

Developing a framework of implementing Cooperative Learning in Hong Kong basic education

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Small Class Teaching in Hong Kong

In his 2007-2008 Policy Address¹, the Chief Executive of Hong Kong SAR announced that Small Class Teaching (SCT) would be implemented in Primary One in public sector primary schools by phases starting from the 2009 school year. In the government documents for meeting at the Legislative Council Panel on Education discussing the progress of the Study on SCT², it is suggested that teachers should try to identify the teaching strategies and support necessary for maximizing the benefits of SCT in terms of both academic and affective outcomes.

Possible classroom strategies for SCT

There is no SCT teaching method per se. SCT, as an innovation, can only have an impact when there is a change in pedagogy. It is suggested that classroom strategies for small class are³: a) *improving instruction and achievement*; b) *establishing a productive classroom environment*; c) *effective assessment techniques*. They concluded that small classes offer teachers more time to monitor student progress on an ongoing basis and make it more practical to employ hands-on activities. And there are research studies showing that CL works well in small-class teaching environment and there are experiences from overseas⁴. However, how CL can be implemented in local schools and classroom to support SCT remains an area of enquiry.

Existing support to schools for SCT

From the government side, there have been professional development activities organized for the implementation of small class⁵: questioning techniques and implementation, cooperative learning, high order thinking, brain-based learning. ⁶It is recorded in the Centre of Research of Small Class Teaching (CSCT) of the Hong Kong Institute of Education from 2004 to 2008, the majority (72.6%) of the

¹ 2007-2008 Policy Address <http://www.policyaddress.gov.hk/07-08/eng/p88.html>

² EMB (February 2007). LC Paper No. CB(2)1041/06-07(01) for discussion on 12 February 2007, LegCo Panel on Education: Progress of the Study on Small Class Teaching

³ Pannozzo, G. M., & Finn, J. D. (2002). Professional Development and Support Needs of CSR Teachers. J. D., Finn, & M. C. Wang, (Ed). *Taking small classes one step further*. Greenwich, Conn. : Information Age Pub..

⁴ Gillies, R. M. (2007). *Cooperative Learning: Integrating theory and practices*. Los Angeles, Calif. : SAGE Publications.

⁵ Education Bureau website: Professional Development Activities for Small Class Teaching
<http://sc.edb.gov.hk/gb/www.edb.gov.hk/index.aspx?langno=1&nodeid=5979>

⁶ Centre for Development and Research in Small Class Teaching website: School support
<http://www.ied.edu.hk/csct/support.html>

professional support activities organized to support SCT was on CL, the others were the concept and implementation of small class, questioning techniques, high order thinking and catering for learning diversity.

Need Analysis Survey

To insure that the framework incorporates views of teachers, we have also relied upon preliminary findings from our survey. Participants involved in our recent professional support activities were invited to survey, which explored their need in SCT, views towards CL as strategies to support SCT, and perceptions of the conditions in schools that inhibited their efforts to implement CL. A total of 272 returns from primary and secondary teachers were collected.

The following questions were asked in the survey:

- To meet the implementation of SCT in 2009, what enhancements do teachers need for teaching?
- What do you expect the effect of implementing CL to classroom teaching and learning?
- What are the difficulties and obstacles in implementing CL?
- What are the most effective solutions to these difficulties and obstacles?
- How would you suggest to your school in the implementation of CL?

Teachers responded that they needed to enrich themselves in the following three perspectives: catering for learning diversity, curriculum adaptation, and group work. Teachers expected the implementation of CL would enhance students' interest in learning, cater for learning diversity, and improve cooperative and social skills among students. Research findings indicate that ⁷effective CL teams will be engaged when they have a genuine interest in what they learn and they understand the value of CL, whereas, ineffective CL teams are often characterized by not well at working independently, and they preferred having a fun time instead of learning. On the other hand, effective CL processes depend on a combination of students' goal preferences and the appropriate learning context; meanwhile, the quality of CL depends on students' general abilities to cooperate⁸. Hence, to teach students the skills and knowledge allowing them to cooperate effectively as well as to the desirability of teachers guiding students' CL processes are prominent in CL settings, and match with the expectation of teachers in using CL.

