Chapter 12
Group Work in Primary Schools in Hong Kong

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Abstract Simply placing pupils in classroom groups and expecting that effective learning will take place has proved naïve – often to the frustration of teachers, pupils and parents. Examples of effective group work in classrooms have been found to positively affect cognitive and curriculum-based achievement and social behaviour of children. But development of interventions to support effective group work must account for a culturally relevant pedagogy, relational development of children, changes in the role of the teacher and flexible use of classroom furnishings and task assignment. This chapter considers the development of effective group work within the Confucian heritage context of Hong Kong primary schools, explains underlying theoretical assumptions and reviews substantive studies – including the introduction of two recent case studies of group work in Hong Kong.

Keywords Social pedagogy • Classroom mapping • Relational approach • Effective group work

Preface

I have worked with Maurice Galton in one capacity or another over the last 30 years. During this time, I have always found Maurice absolutely consistent in his desire to provide evidence-based understandings of primary school (and other) classrooms. The evidential base has accounted for authentic classroom life – understanding and describing the roles of pupils and teachers within classroom contexts, collaborative contexts, communities of learning and in response to (and often contrasting with) government policy. Throughout these years, Maurice always maintained a strong belief in the potential of pupils to learn with their teachers and peers within their classrooms. Maurice has been fundamental in the codevelopment of a theory of social pedagogy of classrooms (Blatchford et al. 2003) within which pupils'

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potential for learning can be promoted or inhibited by the social context of their classrooms.

Introduction

In line with many themes being pursued in this volume, this chapter will describe and explain the potential for group work in classrooms, especially in the Confucian heritage culture (CHC) of Hong Kong. The chapter is in keeping with previous research by Galton (see especially Galton et al. 1980, 1999; Galton and Pell 2010); it will draw upon an authentic view of classrooms and an understanding that classroom actions and styles have developed over time in association with participants (teachers and pupils) and within perceptions of cultural heritage. Particularly with regard to cultural heritage, the background to this chapter acknowledges the existence of an ambiguous field of enquiry often dominated by government policy and interpretations of various pieces of 'evidence' of classroom structure and process.

Before considerations of CHC and authentic classrooms can begin, a brief deviation from the intended content of this chapter will be made to acknowledge the socio-political context of group work. In searching for previous research on the role and development of group work in Hong Kong classrooms, a series of critiques have come to light in the literature. The critiques concern the political context within which educational policies have developed in a number of Asian countries over the last three decades. Key terms drawn upon in this political context have been Confucian heritage culture, standards and comparisons in educational achievement, globalisation and colonialism. CHC has been described by numerous writers and researchers (see Biggs 1994; Flowerdew 1998; Oxford and Bury-Stoke 1995; Kennedy 2010) and provides an initially simplistic picture of Hong Kong learners as authority oriented, passive, face-saving and noncreative. This classic view of the CHC learner contrasts with the high levels of school-based achievement that characterise many Asian countries in international comparisons of mathematics, science and language achievement (OECD 2010; Mullis et al. 2012). When education policy and its development within Hong Kong (and other Asian countries) are taken into further consideration, the existence of a true CHC applied to classrooms is called into question. The policy-based literature has shown that government recommendations for teaching and learning practices in classrooms in Hong Kong are aware of Western-based pupil-centred recommendations, although these recommendations have been criticised for a perceived political imperative of 'the West versus the Rest', neocolonialism (Nguyen et al. 2006; Nguyen et al. 2009) and a 'false universalism' that one pedagogic size fits all (Whitty et al. 1998). In particular, this chapter's focus on group work in Hong Kong needs to be read within a critical awareness that there cannot be a 'simplistic transfer' of Western group working practices of cooperative or collaborative learning to countries such as Hong Kong

(Elliott and Grigorenko 2007), while effective group work in Hong Kong classrooms must look to 'culturally appropriate pedagogies' (Nguyen et al. 2006).

Contexts for Group Work in Hong Kong Primary School Classrooms

Confucius background: Before initiating a general consideration of group work in classrooms, it is necessary to provide a background as to the meaning of Confucian heritage culture, how CHC may apply to Hong Kong classrooms, government policy in support of teaching and learning in Hong Kong classrooms and descriptions of authentic teaching and learning processes in Hong Kong classrooms. As identified in the introduction, CHC has been used to describe the classroom-based teaching and learning (social pedagogic) contexts in a number of Asian countries. CHC also provides a critical pedagogic basis upon which to challenge whether practices such as group work are culturally appropriate for teaching and learning in Hong Kong classrooms.

