students there received a different learning experience and restricted opportunities for participation.

Schon's forms of knowing are both situated and action-oriented, and it is understood that situations of professional practice are often unique and ambiguous, meaning that for a professional practitioner to address a problem he or she must engage in 'reflection-in-action'. Teachers in the case studies here do this by reflecting-in-action as they are teaching both classes. Those reflections often occur in the indeterminate zones of practice as practitioners move towards a determinate situation. Schon (1987, p.40) describes a developmental sequence where practitioners initially learn to recognize basic facts and rules about the situation, then reason from general rules to problematic cases and finally learn to develop and trial action in practice. Anna, Barbara and Cathy can each be said to have reached different stages of this sequence.

The disjuncture between some of the teachers' reported perceptions and their subsequent pedagogical practice suggest they have yet to completely transform Schon's (1987) indeterminate situations into determinate ones. On the one hand, Cathy was the only teacher to state explicitly that she planned different tasks for her small class and that in the same class she adopted a 'no-hands policy' to encourage more participation. Both are examples of her reflection-in-action as both represent alternative pedagogies planned for the unique context of the smaller class. On the other hand, problems persist with Cathy feeling anxious about implementing the same no-hands policy in her larger class for fear that she may lose control of the class. Anna, too, had reflected that she was more 'facilitative' in the smaller class and was able to address individual student learning styles in that context. Unfortunately, there was little evidence of Barbara's reflection-in-action during the observation period in this study.

A closing thought on the three teachers in this study might be that they were *not* teaching large and reduced sized classes in exactly the same way. In fact, there was evidence that some pedagogical changes were being made as a result of the teachers engaging in reflection-in-action. Such a thought offers hope for the development of professional practice in smaller classes as long as it is underpinned by appropriate support measures. Without those measures being in place, it is doubtful that class size reduction on its own will bring about immediate changes in teaching and learning. The final section of this paper will address this issue.

5.2 Implications

Transforming teachers' beliefs, understandings and skills into appropriate classroom pedagogy for classes of varying size must be of central importance in promoting teacher professional development both in Hong Kong and elsewhere. Effective teaching has been linked to reflection, enquiry and opportunities for continuous professional development and growth (Harris, 1998) which raises important questions for school managers and education officials for in order to promote successful small class teaching, management must provide teachers with the physical and mental room for reflection-in-action. In this study, the teachers concerned did not cite any support systems in place in their school for colleagues to share and disseminate good practices on teaching smaller classes. In order to bring about such changes, teachers need the space to examine their own classroom lives and reflect on their classroom practices in order to reduce the gap between theories of teaching and their actual classroom practice. A broad range of collaborative, inquiry-based professional development models which might mediate discussion and learning among teachers including the establishment of critical friends groups, peer coaching, lesson studies, teacher study groups and cooperative development initiatives has been put forward by Johnson (2009). These models would enable professional development to be identified as "learning systematically *in, from, and for* practice. They recognize that participation and context are essential to teacher learning" (Johnson, 2009, p.112).

6. Conclusions

This study was limited in its scope, but the notion of comparing the perceptions and practices of the same teachers working in large and reduced sized classes has been valuable. Tentative conclusions outlined above point to the need for a deeper examination of teachers working with large and small classes through the organization of longitudinal studies that capture the reality and fine details of the classroom context, something which this study was unable to achieve. Such studies would allow researchers to capture critical moments as teachers move from indeterminate zones of practice towards the understanding and shaping of determinate situations in their teaching practice. Research of this kind may also help to address another under researched area in class size, namely what distinguishes more successful small classes from the less successful ones and what best practice in small class teaching might look like.

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Appendix A

Semi-structured interview prompts for teachers

Examples of semi-structured interview questions and prompts used in baseline interviews with teachers in each case study (prior to the commencement of the observation period)

1. What are your views towards class size reduction in relation to your own teaching experience?
2. How do you plan your lessons with both classes?
3. What is your perception of the relationship you have with pupils in the two classes?
4. What are your views on the opportunities, if any, for individualized teaching in the two classes?
5. Do you think class size reduction impacts upon classroom interaction patterns? If so, how and why?
6. Do you think class size is associated with the quality of your teaching, curriculum coverage and pedagogical innovation in the two classes? If so, how and why?

7. What is your perception towards levels of pupil attention and engagement in the two classes?
8. Do you think class size influences cultural factors like face and learner anxiety in your two classes? If so, how and why?

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