

For discussion on 16 February 2004

## **LegCo Panel on Education**

### **Study on Effective Strategies of Class and Group Teaching in Primary Schools**

#### **Purpose**

This paper reports the preliminary findings of the first stage of the Study on Effective Strategies of Class and Group Teaching in Primary Schools (the Study) and advises Members of the second stage of the Study.

#### **Background**

2. At the Panel's meetings in May and June 2003, Members discussed the Study, designed to find out how primary schools might re-deploy their existing resources to implement small class/group teaching and whether there were any good practices that could be adopted by other schools. Subsequently, the first stage of the Study commenced in July 2003 with a questionnaire survey to obtain initial data on existing practices of small class/group teaching strategies being adopted in public sector primary schools. A total of 402 (i.e. 60%) schools responded. We have identified 28 schools which have been trying out various modes of small class/group teaching strategies with a conscious aim to enhance teaching and learning effectiveness. The experience of these 28 "potential exemplars" is further studied through visits and class observations.

#### **The Findings**

##### ***Overall picture***

3. The survey indicates that schools have adopted variable groupings for teaching various subjects at various levels. Major findings include:

- About 9%, 15% and 12% of the student-counts<sup>1</sup> are in classes of 25 or less (which by our standard are small classes) for the Chinese, English and Mathematics lessons respectively.

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<sup>1</sup> 'Student counts' refer to the head counts of students attending each lesson conducted in classes of various sizes. We consider that this presentation should more appropriately reflect the overall picture because the data are expressed by student by lesson; and it is quite often that students in a class may be split or re-grouped in variable sizes for one or several subjects.

- Most of the small class/group arrangements<sup>2</sup> are made just for traditional remedial teaching (Appendix 1). The size of the remedial groups/classes can be very small, with less than 10 students.
- Small class/group arrangements are made mostly for English lessons, followed by Mathematics and Chinese, at Primary 3 and above, probably because student diversity is becoming more obvious as students move up to higher levels.
- An overwhelming majority of schools (about 90%) considered students' abilities when assigning students to small classes.
- Over 80% of the responding schools felt that small class teaching could facilitate:
  - More immediate feedback to students' questions;
  - More opportunities for peer discussion and reporting;
  - Less active students to speak up more often in class; and
  - More class work, thus allowing teachers' prompt assessment on students' progress.

4. Among the 28 schools initially identified from the survey as having adopted small class/group arrangement as part of their teaching strategies, four common modes are in use:

*(a) Cross-class grouping (同級編組) ---*

- Students of the same level are re-grouped into classes of various sizes, with the main purpose of catering for diverse abilities. The predominant criterion for grouping is students' attainments in the subject(s) concerned, normally with the less able ones in the small classes.

*(b) Split-class teaching (分組教學) ---*

- This is to split one class into two or three sub-classes for certain lessons. This is more commonly found at Primary 1 level and for English oral lessons.

*(c) Cross-level subject setting (跨級編組) ---*

- This is to re-group students of different levels according to their performance in a certain subject. However, most of the schools which tried this mode have recently switched to

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<sup>2</sup> Members may wish to note that, to forestall undesirable labelling effect and in line with the curriculum reform and integration approach to education, schools have been encouraged to adopt more flexible arrangements to remedial teaching, such as cross-class/level groupings, whole school approach and co-teaching.

same-level-cross-class grouping, probably due to administrative difficulties (such as timetabling) and labelling effect on students.

*(d) Other modes ---*

- It is a combination of various grouping arrangements for different learning activities, for example, re-grouping students into a very large class for whole-class teaching, thus enabling the formation of small classes for other appropriate learning activities, which would be more effectively conducted in small class.

### ***Perception of Principals & Teachers***

5. In our interviews with school heads and teachers, they generally felt that there were more teacher-student interactions and individual attention in small classes, and that students' discipline and motivation for learning improved. They also remarked that the benefits of small class teaching could not be obvious in one or two years, and some benefits, such as students' attitude towards learning and behavioural changes, could not be easily assessed.

6. Their views on the existing modes of small class/group teaching strategies are as below:

- In consideration of the resource constraints, most of them thought that the less able students should be given the priority to learn in small classes. Others maintained that small class teaching would also help stretch the gifted students.
- Students from families of low socio-economic status (SES), both in terms of academic and discipline needs, could be better taken care of in small classes.
- With more resources, they should be able to extend the scope of small class/group teaching to cover more students, more levels and more subjects. Moreover, teachers might have more time and capacity to develop teaching materials and worksheets suitable for small class teaching.

## ***Lesson Observations***

7. By January 2004, we have managed to visit 10 schools and observed 35 lessons, of which 25 were conducted in small classes (with 25 or less students). The focus of our lesson observations was on whether and how the benefits of small classes as claimed by schools had been achieved, in particular, the improvements in classroom processes/interactions believed to be naturally put in practice in small classes. Specifically, we have tried to observe the frequency and quality of group activities, teacher-student interactions and student performance in class, which would reflect the effectiveness of small class teaching.