A review of the literature concerned with group work and CHC finds a number of assertions, stereotypes and a variety of realities, essentially stating that: (1) group work may not be possible in CHC classrooms; (2) group work is a natural application/explanation of CHC within classrooms; and (3) the descriptive realities of pedagogic processes within and outside of Hong Kong primary school classrooms. Assertions and stereotypes concerning group work and CHC classrooms have been evident in the literature since the 1990s. The traditional CHC learner has been described as: passive, reluctant to express opinions, and deeply respectful of the teacher and the teacher's authoritative knowledge (Murphy 1987), preferring concrete (as opposed to abstract) knowledge and structured learning that does not require personal reflection (Oxford and Bury-Stoke 1995; Marton et al. 1996; Hofstede and Hofstede 2005), highly competitive with classmates (in an examination-driven system; Salili and Lai 2003), pursuing an individual approach to learning and not participating in discussions, asking questions or engaging in group work (Su 1995 as cited in Oxford and Anderson 1995; Tang and Williams 2000). Explanations for these learner characteristics have been laid to the foot of Confucius (Lao Tzo) and his descriptions for a harmonious Chinese society 26 centuries ago (Astorga 2002). Literature relating the resulting CHC to the possibility of group work in classrooms has described classroom practices of rote learning, reliance on memorisation, passivity among pupils and teacher 'virtuosity' (Mok and Morrison 2000; Kennedy 2010). These descriptions are based on three fundamental Confucian concerns: 'respect' for teachers and elders (Nguyen et al. 2005); maintaining 'face' of self and others (in creating a harmonious atmosphere in the classroom, where no one is challenged or may lose face in public, Liu 2002; Kennedy 2002); and 'collective' culture which combines respect with harmony – the realisation that life is maintained within a hierarchy with an equitable (as opposed to an

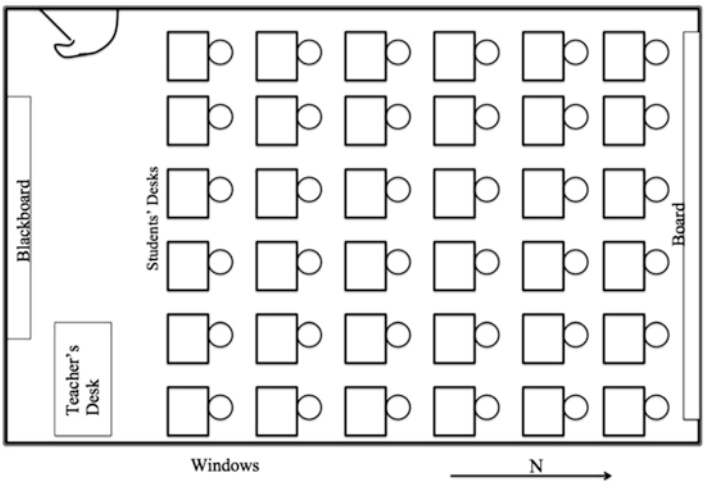

Fig. 12.1 Traditional Hong Kong primary school classroom layout (from Fung 2014)

equal) distribution of benefits (Chan 1999; Hofstede and Hofstede 2005; Nguyen et al. 2006). Perception of the teacher within this, seemingly, oversimplified view of CHC is an individual who – both commands and expects respect from pupils (Hofstede and Hofstede 2005) – has little willingness to engage in argumentation with pupils (Biggs 1996), and presents a teaching approach that is highly structured and detailed (Oxford and Bury-Stoke 1995) and based on a model of 'instruction-practice-feedback' (Stevenson and Lee 1997; Kennedy 2002). All of these CHC assertions concerning student, teacher and pedagogy take place in relatively large classes (by Western standards) of 35–40+ pupils, short lesson periods of 35 minutes and a perception that group work may be an anathema (Galton and Pell 2010). Figure 12.1 approximates the typical layout of a Hong Kong primary school classroom, with pupils seated/working individually, and the teacher at the front controlling the classroom and curriculum in a 'virtuoso' manner.

Confucius Confusions

For each of the traditional, formally taught examples of CHC, there have been a number of studies which seriously qualify the existence of the Chinese learner as an authority-dependent individual who prefers to learn alone via memorisation and rote. From the 1990s, Biggs (1994) typified Hong Kong classrooms as 'student centred' rather than teacher centred (moving at a pace that promotes understanding for all pupils in the class and encouraging high levels of cognitive understanding, as opposed to low cognitive challenge of rote learning; also see Li 2003). Watkins and Biggs (1996), Cortazzi and Jin (1996) and Cheng (2000) further assert that the CHC classroom blends international approaches to learning, while Western classrooms

tend to polarise approaches; hence, Hong Kong pupils are seen as 'active' learners who are open and reflective rather than passive recipients of teachers' instructions. There is also evidence that Hong Kong pupils engage in critical analysis when offered group learning experiences in their classrooms (Tang 1996). Even Flowerdew (1998; similar to Nelson 1995) found that group work could be effective in CHC classrooms if teacher-structured groups drew upon the children's collectivist orientation and did not ask pupils to overtly challenge one another.