Teachers' views on the difficulties with CL will be the tight curriculum, insufficient time in preparation, and teachers' insufficient knowledge in CL. The ways they suggested to solve the problem were: a more school-based approach with support from the school in terms of time-tabling and resources, curriculum adaptation and support from experts and professionals. Regarding teachers' insufficient knowledge in CL, CL is complicated. Little understanding of CL will lead to the confusion with group

⁷ Hijzen, D., Boekaerts, M., & Vedder, P. (2007). Exploring the links between students' engagement in cooperative learning, their goal preferences and appraisals of instructional conditions in the classroom. *Learning and Instruction*, 17 (2007), 673-687.

⁸ Hijzen, D., Boekaerts, M., & Vedder, P. (2007). Exploring the links between students' engagement in cooperative learning, their goal preferences and appraisals of instructional conditions in the classroom. *Learning and Instruction*, 17 (2007), 673-687.

work and the flexibility in using it. Meanwhile it was reported that ⁹teachers' lacking on clarity on the purpose of the lessons and the tasks given to students generated ineffective CL teams. It is beyond all doubt that support from experts and professionals is advantageous to solve this problem.

CL as a teaching and learning strategy for SCT

A large research literature ^{10, 11, 12} indicating that CL has positive effects on pupil academic and social outcomes. Conversely, ^{13, 14} In UK schools which have consistently shown that little genuine group work takes place and still less is of good quality. A replication study two decades later showed only a slight increase in pupil social interaction in favour of task-related exchanges within groups. ¹⁵ Even then, these task-focused interactions between pupils mainly involved exchanging information rather than discussing ideas. Two main reasons for this state of play in UK schools are: first, teachers typically plan for their interactions with pupils, but not for interactions between pupils. ¹⁶ There is thus a need to revise theories of classroom learning and approaches to pedagogy. Second, the lack of genuine good-quality group work. This may due to little practical advice for teachers to use and adapt group work to their particular contexts. Teachers need to be able to use flexibly a variety of types of cooperative learning, and to be able to adapt for use in different contexts to benefit pupils¹⁷.

Teachers' concerns about group work include: the loss of control, increased disruption and off-task behaviour ¹⁸; beliefs that children are unable to learn from one another ¹⁹; and beliefs that group work is overly time consuming and that assessing children when working in interactive groups is problematic²⁰. A particular concern held by many teachers is that it is only the more academically able who profit from group work or that they get held back by having to work with pupils who have more ground to make up²¹. Teachers also hold the view that some pupils, particularly boys, will misbehave during group work and this will adversely affect others, the quality of group work and its performance.

⁹ Hijzen, D., Boekaerts, M., & Vedder, P. (2007). Exploring the links between students' engagement in cooperative learning, their goal preferences and appraisals of instructional conditions in the classroom. *Learning and Instruction*, 17 (2007), 673-687.

¹⁰ Webb, N. M. & Palincsar, A. S. (1996). *Group processes in the classroom*, in: D. C. Berliner & R. C. Calfee (Eds) *Handbook of educational psychology* (New York, Macmillan), 841-873.

¹¹ O'Donnell, A. M. & King, A. (Eds) (1999) *Cognitive perspectives on peer learning* (Mahwah, NJ, Lawrence Erlbaum).

¹² Slavin, R., Hurley, E. A. & Chamberlain, A. (2003) Cooperative learning and achievement: theory and research, in: W. M. Reynolds & G. M. Miller (Eds) *Handbook of psychology: educational psychology* (New York, Wiley), vol. 7, 177-198.

¹³ Galton, M. J., Hargreaves, L., Comber, C., Wall, D. & Pell, A. (1999) *Inside the primary classroom: 20 years on* (London, Routledge).