8. It is quite interesting to note that there is a gap between what teachers felt about small class teaching and what actually took place. We noted in our class observations that: -

- The interactions were mainly characterized by “close-ended” questions or questions with “model answers”, with little follow-up discussion or exploration of ideas. For example, in some small class lessons observed, the teachers showed pictures and asked questions like, “Do you see the man there?”, “Who is that person?”, “What is this?”, etc. The teachers’ feedbacks were often “Yes” or “No”, and if the students gave the wrong answer, the teacher simply asked other students to try or told them the correct answer. There was little attempt of asking why the students thought so, or asking them to elaborate their ideas.
- Whole-class teacher-centred and unidirectional teaching remained to be the major mode of delivery in the majority (about 65%) of the small class lessons observed.
- The teaching was basically textbook-bound. It was common that the whole class was asked to read vocabulary or sentences together aloud. When the teachers found that some students were unable to pronounce some words correctly, they tended to lead the whole class to read again, seldom did they focus on supporting individual students who had particular difficulties. There was not much support/attention to individual students. It was also common that a few quiet (or less motivated) students did not actually participate in the whole-class reading, and the teachers did not attend to them.
- In about 60% of the small class lessons observed, there was no group work at all. For the remaining lessons which did have some group work,

the main purpose was to do class exercises and cross-checking of answers. For example, students were grouped to work on some calculations and check the answers among themselves. Practice of sentence-making on the basis of given pictures was also common. Genuine interactive and meaningful group work was found in only 5 small class lessons.

- Open-ended questioning, sustained conversation/listening, guided exploration of ideas and peer discussion/interaction, which are indicators of effective small class teaching, were rarely found.

9. Except for the fact that when compared to students in regular/large classes, students in small classes seemed more confident and had more opportunities to raise questions and be picked to respond to teachers' questions, there was no significant difference in the nature and quality of teacher-student interactions between small classes and regular/large classes.

### **Implications on the Study**

10. The above findings from visits have the following implications on the way forward for the next stage of the Study:

- (a) Many research studies concluded that curriculum adaptation and change in teaching pedagogies are essential to the success of small class teaching. As indicated by our lesson observations, most of the teachers observed did not seem to be sufficiently ready for effective small class teaching. They relied heavily on the textbooks and their teaching approach was basically teacher-focussed and unidirectional. There is a need for professional development of teachers so that they may master the skills and pedagogies of small class teaching;
- (b) Small class could be flexibly adopted for holding different learning activities and for teaching different subjects. It may not be necessary to keep the same students in a small class for all lessons throughout the school year;
- (c) Schools visited re-affirmed that, given the inadequate support at home, students from low SES families would be more likely to benefit from small class teaching.<sup>3</sup> These students usually have greater difficulty in learning English and Mathematics and their

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<sup>3</sup> This coincides with findings from overseas research studies like Project STAR and Wisconsin's Student Achievement Guarantee in Education (SAGE).

learning problems become more acute when they proceed to senior levels. This explains why most schools have arranged small classes for remedial purpose at P3 or above levels. However, such practices are seemingly curative rather than preventive. Corroborated by earlier studies which indicate the lacklustre effect of remedial teaching, this may suggest that intervention at P3 and beyond may be somewhat late. Overseas experiences show that small classes are most beneficial to entry levels and there is no evidence that small classes introduced later in students' school lives are as effective.

In sum, our conclusion is that, to optimise the educational benefits of small class teaching, teachers ought to be given professional support and the initiative should be focussed to benefit students who are in greatest need for early intervention.

## **The Second Stage of the Study**

11. Taking into account the above, and the fact that not many suitable good practices of small class teaching could be identified in the first stage of the Study for dissemination to schools, we consider it desirable to re-focus the second stage of the Study to try out small class teaching in some selected schools, subject to the availability of resources. The revamped experimental study is guided by the following considerations derived from the findings of the first stage of the Study and those of overseas research:

- Benefits of small class teaching are most significant in the early years of education and the benefits could be sustained even when the students return to regular classes at senior levels;
- The effect of small classes is most affirmative for students from socially disadvantaged families (such as the ethnic minorities, those with low SES);
- To maximise the benefits of small classes, teachers should adapt the curriculum and change their teaching pedagogies.<sup>4</sup>
- Although there has been no conclusion on the optimum class size (which is usually complicated by factors like different cultures,

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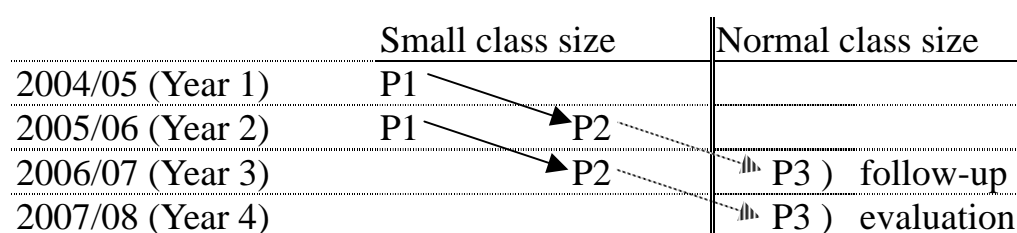
<sup>4</sup> This is best shown by the Texas' experience where 2 of 15 low-performing schools with reduced class size showed dramatic gains with achievement and attendance, while the other 13 schools remained extremely low. The main factor was that the two successful schools combined reduced classes with other changes, such as new curricula, teaching methods, etc.

students' ability, age and backgrounds), a recent research conducted in England<sup>5</sup> showed that, 25 may be an important number for class size.