Explanations for these contrary CHC findings draw upon two separate issues and identify three key considerations related to the use of group work to support learning. The issues are concerned with support for learning inside/outside of the classroom and explanations for the adaptability of the CHC learner. While most studies cited have only referred to observations made within classrooms, the literature does identify at least three separate aspects of CHC learning outside the classroom. Initially, many studies (Biggs 1994; Flowerdew 1998; Nguyen et al. 2005) have noted that respect for teachers and learning in schools is strongly supported by parents – there is encouragement to accept the way that teachers structure their classroom learning opportunities – no matter whether this is structured in a traditional or nontraditional manner. Children's respect for the teacher is also based on the time and consideration that teachers provide for their pupils both inside and outside the classroom. Cortazzi and Jin (1996) noted that even when classrooms were structured in a formal manner, pupils' learning problems were often resolved with the teacher outside of the classroom – helping the pupil to avoid falling behind in the classroom. The third outside classroom aspect is pupils' willingness to collaboratively engage in spontaneous group-supported reviews of classroom lessons to ensure that everyone has reached a high level of understanding (Biggs 1994; Su 1995 as cited in Oxford and Anderson 1995; Wong 1996); this outside-of-classroom group learning demonstrates shared cognitive strategies that support a deep approach to learning. The second issue concerns the adaptability of the CHC learner and notes that in contrast to the passive recipient of knowledge, children and adolescents in Hong Kong can adapt their learning practices as teachers change their teaching styles (Kennedy 2010). In an early realisation of the adaptability of the Chinese learner, Tang and Biggs (1996) suggested that it is pragmatic for pupils to draw upon a more passive learning style within their classrooms due to the hierarchical presentation of knowledge by a respected teacher and the individualised layout of their classroom; this suggests that pupils will draw upon/use alternate learning styles such as group learning if these styles are legitimised/encouraged by their teacher and the classroom is set up for group learning in a culturally appropriate manner (Whitty et al. 1998).

While the traditional CHC classroom has characterised much of the research concerning Hong Kong primary school classrooms, the government's education policy has encouraged teachers to move away from this teaching style over the last 20 years (e.g. the Target-Oriented Curriculum (Curriculum Development Council HK 1995) and Learning to Learn (CDCHK 2001)). In both of these curriculum recommendations, teachers were asked to adopt teaching styles that included enhanced pupil participation and engagement via discussion, argumentation and

group work within classrooms. And, there is some evidence that Hong Kong teachers have heeded the recommendations to incorporate a greater range of teaching styles in their classrooms and increased pupil engagement via group working processes (Mok and Morrison 2000; Keppell and Carless 2006; Education Bureau 2008). At the same time, though, there have been continuing regional arguments that group working strategies such as cooperative and collaborative learning are difficult to integrate into CHC classrooms (Messier 2003; Nguyen et al. 2009). Larger-scale studies of classrooms in Hong Kong tend to describe most teachers as maintaining traditional teaching styles. Even with a recent government initiative to reduce class size in primary schools, teachers were observed to maintain whole class teaching, individualising of learning tasks and rarely use groups to enhance learning (Galton and Pell 2010). Wong (2001) attributed the lack of change in Hong Kong teaching style to the short class period, the physical layout of classrooms, a competitive classroom climate that does not encourage shared thinking, teachers' lack of confidence in changing their classrooms and little focus on creative or critical thinking by pupils.

The portrait of Hong Kong primary school classrooms, thus, tends to be dominated by a traditional CHC practices – although there are counterexamples of the potential for group working and its limited use. Based on the review thus far, three considerations appear fundamental to the adaptation and use of group work for the enhancement of pupil learning in Hong Kong:

1. The role of the teacher – is she/he prepared to move away from perceived and established traditional practices and how can this movement be supported?
2. The classroom context – can both the physical layout and curricular practices that characterise the traditional classroom be changed to allow for more and effective group work?
3. The relational involvement of pupils – while classroom-based studies have acknowledged that CHC classrooms can include collectivistic/group orientations to learning, will children incorporate their (out-of-class) group learning potential within their current individualistic and competitive classroom?

