

For discussion on 13 May 2010

Legislative Council Panel on Education

Report of the Study on Small Class Teaching

Purpose

This paper reports the findings of the Study on Small Class Teaching (the Study) and its recommendations on the support for teachers in the implementation of small class teaching (SCT) in public-sector primary schools starting from Primary One (P1) in the 2009/10 school year.

Background

2. We last reported to this Panel in 2007 the interim findings of the Study, which started in the 2004/05 school year and was completed in the 2008/09 school year. Upon completion of the Report of the Study, we provided Members with copies of the Executive Summary of the Report and uploaded the full Report onto the Education Bureau homepage in December 2009 for public consumption.

3. The objectives of the Study are to assess the benefits of SCT in the local context in terms of both academic and affective outcomes, with a view to identifying the teaching strategies and modes of support necessary for maximising the benefits of SCT.

4. The Study has covered 37 primary schools. The first cohort (Cohort 1) of pupils studied in small classes from P1 to P3 and returned to regular classes in P4, while the second cohort (Cohort 2) studied in small classes from P1 to P2 and returned to regular classes in P3. Such design enabled us to assess the sustainability of the effects of SCT in the early years of primary schooling when these two experimental cohorts returned to regular classes in P4 and P3 respectively and to compare the small class effect between the two-year and three-year periods. In order to explore in greater depth the factors which either help or hinder teachers in their attempt to modify existing classroom practice in

ways that maximise the advantages of SCT, 6 out of the 37 participating schools were chosen for case study. Apart from using data collected from the regular classes of the 37 participating schools, the Study has included a further control by studying 15 additional schools which were selected from the same districts of the 37 participating schools and had comparable pupil academic performance but with class sizes bigger than 30.

5. Having taken into account overseas research studies which indicate that SCT has more significant effects on pupils with weak family support and in their early years of schooling, the Study has also included the evaluation of 2 cohorts of P1 pupils admitted to 29 schools participating in the SCT Scheme for primary schools with a high concentration of disadvantaged pupils in the 2005/06 and 2006/07 school years so as to supplement the findings of the SCT Study.

6. To employ both qualitative and quantitative data to assess the learning process and learning outcomes, various instruments with different objectives have been adopted at different intervals. For instance, the pupil and parent questionnaires have obtained a comprehensive picture of the background and disposition of the experimental pupils. The teacher questionnaires have been used to collect teachers' views on the advantages of a small class setting and to identify problems that may have arisen during the implementation of SCT under the Study. The systematic classroom observations of about 400 lessons and the administration of the standardised tests in Chinese, English and Mathematics have served to measure pupils' classroom activities and to link these with academic performance. In sum, in most years of the Study, some 700 classes were tested in Chinese, English and Mathematics. About 20,000 pupils took part in P1, 23,500 in P2, 20,500 in P3 and 11,000 in P4. Of the total sample, 53.9% of the initial P1 sample was in small classes, 27.2% from the regular classes in the same schools and 18.9% from the reference schools.

Findings of the Study

7. The findings of the Study have broadly covered three areas, namely teaching approaches in a small class setting, success factors of maximising the benefits of small class setting in schools, and pupil performance in relation to the teaching approaches as experimented.