¹⁴ Baines, E., Blatchford, P. & Kutnick, P. (2003) Changes in grouping practices over primary and secondary school, *International Journal of Educational Research*, 39, 9-34.

¹⁵ Galton, M. J., Hargreaves, L., Comber, C., Wall, D. & Pell, A. (1999) *Inside the primary classroom: 20 years on* (London, Routledge).

¹⁶ Blatchford, P., Kutnick, P., Baines, E. & Galton, M. (2003) Toward a social pedagogy of classroom group work, *International Journal of Educational Research*, 39, 153-172.

¹⁷ Baines, Ed, Blatchford, P. & Chowne, A. (2007). Improving the effectiveness of collaborative group work in primary schools: effects on science attainment. *British Educational Research Journal*, 33:5, 663 – 680.

¹⁸ Cohen, E. G. & Intilli, J. K. (1981) *Interdependence and management in bilingual classrooms*. Final Report No. NIE-G-80-0217 (Stanford, CA, Stanford University, School of Education).

¹⁹ Lewis, J. & Cowie, H. (1993) Cooperative group work: promises and limitations. A study of teachers' values, *Education Section Review*, 17(2), 77-84.

²⁰ Plummer, G. & Dudley, P. (1993) *Assessing children learning collaboratively* (Chelmsford, Essex Development Advisory Service).

²¹ Baines, Ed, Blatchford, P. & Chowne, A. (2007). Improving the effectiveness of collaborative group work in primary schools: effects on science attainment. *British Educational Research Journal*, 33:5, 663 – 680.

The problems related to pupils suggest a need for improved pupil training in group-work skills under normal classroom conditions²². However, little improvement will take place unless researchers work in partnership with teachers so that these concerns are fully taken into account.

In Hong Kong, the teachers had reservations in using group work because they were under many constraints at schools²³. First, it is the size and setting of the classroom; and second, it is the tight curriculum. Third, the head of school might query the ability of the teacher in classroom management when the pupils inevitably produced noise during group work. Fourth, the parents might think that the teachers were lazy. Not all the teachers used heterogeneous grouping. Nor did they recognize the importance of explicitly teaching the pupils the necessary social skills for the group tasks. And the motivation of the teachers to use group work will not increase if the constraints still linger on.

Proposed framework of implementing CL in basic education settings

Taking into account of the potential obstacles in structural, human resources and cultural perspectives in implementing new educational perspectives and teaching strategies, the possible classroom strategies for SCT, the needs of teachers, as well as CL as one of the possible classroom strategies, a framework is proposed with the elements of a school-based structure, a focus on pedagogy level to facilitate teachers' daily teaching, an integrated use of the different CL schools and an integration of CL into subject teaching to enhance teaching and learning.

Integrated framework of CLs

The scope of cooperative learning is very broad and thus takes time to learn²⁴. Each School of cooperative learning has its merits and constraints as well as its uses. They are complementary rather than mutually exclusive. In order to get the most benefits from cooperative learning, teachers have to learn to use the full array of different Schools. There is research showing the benefits of having students trained with small group skills before actually starting CL²⁵. Yet, the teachers did not recognize the importance of explicitly teaching the pupils the necessary social skills, and group processing was rarely conducted to enhance achievement²⁶. Thus, the teachers failed to satisfy Johnson's requirements for cooperative learning.

²² Baines, Ed, Blatchford, P. & Chowne, A. (2007). Improving the effectiveness of collaborative group work in primary schools: effects on science attainment. *British Educational Research Journal*, 33:5, 663 – 680.

²³ Chan, K.W., & Galton, M. (1999). A study of the attitudes of teachers and pupils towards the use of group work in Hong Kong primary schools. Paper presented at the 43rd Annual Conference of the Comparative and International Education Society. Toronto, 1999.04. (ERIC Document Reproduction No.435 609).

²⁴ Chan, K.W. (2008). *School-based staff development in cooperative learning*. Paper presented in the IAIE/IASCE/CESEDI conference "Cooperative Learning in Multicultural Societies: Critical Reflections", Turin, Jan 19-22 2008.