Group Work in (Western) Classrooms

While it may appear late in the chapter to arrive at the actual topic of effective group work in classrooms in the promotion of pupil learning, it has been essential to provide a political and cultural context before effective group work can be considered in Hong Kong primary school classrooms. Group work in Western classrooms has been explored extensively in recent years (see Wilkins 2011; Kutnick and Blatchford 2014). These explorations acknowledge that there are good reasons to promote group work in the enhancement of learning although Western teachers rarely take up this opportunity effectively in their classrooms. Group work to enhance classroom learning has been the topic of study and innovation for centuries (see Piaget 1959;

Pepitone 1980; Wagner 1982; Johnson and Johnson 2003a; Slavin et al. 2003; and others). Each of the studies concerning group work and learning has been clear to separate the simplistic placement of pupils into groups from structured group work for learning (Chiu 2004; Kutnick and Blatchford 2014). Even with this separation, there is a variety of group work strategies that may be structured in classrooms. These strategies include: cooperative learning, collaborative learning, team learning and study groups. Virtually all Western models or theories underlying effective group work emphasise aspects of interpersonal motivation via interdependence and equality of participation (from Deutsch 1949) affecting children's cognitive understanding, school achievement and interpersonal relationships – yet, there are comparatively few studies that have shown that effective group work has been incorporated into classrooms on a long-term basis (Fung 2014).

Why group work in schools? Theoretical explanations: Since the advent of schooling, placing pupils in classrooms has meant that children's learning experiences take place in the presence of others – whether in some form of seated group or task-related learning group (Kutnick and Blatchford 2014). These pupil-based groups can vary in size from a large number of individuals (grouped as a class), to pairs, to triads, to other small groups (4–6 pupils), to larger groups (10–15 pupils) and to the whole class (Baines et al. 2003). At the same time, dynamics of group-based learning can include tutorial-based learning with peers or adults (Wagner 1982), mutual problem-solving (from Piaget and Inhelder 1972) and scaffolded zones of proximal development (from Vygotsky 1978; Wood 1998). Most studies that explore the learning that might be gained by effective group work have focused on pairs, triads or small groups and have taken place mainly within classrooms. These studies draw upon cognitive, socio-cognitive (including sociocultural) and social psychological theories.

The Western-based theories that underlie group work for learning tend to see the child as an active agent in her/his own learning and the learning of others. Children actively co-construct their learning through social interactions with peer and teachers. Piaget (1971) identified that cognitive understanding was promoted in the process of equilibration, a dynamic rebalancing of the individual's existing knowledge with the need to integrate new knowledge into the child's cognitive repertoire. This process is promoted in the child's social interactions with adults and peers and is greatly enhanced with the child's increasing linguistic competence and shared activity with others (see Piaget 1959; Vygotsky 1962; Goswami and Bryant 2007). From a Piagetian-cognitive perspective, emphasis in this socially enhanced learning process is placed on mutual interactions between peers – where a multiplicity of personal perspectives encountered in social interaction facilitates equilibration mainly via language-based interactions. Examples of these encounters include: children solving problems jointly (Doise and Mugny 1984; Perret-Clermont 1980) and engaging in explanations, making judgements and predictions with others (Howe and Tolmie 2003; Howe 2010). In a seminal review of research in this area, Damon and Phelps (1989) identified that the effectiveness of the social interaction leading to cognitive development will be mediated by a climate of 'connectedness' between the interacting peers – especially if the connection between children is characterised

by ‘mutual’ sharing of knowledge with no power/authority differences between the interactors. Mutuality may also be seen to lie at the heart of Western approaches to ‘cooperative learning’ – an application based on equality of group members in both the learning process and knowledge gained; to be explained in the next section of this chapter concerning Deutsch (1949), Allport (1954; and others).

The underlying need for mutual connectedness (of equal peers) contrasts with socio-cognitive/sociocultural theories and explanations of cognitive development attributed to Vygotskian and neo-Vygotskian perspectives (Vygotsky 1978; Rogoff 1990; Wertsch and Sohmer 1995; Wood 1998). These theories identify that the social interactions at the heart of cognitive development take place within a cultural context, and explanations for the ‘handing down’ of knowledge from one generation to another is best explained within this theoretical context. In school-based applications, the role of the teacher and expert peers described in the zone of proximal development facilitates what Bruner (1983), Wertsch and Sohmer (1995) and others have described as a theory of ‘instruction’. The social tie between teacher/expert and novice (learner) has been described mainly in intellectual terms – where the knower engages the learner with arguments and alternatives that are meaningful to the learner but in advance of the current knowledge of the learner (e.g. Rogoff 2003; Tharp and Gallimore 1988). Socio-cognitive/sociocultural theories are firmly rooted in the understanding that children require the use of language within their interactions with others to promote cognitive development (Mercer and Littleton 2007), although school-aged children may require particular linguistic support as many of their within-class conversations do not include a high proportion of explanatory/elaborated speech (see Mercer et al. 1999; Webb and Farivar 1994; and others). Whereas cognitive-oriented theories draw upon a mutual/equal relationship, the socio-cognitive/sociocultural theories have an equitable relationship as their basis and have been applied in classroom group settings that draw upon collaborative learning in the forms of peer tutoring (Topping 2005; Goodlad and Hirst 1989), argumentation (Anderson et al. 1997; Reznitskaya et al. 2009) and ‘talk’ programmes (Littleton et al. 2005).