Teaching approaches

8. Notwithstanding their lack of experience in SCT, teachers in the 37 experimental schools with a small class setting provided in accordance with the design of the Study were found to experiment more in their choice of teaching approaches, indicating that teachers were more willing to adapt their teaching modes to meet the needs of the pupils. A cluster analysis of the teacher observation data in the Study yielded four distinct teaching approaches. The first of these, named *sustained individual and pair enquiry*, involving teachers who asked the highest number of open, challenging questions, made more statements of idea and offered greater amounts of informing feedback. Their interactions with pupils took place either individually or in pairs and were more often sustained into the next 30 second time unit. Another common approach adopted by teachers in the experimental schools was the *whole class instruction*, which represented a more traditional form of teaching, with teachers spending nearly two thirds of the time talking to the whole class without any particular child in focus. A large proportion of this time was spent making statements of fact, giving directions and listening to pupils read or sing in unison. There was also another approach employing a high proportion of whole class teaching, but the focus was on questioning of all kinds rather than statements. Teachers in this cluster were labeled *whole class questioners*. The last approach, categorised as *group task monitoring*, was characterised by teachers spending much time listening or watching pupils when they were working in pairs or groups. These teachers gave the highest number of task directions which often involved setting up and organising work in groups. Compared with teachers in regular classes where whole class instruction was typically used, those in small classes as indicated by the above descriptions asked more challenging questions, more often used pair and group work, and had more sustained engagement with individual pupils. The overall results as evidenced by lesson observations, questionnaire surveys and case study were encouraging as pupils' performances were more even across the ability range in a small class setting whereas in regular classes it was the more able groups who tended to show most improvement.

9. Although these four distinct teaching approaches in a small class setting were identified, none appeared to offer an outright advantage in terms of attainment as revealed from the tracking of the academic performance of the

pupils involved through the standardised tests in Chinese, English and Mathematics administered at the beginning and end of each school year during the period from 2004/05 to 2007/08. That said, the paradigm shift demonstrated by teachers of experimental schools suggested more frequent use of those teaching practices that encouraged more thoughtful discourse and greater pupil participation through extended questioning and a mix of individual and pair or group work, designed to promote enquiry, could improve pupil's orientation to learning and would serve as a good start to optimise the benefits of small classes.

School success factors

10. While it was found that teachers felt more relaxed and enthusiastic when teaching a smaller class, it was worth-noting that in schools with the most successful combined attitude and attainment profiles, principals were more experienced, held firmer beliefs in the value of SCT for improving pupil attainment and took a more active role in curriculum planning and teacher learning development. They also supported teachers by freeing them from lessons/duties for professional development.

Pupil performance

11. The types of pupils identified in the Study bore close similarity to the pattern of behavior exhibited by pupils in other relevant overseas studies. 43.8% of experimental pupils were *solitary workers*, i.e. being on task for almost 95% of the lesson by rarely interacting with the teacher or their peers. 22.4% were *intermittent workers* who largely worked on their own but tended to become distracted when the teacher was engaged elsewhere in the classroom. The industrious workers, constituting 23.3% of the experimental pupils, were *active collaborators* since they were more often part of a group. These pupils also concentrated on the task for 90% of the lesson. The remaining pupils, amounting to 10.5%, were *attention grabbers* with the lowest level of on-task behaviour. They either sought or received more of the teachers' undivided attention than other pupils in the class and were more often moving around the classroom and receiving more praise than other pupils, mostly on those occasions when they were seen to be applying themselves to their tasks. When the above distribution of pupil types was examined, few differences were found

between the size of the class or the year. Correspondingly, the gains in any year fluctuated randomly between the experimental class, the controls and the reference group. Cohort 1 pupils showed no positive effect in either P1 or P2 but these pupils did better in P3. This advantage, however, was lost when they returned to normal classes in P4. Pupils in Cohort 2 out-performed those in normal classes in P1. This advantage, however, was lost in P2 although these pupils regained lost ground in P3 when they returned to normal classes. In other words, it was suggested that over time, the cumulative effect of SCT on pupils when progressing to higher levels and the sustainability of the effects of SCT on pupils would be realised, provided that the encouraging features as mentioned in paragraphs 8 to 9 continued to be developed.

12. The evidences of SCT in terms of improvement in the affective domain such as motivation, self esteem and attitudes towards the three core subjects (i.e. Chinese, English and Mathematics) were minimal in both experimental schools in the Study and in the SCT Scheme for schools with a high concentration of disadvantaged pupils. That said, there was evidence to suggest that a small class setting might be beneficial to boys rather than girls of disadvantaged backgrounds, particularly in Chinese and Mathematics initially. However, a condition for making progress is that the pupils must not be too far behind on entry to primary school.