²⁵ Prichard, J. S., Bizo, L. A., & Stratford, R. J. (2006). The educational impact of team-skills training: Preparing students to work in groups. *British Journal of Educational Psychology*, 76, 119-140.

²⁶ Chan, K.W., & Galton, M. (1999). A study of the attitudes of teachers and pupils towards the use of group work in Hong Kong primary schools. Paper presented at the 43rd Annual Conference of the Comparative and International Education Society. Toronto, 1999.04. (ERIC Document Reproduction No.435 609).

The foundation to Teaching and Learning with Cooperative Learning:

Theme	The Major Schools of Cooperative Learning	
	Teaching Strategy of Cooperative Learning	Cooperative Learning Environment
Teaching Strategy & Cooperative Learning	<u>Spencer Kagan (2007)</u> Structures of CL: – “Numbered Heads Together”, “Roundtable”, “Pairs Check”, “Three-Step Interview”,....	<u>Johnson & Johnson (1994)</u> Elements of CL: 1. Positive Interdependence 2. Individual Accountability / Personal Responsibility 3. Face-to-Face Promotive Interaction 4. Interpersonal and Small-Group Skills 5. Group Processing
	Lesson design of Cooperative Learning	Cooperative Learning Environment
Lesson design & Cooperative Learning	<u>Robert Slavin (1995)</u> Structures of CL: – Jigsaw II – STAD (Student Teams-Achievement Divisions) – TGT (Teams-Games Tournament) etc.	<u>Johnson & Johnson (1994)</u> Elements of CL: 1. Positive Interdependence 2. Individual Accountability /Personal Responsibility 3. Face-to-Face Promotive Interaction 4. Interpersonal and Small-Group Skills 5. Group Processing

Integrating CL into subjects

How can the theories and strategies of CL inspire educators in teaching and learning²⁷? This can only be effective with an analysed framework which helps teachers understand the scenario, to enhance their decision making with teaching situations, to reflect on their practice unceasingly and to become internalized the use of the strategy. However, the present CL theory does not build up well in this way. Though there are different structures and strategies of CL, the use of CL in different subjects is not well developed. Moreover, different subjects have its own learning pattern, and a stereotype of CL may not be applicable to all subjects.

CL may not be suitable for all learning tasks²⁸. Generally, simple knowledge and skill learning tasks do not need CL. It is believed that enquiry thinking practice (which require students to make some valuable predictive inquiry), exploratory practice (which require student to have multiple thinking to find out different types of solutions and ways to solve problems), comparative analytic practice (require students to compare and analyze different solutions for the best available one), and multi-step practices (complicated design that individual student is difficult to solve by him/herself and need to cooperate with others). All these learning tasks require the use of cooperative knowledge and metacognition for learning are more suitable for CL.

²⁷王坦 (2001)。《合作學習——原理與策略》。北京：學苑出版社。

²⁸柳汐浪,(1998)。〈分層推進與合作學習——面對差異的兩項革新試驗〉。《教育研究與實驗》。1998(3)。

²⁹Stevens and Slavin (1995) argued that when cooperative learning is the primary mode of instruction and when it is integrated with effective instruction in reading, language arts, and mathematics and with changes in school organization and with peer coaching, it is effective in producing higher student achievement.

(i) *Integrating CL with Science inquiry learning*³⁰

Relatively speaking, group work was used more often in General Studies than in other subjects because of the topics or activities in General Studies that lent themselves to be more effectively carried out in the form of group work than other forms of organisational strategies such as whole class work, pair work and individual work³¹. Nevertheless, inquiry-oriented teaching and learning activities are the most difficult to master³²; Teachers rarely involve students in activities that require them to express or demonstrate their understanding of key concepts and procedures. Group tasks will determine how students interact together³³, for open and discovery-based group tasks require students to interact if they are to resolve the problem at hand.