A further theoretical explanation for group work in classrooms arises from social psychological theories of interpersonal relationships. Early research that showed joint problem-solving is superior to individual problem-solving due to its enhanced complexity and basis for learning (Lewin 1946); more substantial interpersonal and motivational explanations for effective learning by cooperation have been provided by David and Roger Johnson (Johnson and Johnson 2003a), Robert Slavin (Slavin 1995) and others. As the Johnsons identify, cooperative learning theories are strongly based on interdependence between participants (from Deutsch 1949) and contact theory (from Allport 1954). Reviews of these theories often focus on the potential for classroom learning (Lou et al. 1996; Roseth et al. 2006) and give only minor consideration to the initial social uses of cooperation espoused by Lewin, Allport and others. Thus, it is not unusual to note that the above reviews identify that cooperative learning studies based on these theories enhance children’s learning when compared to traditionally taught classes. But, it should be noted that the studies are also effective in promoting positive within-class social relationships and

positive attitudes towards schooling among children. Aside from a basis of equality designed into these social psychology theories, there is a strong notion of heterogeneity (each pupil group should typify the general composition of a class – including a mix of sexes, attainment levels, race and ethnicity; Slavin 1995) with groups and learning tasks structured to overcome any social status differences between pupils (Cohen and Lotan 1995). Social psychological theories are most likely represented in classroom groups in various types of cooperative learning settings.

Actual Classroom Studies Concerning the Use of Pupil Groups

As reviewed elsewhere (Kutnick and Blatchford 2014; Baines et al. 2008), studies of pupil groups in classrooms are of two types – with very little overlap between the types. Studies most strongly associated with Galton (and this volume) are based on naturalistic observation of classrooms and identify the range of groups used, when the groups are used, size and composition of groups. Naturalistic group studies tend not to be associated with 'outcome' measures of cognitive, academic or other achievements. The other type of classroom study is referred to as 'experimental' and records evidence of effects of an educational innovation (usually cooperative or collaborative) in terms of cognitive and academic achievement as well as social behaviour.

Naturalistic studies of pupil groups in classrooms have been, predominantly, undertaken in the UK. A short history of these studies shows a concentration of interest in the 1970s/1980s when a largely government-driven debate ensued concerning the merits of child-centred pedagogies (see especially Alexander et al. 1992). In this debate, children in primary schools were accused of underachieving due to child-centred practices attributed to the imposition of recommendations from the Plowden Report (1967). Naturalistic studies were undertaken using observation and questionnaire methods and drew upon fairly large samples. The most important of these studies included: Bennett (1976), Galton et al. (1980), Bennett et al. (1984), Mortimore et al. (1988) and a repeat study by Galton et al. (1999). While these studies have been reviewed in depth elsewhere (see Kutnick 1988; Kutnick and Blatchford 2014), they essentially tell the reader that child-centred pedagogical practices did not take hold in a substantive manner. Most classroom teaching was undertaken with the teacher maintaining traditional control of knowledge and behaviour, with children working individually (on individual learning tasks) although they were often seated in small groups around tables and with little evidence of children being asked to undertake learning tasks in groups or being allowed/directed to discuss/interact with their peers. These studies also showed that pupil groups could vary in size from children working alone or being seated in pairs or small groups with the predominant pedagogic context of the teacher directing the whole class – no matter how children were seated. If pupil groups were used in the teaching and learning process, it was most likely during the limited discussion time

associated with literacy tasks and least likely in individualised mathematics lessons; pupil groups were composed either by differentiated attainment levels or by friendship.