Recommendations of the Study

13. Given the fact that different forms of professional support had to be provided, because teachers' requirements changed as their involvement in the Study increased over time, particularly at the point where teachers began to take ownership for changing their classroom practice, it was generally realised that a small class setting alone would not necessarily bring about improvement in academic performance. It was crucial for schools and teachers to consider how to better utilise a small class setting to promote teaching for understanding by increased pupil participation through extended whole class discussion, together with the increased use of pair and group work, thus facilitating the transition from the current emphasis on whole class instruction.

14. Premised on the above, the professional development of teachers should be framed around six broad principles aimed at developing pupils'

understanding, viz. (i) communicating learning goals to the class in terms of the learning process; (ii) providing more thinking time during questioning; (iii) boosting participation during class discussions; (iv) developing cooperation between pupils by pair/group work; (v) giving feedback which helps pupils sort out their own mistakes; and (vi) using assessment to inform future instruction.

15. To facilitate teachers' paradigm shift in pedagogy, the approach of "Learning Circles" should be promoted for both inter-school sharing across subjects and intra-school sharing of pedagogical issues, which focuses at any one time on a specific aspects of pedagogy, allows teachers to observe and evaluate each other's classroom practice and thereby enhances the participants' professionalism. In fact, "Learning Circles" have been well received with the number of participants increasing during the period of the Study.

16. Refinement to school administration in individual schools such as allocating teachers to a limited number of year groups may enable teachers to have more opportunities to teach more than one class in any particular year group. This would facilitate teachers' consolidation of experiences in deploying effective teaching strategies to cater for learners' diversity. More flexi-timetables would enable teachers to plan and implement lessons to allow more pupil activities and communication in class.

Way Forward

17. We are committed to the implementation of SCT in primary schools and have undertaken to invest significant resources for sustaining its implementation in future years to come. Based on the findings and recommendations of the Study as reported above, the Education Bureau has framed the professional development programmes including "Learning Circles" for collaborative lesson planning, workshops on effective strategies such as extended whole class instruction and increased use of pair and group work etc., in order to support teachers for the implementation of SCT in public-sector primary schools starting from P1 in the 2009/10 school year. The in-service training courses for teachers have been rolled out in 2009 with provision of supply teachers as appropriate and will spread over a period of six years. Details of the professional development programmes have been set out at the Annex. At the recent professional exchange forum to support schools and

teachers, the primary schools implementing SCT have indicated that in the light of the recommendations of the Study, they will focus their efforts in the 2010/11 school year on putting in place enhanced teaching plans and related materials on one of the six broad principles mentioned in paragraph 14 above and compiling relevant materials for reference of other schools.

Conclusion

18. Members are invited to note the findings and recommendations of the Study and our professional development and support measures for teachers to implement SCT in primary schools.

Education Bureau

May 2010

Focuses of the Annual SCT Professional Development Programmes

The annual professional development programmes spreading over a period of six years as from 2009-10 will cover the following areas:

1. Diversified modes of in-service teacher professional development courses on Chinese Language, English Language, Mathematics and General Studies commissioned to tertiary institutions
2. Learning Circles for teachers of Chinese Language, English Language, Mathematics and General Studies to attend periodical workshops as well as to meet regularly to observe lessons at one another's schools, followed by review discussions
3. School networking under the Professional Development Schools Scheme for professional support as well as sharing of experiences and resources at monthly intervals
4. Study tours for teachers to share views and experience with front-line education workers in the Mainland or overseas on implementation strategies and support measures as well as other contextual factors contributing to the smooth implementation of small class teaching, and to conduct school visits to observe effective teaching pedagogies in small classes through lesson observations
5. Workshops on effective strategies to maximise the benefits of small class teaching for Chinese Language, English Language, Mathematics and General Studies
6. Seminars for school heads and teachers overseeing the implementation of small class teaching in individual schools to help them realise leadership for learning with a view to optimising the benefits of a small class context to enhance the effectiveness of learning and teaching