(ii) *Integrating CL with Mathematics problem solving*

In Math Solution approach, teacher cannot talk a child into learning³⁴. Teachers cannot tell a child to understand. Learning is an internal process that happens in individual ways and on individual time schedules. Teachers need to plan instruction that is responsive to the maturity level of the students, provides for experiences with physical materials, and promotes social interaction in the classroom. When students are engaged in a cooperative problem-solving lesson³⁵, they need to understand the problem situation, work toward finding solutions, and evaluate the solutions they find. Three specific teaching techniques, introducing, exploring, and summarizing are useful to achieve these stages.

(iii) *Integrating CL with High Order Thinking in literature:*

E³⁶An avalanche of literature has emerged on the nature of thinking and how to teach it. Much of this scholarship is oriented toward general thinking strategies rather than the teaching of thinking in particular school subjects. Thus, it is need to work toward a general framework that incorporates major theoretical orientations along with the views of teachers. To be helpful, the framework should include a conception of higher order thinking that is responsive both to the general literature on thinking and to

²⁹ Gillies, R. M. (2007). *Cooperative Learning: Integrating theory and practices*. Los Angeles, Calif. : SAGE Publications.

³⁰ Developed by Winnie SO & Justina Ip

³¹ Chan, K.W., & Galton, M. (1999). A study of the attitudes of teachers and pupils towards the use of group work in Hong Kong primary schools. Paper presented at the 43rd Annual Conference of the Comparative and International Education Society. Toronto, 1999.04. (ERIC Document Reproduction No.435 609).

³² Fullan, M., & Watson, N (2000). School-Based Management: Reconceptualizing to Improve Learning Outcomes. *School Effectiveness and School Improvement*, 11(4), 453–473.

³³ Gillies, R. M. (2007). *Cooperative Learning: Integrating theory and practices*. Los Angeles, Calif. : SAGE Publications.

³⁴ Neil, D. (1990). *Cooperative learning in mathematics: a handbook for teachers*. Menlo Park, Calif: Addison-Wesley Pub. Co.

³⁵ Neil, D. (1990). *Cooperative learning in mathematics: a handbook for teachers*. Menlo Park, Calif: Addison-Wesley Pub. Co.

³⁶ Newmann, F.M. (1990). Higher order thinking in teaching social studies: a rationale for the assessment of classroom thoughtfulness. *J. Curriculum Studies*, 1990, 22(1):41-56.

the particular content of Languages. To promote students' higher-level reasoning and critical thinking³⁷, as well as metacognition, requires the two steps of carefully structuring: cooperation among students, and academic controversy within the cooperative groups. Cooperation, controversy, cognition, and metacognition are all intimately related.

Future Direction

Developing a school network for learning community

It is suggested that appropriate and necessary resources are required in CL classrooms³⁸, and a network for teachers within the same school or among different schools will help to share cooperative learning activities materials and good practices.

Building in research element

To conclude, in developing and implementing the framework of CL in local schools, the concern about the culture of teacher and students in different schools, the experiences of the teaching and the learning process in varied classrooms are important for a better understanding of the role of CL in this new educational initiative of SCT. There is need to examine the discrepancies and problems in practicing CL in local classrooms, and seek for better solutions. More importantly, to echo researchers³⁹ in the urge of evidence as a significant role in professional practice of teachers and others involved in shaping educational policy, initiatives and practice, there is also need to have design of research to collect 'sound' evidence in research findings as a basis for making an impact on classroom practice, with special concerns of Science, Mathematics and Language teachers.

³⁷ Johnson, D. W., Johnson, R. T., & Holubec, E. J. (1992). *Advanced Cooperative Learning (revised)*. Interaction Book Company, Minnesota.

³⁸ 王凱(2004). 《論合作學習的局限性》, *Hong Kong Teachers' Centre Journal* 《香港教師中心學報》, P.132-137, Vol. 2. :

³⁹ Millar, R., Leach, J., Osborne, J. & Ratcliffe, M. (2006). *Improving subject teaching: lessons from research in science education*. London: Routledge.