Through the 1990s and 2000s, a new approach to classroom observations added further descriptions of social pedagogic practices via the use of classroom mapping (see Kutnick et al. 2002; Baines et al. 2003; Kutnick and Brighi 2007). Mapping fulfils criteria of 'authenticity' in that the technique identifies the placement, grouping and learning activity of all children (and adults) in a classroom during lesson time; this is a distinct approach from previous observation methods that focused on a limited number of children who may be 'representative' of learning activity undertaken with teachers and peers. Mapping provides insight into group size (and corresponding number of groups), group composition, interactions to support learning within groups, learning tasks, actions of adults and interrelationships between these various classroom factors. Many of the findings reported in the above studies coincide with previous naturalistic studies, although a range of newer and more refined insights have arisen when mapping studies are drawn upon to compare different year levels in primary school. These insights include: over the primary school years, there is a greater tendency to group children by their level of attainment, especially with regard to mathematics and literacy subjects; as group sizes became smaller, teachers could only focus on one group at a time, and hence, as year in school increased pupils had to work more autonomously from the teacher while rarely being provided training for this autonomous work; while all classrooms showed a mixture of group sizes, younger pupils were more likely to be found seated in small groups, and older pupils were more likely to be seated in dyads, most of these pupil groups were seated around tables of 4–6 children (also see Hastings and Chantry 2002); while seated in various group sizes, most learning tasks required pupils to work individually, there was very little evidence of peer-interactive talk and most learning-oriented talk took place between teacher and pupil rather than between pupils; learning tasks assigned to children evolved with year in school, from a stronger practice orientation with younger pupils to a cognitive (new knowledge and skills) orientation with older pupils; and while there was a change in learning task orientation with year in school, there was no clear relationship to size or interaction of pupil groups, as most of the learning tasks were structured and led by the teacher. The mapping studies show little academic use for groups in Western classrooms, and three concerns arise that should be considered is the understanding of the role and potential of pupil grouping:

1. Pedagogically, while theoretical studies have identified the potential for children learning with/from their peers and adults, mapping has identified a teacher domination of talk and task structure across all classroom learning tasks. If the pedagogic potential of groups for learning is to be realised, then classroom groups will have to be reoriented from their predominant seating role towards a discussion and interactive learning role.
2. If pupils are to be more actively engaged pedagogically, teachers may need to provide training, support and classroom legitimisation for peer interaction as

well as arrange their classrooms to allow peers to become more interactively engaged in their learning.

3. If children are to become more interactively and pedagogically engaged, Western teachers (similar to their CHC counterparts) will need extra training and support for more active and noisy classrooms – for there have been a number of studies (reviewed in Baines et al. 2008) which identify that teachers' lack of desire to introduce group work in classrooms to be founded on fears of unruly and noisy classrooms that contrast with the orderly and well-mannered classrooms of other teachers in their schools.

Experimental studies of cooperative and collaborative learning directly contrast with naturalistic studies reported above. Experimental studies have been structured to assess advantages in pupil learning via cooperative or collaborative interventions compared to traditional (Western), teacher-dominated classrooms. Cooperative learning interventions have a number of common characteristics. Cooperative pupil groups tend to be small – between 4 and 6 children – and of a heterogeneous composition to avoid knowledge and status hierarchies in the classroom (Cohen and Lotan 1995). Cooperative learning tasks must also be structured to develop/draw upon peer interdependence such that each pupil can contribute equally (Ames 1981; Johnson and Johnson 2003b) and encourage contact – especially drawing upon interpersonal communication skills (Barron 2003). When compared to traditional classrooms, reviews of cooperative studies (Kulik and Kulik 1992; Lou et al. 1996; Roseth et al. 2006) have consistently identified that: (1) pupils learn as much (and sometimes more) curriculum material than pupils in traditional classes; and (2) pupils in cooperative classes undertake their learning in a positive social atmosphere that engenders the development of extended within-class friendships and pro-school attitudes. These cooperative learning benefits can only be made if teachers are extensively trained in the cooperative intervention, such that they can model and support their children's new approach to learning (Gillies and Kahn 2009; Webb et al. 2009).

Collaborative learning, in contrast to cooperative learning, does not structure tasks for interdependence but is based on children's codevelopment of joint understanding via enhanced discussion and communication. Key communication skills drawn upon/developed through collaborative learning include problem-solving and elements of elaborated speech (justifications, explanations, predictions, etc.) as identified in a range of studies (Rosenshine et al. 1996; Dillenbourg et al. 1996; Sjard and Kieran 2001; Rojas-Drummond and Mercer 2003; Reznitskaya et al. 2009). Collaborative studies identify that shared information among pupils is likely to increase their understanding of general problem-solving and curriculum-oriented learning (Forman and Cazden 1985). Yet, the type of communication skills that promote and enhance collaborative learning is not generally a characteristic of normal within-class, peer-based interaction (see Mercer and Littleton 2007; Howe et al. 2000; and others). Hence, the facilitation of collaborative learning in classrooms draws upon the need to apply communication interventions to enhance elaborated talk (Mercer et al. 2004), helping and supportive behaviour (Webb and Mastergeorge

2003), argumentation (Mirza and Perret-Clermont 2009) and supportive questioning (O'Donnell and King 1999). The introduction of collaborative learning with pupil groups in classrooms, like cooperative learning, is not straightforward. Teachers will need to change traditional teaching styles to encourage more pupil talk (Webb et al. 2014), promote pupil questioning that is not threatening for 'face' (Kazemi and Stipek 2000) and provide opportunities for collaboration as well as model collaborative behaviour (Gillies and Kahn 2009).

