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Promoting critical thinking through effective group work: A teaching intervention for Hong Kong primary school students

Dennis Fung *

Faculty of Education, the University of Hong Kong, Room 323, Runme Shaw, Building, Pokfulam Road, Hong Kong

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ABSTRACT

More than two hundred Primary 5 students (11–12 years of age at Key Stage 2) at two primary schools in Hong Kong participated in a teaching intervention in which they learned how to make reasoned arguments through various problem-solving activities, such as peer critiquing and collaborative graffiti. Informed by the SPRinG project in the UK, this paper explores whether a set of group work strategies can make a difference to students' learning of critical thinking. The findings reported herein, which are based on the results of reasoning tests and analysis of the graffiti task, reveal that the teaching intervention led to a significant enhancement of students' critical-thinking ability. In addition to the group work strategies, which were found to be effective in the teaching intervention, the paper also addresses the corresponding school-based conditions and practical constraints to group work implementation.

1. Introduction

Hong Kong has occupied an enviable position in many international educational league tables in the past two decades, such as the Programme for Inter-national Student Assessment (PISA), Trends in International Mathematics and Science Study (TIMSS) and Progress in International Reading Literacy Study (PIRLS). However, it seems that this momentum has slowed in the past few years. Whilst Hong Kong fourth-graders were ranked first and third in mathematics and science, respectively, in TIMSS 2007, they managed only third and ninth place in TIMSS 2011[1] (e.g. Mullis, Martin, Foy, & Arora, 2012). Similar results were revealed in PISA, on which Hong Kong students dropped from third place in 2006 to fourth in 2009[2] (OECD, 2010), and their motivation to read was at the bottom of the PIRLS league table of 45 countries in 2011.

In fact, the Hong Kong education system has been scrutinised for an explanation of the competitive edge it affords students, thus allowing them to achieve the high proficiency levels reflected in the aforementioned assessments, but there is now growing interest in elucidating why the system's 'magic wand' no longer appears to be conferring the distinct advantages it did in the past. In contemplating the landscape of the recent educational reforms in Hong Kong, the fore-going issue is particularly relevant to a reform initiative outlined in 'Learning to Learn – the Way Forward in Curriculum' (Curriculum Development Council, 2001), which was envisaged as a vehicle to promote active student participation in the classroom. This educational initiative, which encourages primary school teachers to employ diversified teaching strategies

* Tel.: +852 98743074.
E-mail addresses: clfung@hku.hk, dennis.fung@cantab.net

[1] The students' average mathematics scores were 607 and 602 in 2007 and 2011, respectively, and their corresponding science scores were 554 and 535.
[2] The overall PISA reading scale of Hong Kong's fourth-graders dropped from 536 in 2006 to 533 in 2009.

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so as to facilitate more interactive and self-directed learning amongst students, was once perceived as a promising means of advancing primary education in Hong Kong. However, although the use of group activities in the classroom has increased since the initiative's launch (Keppell & Carless, 2006) and teachers have begun to adopt some form of student-oriented approach in classroom practice (Education Bureau, 2008), that use still remains insufficient or inadequate. For example, Galton and Pell (2010) cited the common scenario of only one student at a time being engaged in group activities while other members of the group remained off-task. The under-exploitation of group work in Hong Kong classrooms has been posited as a possible factor in the recent declines seen in student achievement.

In addition, little emphasis has been placed on the training of critical thinking in ordinary Hong Kong schools (Kennedy, 2002). The explanation for this lack of emphasis is twofold. On the one hand, Hong Kong's education system is generally recognised as hugely examination-driven, resulting in students' overreliance on information from textbooks and examination papers acquired through memorisation and laborious copying. On the other hand, under the influence of the Chinese Confucian value of respect for authorities, the majority of students tend to show little willingness to engage in argumentative discussions in the classroom (Biggs, 1996), particularly when challenges to tradition or conflicts with their personal opinions are involved (Kennedy, 2002). With rote-learning approximating the stereotypical view of the traditional Chinese learner, more attention is paid to drilling than to cultivating higher-order and critical-thinking skills.

In light of these issues, Hong Kong is considered an ideal setting for an insightful case study investigating the capacity of effective group work to further students' critical-thinking development. Informed by a pioneering teaching intervention, the aim of this study in a broader sense is to shed light on how different teaching pedagogies can influence the cultivation of students' argumentative abilities while at the same time addressing the corresponding school-based conditions and practical constraints.

2. Group work as a teaching pedagogy

2.1. Development of group work in classroom practice

Investigations of the concept of cooperation date back to the 1920s, when the social psychological theories underpinning group work began to evolve (Williams, 1996). In the early 1960s, the formal and strategic application of group work had just begun (Crabill, 1990; Slavin, 1989), and such terms as 'peer-assisted learning' and 'small-group teaching' began to appear in educational research (Davidson, 1990). Since then, substantial growth in interest in various forms of group work has been recorded in the UK. Take the Observational Research and Classroom Learning Evaluation (ORACLE) project as an example: although it commenced in 1975 (Galton, Simon, & Croll, 1980), this research is still making a profound contribution to group work scholarship today (Gill & Remedios, 2013; Hargreaves, Delamont, & Williamson, 2011).

However, a growing body of evidence suggests that even though more schools in the UK have adopted the group work format in their classrooms in the past few decades, whole-class instruction continues to dominate in many lessons (Reynolds, 1994). For instance, Kutnick, Blatchford, Clark, MacIntyre, and Baines (2005) investigated a mix of 250 classes of 12- and 15-year-old students from 47 secondary schools in England. They found that although 32.6% of the classrooms featured students seated in groups (compared to 28.5% in which they were seated in rows), individual tasks in the whole-class instruction format still constituted the majority of the classroom activities (for further information, refer to the next section or to Kutnick, Blatchford, & Baines, 2005). Stoll et al. (2003) reported similar findings, indicating that whole-class teaching still prevailed in the core subjects of Key Stage 3 study, and Galton, Hargreaves, Comber, Wall, and Pell (1999) observed that the provision of students with factual information rose from approximately 57% of teachers' total classroom talk to more than 80% over the 20-year period they studied (1976–1996).

In the US context, Slavin (1995) found that although 79% of third-grade teachers and 62% of seventh-grade teachers reported making regular and sustained use of cooperative learning strategies, the effectiveness of group work proved to be extremely low. For example, a survey carried out by Antil, Jenkins, Wayne, and Vadasy (1998) found that although 64 out of 85 teachers in six elementary schools in the Pacific Northwest reported using cooperative learning daily, only 19 emphasised the importance of individual accountability in relation to achieving group goals (cited in Slavin, 1999). Furthermore, in Israel, group work is widely recognised as a method for improving academic learning, but very little evidence of a genuine impact in schools has been reported (Hertz-Lazarowitz & Zelniker, 1995).

2.2. Grouping and group work

In view of the foregoing observations, differentiation has been made between the concepts of *grouping* and *group work* in classroom practice, with the former referring to the seating arrangement of groups of students and the latter to the teaching strategy of group work (Wilkins, 2011). The differences between these two concepts were illustrated by Kutnick, Blatchford, Clark, et al. (2005) and Kutnick, Blatchford, and Baines (2005), who provided a good understanding of the general failure to exploit the potential of group work. In particular, these researchers examined studies conducted in UK primary schools and described how the teaching and learning processes were undertaken in a variety of groupings, which included the seating arrangements for a whole class, small groups, dyads and individuals. Surprisingly, students spent most of their time in the classroom seated in small groups, but were rarely assigned learning tasks that engaged them in an interdependent manner.