## The Study

12. Details of the project are as follows:

- Participating schools would be given additional time-limited resources to enable them to operate small classes at the size of about 25 students per class, starting at P1 and then proceeding to P2 for two consecutive cohorts. The students will return to regular classes at P3. The progression is illustrated below: -



- The project, though lasting for four years, will be reported annually. The interim findings would provide useful reference for our consideration of the way forward for small class teaching in Hong Kong.
- We would focus small class teaching on Chinese, English and Mathematics lessons, which account for about 60% of the total lesson time<sup>6</sup>. Participating schools may split their regular P1 or P2 classes into small classes for the three subjects. As the situation for different schools may differ, principals and teachers are expected to exercise professional judgement and flexibility when deploying small class teaching strategy. For instance, the need for small class approach may be greater for oral than for computer-assisted listening practices.
- As small class teaching would be conducted in about 60% of the total lesson time of a class, a cash grant of \$290,000 per annum<sup>7</sup> will be

<sup>5</sup> Professor P. Blatchford, The Class Size Debate, Is Small Better? 2003

<sup>6</sup> Academics in the field of classroom learning are of the view that, given the different nature of learning, there should be flexibility in adopting variable class sizes. For example, regular class size may be suitable for direct instruction (such as those concerning mathematical procedures, historical facts, using maps, etc.) and smaller classes for "learning through doing" (such as problem-solving, extended writing, etc.)

<sup>7</sup> The proposed cash grant is calculated by the mid-point salary of Certificated Master/Mistress (CM) plus 5% provident fund (PF) contribution.

provided for each additional small class. The grant may flexibly be used by schools for employing additional teaching staff.

- Professional support by local and non-local experts in the form of workshops and school visits will be arranged.

### Selection of participating schools

13. Schools will be invited to join the study on the basis of the following criteria:

- (a) students' SES by making reference to the number/proportion of students receiving grant under the Textbook Assistance Scheme or Comprehensive Social Security Assistance (CSSA);
- (b) the students' performance;
- (c) the number/proportion of New Arrival Children (NAC) from both the Mainland and other countries; and
- (d) the number/proportion of ethnic minority students.

The intention is to identify schools with a sizeable portion of students from disadvantaged background and thus in greater need of more individual support and attention at school. The schools should also demonstrate willingness and readiness (e.g. their experience in curriculum development, teachers' professional capacity) to try out small class teaching. Given resource constraint and the desirability of giving proper professional support to participating schools, we have to limit the number of participating schools to around 40.

### Implementation and evaluation

14. We would invite public sector primary schools in March 2004 to apply to join the scheme, which will commence in the 2004/05 school year, starting with P1 students and progressing to P2 in the following year. School-based support will be provided, and briefings and workshops will be organized for teachers before the start of the scheme and at intervals throughout the scheme.

15. The learning process and outcomes will be assessed using both quantitative and qualitative instruments, such as assessment tests, lesson observations, questionnaire surveys, interviews, case studies, etc. The



Steering Committee comprising local academics, primary school heads and Government officials will advise on the Study throughout its duration. An international expert in the field will be appointed as the consultant of this Study. S/he will advise on the conduct of the Study and work with a team of local and non-local experts to provide support and training to teachers.

16. The scheme would complete by the end of 2006/07 school year and the report ready by early 2008. Nevertheless, we would follow up the two cohorts of students longitudinally beyond P2 to see whether the benefits of small class teaching at P1 and P2 could be sustained as they move up to higher levels. In particular, we are interested in gauging if the students who have benefited from small class teaching at P1 and P2 compare well in terms of their affective and academic domains with students of similar background in other schools which have not participated in the study.

#### Resource Implications

17. Assuming participation of 40 schools involving a total of around 70 additional classes, we estimate that we shall need to redeploy around \$80 million from within the education envelope for 2004-05 to 2007-08. In addition, we shall also need to redeploy about \$5 million to procure professional support and training for teachers.

#### **Advice Sought**

18. Members are invited to note the findings of the first stage of the Study, and advise on the conduct of the second stage of the Study.

Education & Manpower Bureau  
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## Appendix I

Percentage of traditional remedial classes among all small classes

	Traditional remedial classes (P.1 to P.6)		
Class Size	Chinese	English	Mathematics
at or below 5	83.06%	89.49%	91.00%
at or below 10	88.66%	90.86%	93.26%
at or below 15	73.09%	77.07%	82.25%
at or below 20	52.77%	54.07%	63.78%
at or below 25	30.84%	38.02%	41.63%