Both cooperative and collaborative learning for the classroom appear to be strongly supportive of the cognitive and socio-cognitive/sociocultural theories. While studies identify successful classroom interventions, there are a number of limitations. Studies that describe successful cooperative and collaborative approaches tend to be undertaken over a short period of time, between 2 weeks or a term and, thus, do not provide evidence of any long-term change in children's group working behaviours. Each of the approaches is reliant on children's desire and ability to work with one another – cooperative approaches appear to see interpersonal/relational development as a result of successful cooperative activity, and collaborative approaches must take place between peers who want to talk with one another. Without problematising pupil's interpersonal relationships before initiating cooperative and collaborative interventions, there is a likelihood that children will not want to work with one another. Also, effective cooperative and collaborative learning requires that children work autonomously from the teacher, and interventions will need to include some form of training to enhance pupil interdependence and reduce dependence on the teacher. Finally, due to the methodological structure of these studies, the (often) quantitative methods of cooperative studies do not allow insight as to why this approach may be effective, and the (often) qualitative methods of collaborative studies tend to focus on only a few pupils in the classroom without identifying how effective the approach is for all children in the authentic classroom.

While Western group working practices to support cognitive, academic and social development of pupils in primary schools have strong theoretical backgrounds, their actualisation in authentic classrooms is more limited than one might expect. Being cognisant of cooperative and collaborative structures to support learning as well as naturalistic hurdles for effective group work, one further set of studies undertaken by Blatchford et al. (2005) was structured and evaluated on a large-scale, whole-class basis. These SPRinG (Social Pedagogic Research into Group work) studies drew upon the intention to promote pupils' cognitive and curricular understanding, but the studies approached 'effective' group work within authentic classrooms in a slightly different manner from previous research. Unlike many of the previous studies, SPRinG was funded over three+ years – which allowed for phases of development, application and evaluation (see Kutnick and Blatchford 2014 for a fuller explanation). Also, SPRinG deviated from previous studies in that it problematised children's ability to relate to all other members of their class in a positive and supportive manner rather than expecting children's social development to be a result of interacting cooperatively or collaboratively. This focus on relationships also meant that teachers would need to reconsider their roles in the classroom

as well as how the classroom was physically structured to enhance curriculum-based learning. The development phase allowed insight into aspects not normally considered in previous studies: (1) the involvement of a dedicated set of teachers who wished to promote group work in their classrooms and codevelop theoretically informed actions and activities with researchers; and (2) adaptation of a 'relational approach' (Kutnick and Manson 1998) that would enhance children's sensitivity, trust, communication and joint actions with their classmates in an inclusive manner. In its application phase, the codeveloped SPRinG studies (Kutnick et al. 2008; Blatchford et al. 2006) were undertaken in primary schools over a whole school year and, at this point in time, represent the largest quasi-experimental assessment of group work internationally. The primary schools studies involved over 1300 pupils with 51 experimental and 58 control classes. The group working skills engendered in SPRinG were not developed to be associated with any particular curriculum subject although cognitive and curriculum-based pre-testing to post-testing showed significant development in pupils' understanding of mathematics, literacy and science. The cognitive achievements of pupils in the SPRinG classrooms significantly affected children at all levels of attainment and both boys and girls. Comparative observations of children over the year showed distinct advances in SPRinG as opposed to control classes with regard to elaborated communication among mutual peers, sustained on-task and within-group focus for communication and involvement of all group members in curriculum-based talk. And, while there was variation among the SPRinG teachers with regard to how fully they adapted the recommended approach in their classrooms, there was good evidence to show the teachers moved from a traditional controlling curriculum and knowledge orientation to one of observing and monitoring their pupils and teachers increased their confidence in offering group work opportunities for their children. As a result of these studies, three principles were identified for the adaptation of effective group working to support learning in classrooms (see Baines et al. 2009, p. 3):

1. The relational approach: Group work skills have to be developed – children cannot simply be put into groups and be expected to work well together. Group work skills should help children to trust and respect each other; communicate effectively through listening, explaining and sharing ideas; and plan, organise and evaluate their group work.
2. The classroom context: The classroom and pupil groups should be strategically organised and managed with attention paid to seating arrangements and group characteristics that account for size, composition and stability of pupil groups.
3. The role of the teacher: Teachers (and other adults who work within classrooms) should adopt a range of roles that are supportive of group work and that encourage pupil interdependence rather than the direct, traditional teaching of pupils. Careful attention should be paid to the nature and structure of curricular and other classroom activities to ensure that group work can be effective.
4. Two case studies of effective group work in primary schools in Hong Kong.

A search of the research literature concerning the use of group work in primary schools in Hong Kong produced relatively few published studies. The lack of studies

is somewhat surprising in that the government (via its Education Bureau) has been encouraging the use of group work, pupil engagement and discussion since the start of the millennium. There have been a number of observational and other studies undertaken in Hong Kong primary schools (previously reviewed) which appear to attest to the continuing use of CHC practices of teacher-directive, formal teaching. Particularly, as shown in Fung's (2014) Fig. 12.1, classrooms tend to be taught in an individualised manner – both in terms of seating and in terms of pedagogic orientation between the individual pupil and her/his teacher. Each of these classrooms are well equipped with technological aids to support the 'virtuoso' teacher; these aids are concentrated at the front of the classroom and under the teacher's control. Even when offered the opportunity to create/use different pedagogic approaches by the reduction in their class sizes (from 35 pupils reduced to 25), Hong Kong primary school teachers maintained their traditional pedagogic approach (Galton and Pell 2010). Against this backdrop, two recent studies/cases are briefly introduced here (their full reports are still in preparation [Kutnick, Mok, Fung, Lee, Lai and Li] and in press [Fung 2014]). The two studies each drew upon the methodology and approach created in the UK-based SPRinG studies (Kutnick and Blatchford 2014), but were adapted for Hong Kong primary school classrooms. Kutnick et al. (in preparation) focused on the introduction and assessment of effective group work in mathematics classes in the upper primary school (P4), and Fung (2014) focused on the introduction and assessment of critical thinking skills in the upper primary school (P5). While both studies drew upon the SPRinG materials (Baines et al. 2009), each of the studies developed slightly different quasi-experimental methods. In so doing, the studies compared pupil knowledge and understanding (pre-post) over time and between experimental and control classes. Both studies worked with groups of teachers in the adaptation of key SPRinG principles (relational approach, adaptation of the classroom context and adaptation of teacher role) for the CHC classroom context.

The Kutnick et al. study worked with 20 mathematics teachers (12 experimental, 8 control) over two-thirds of a school year – rather than the full-year SPRinG programme. The focus on mathematics teachers and their classes was made because mathematics had been known internationally to be the most individualistically taught of all primary school curriculum subjects (Kutnick et al. 2002). Experimental and control teachers were initially assessed for their mathematics understanding and pedagogic efficacy (Wong et al.'s (2008) Hong Kong-based adaptations of Rowland et al.'s (2003) teacher assessments) in teaching mathematics, while their children were assessed on their mathematical knowledge via an adapted government-based test of age-appropriate mathematics questions and observed in their classrooms over two terms. Initial pretest results explored for differences between experimental and control teachers and their classes. As might be expected, no significant differences were found in teachers' mathematical understanding or pedagogic efficacy or their children's mathematics understanding. Over the course of the two terms, experimental teachers were provided training in the SPRinG approach, and adaptations for their classrooms and the mathematics curriculum were discussed, codeveloped and implemented in their classrooms. It should be noted here, but only at an

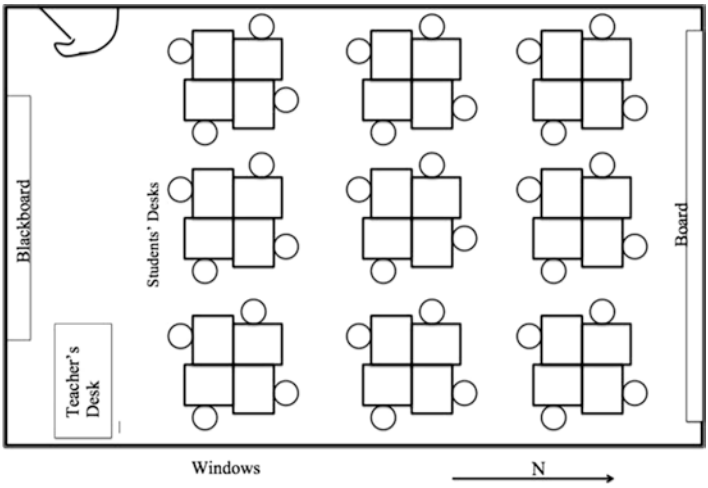

Fig. 12.2 Adapted layout of Hong Kong classroom for effective group work (From Fung 2014)

anecdotal level, that the teachers needed to engage in group work activities themselves before introducing the activities into their classrooms; and teachers become a support group among themselves. Observations over the research period showed that the experimental classrooms changed physically from the presentation of Fig. 12.1 to a close approximation of what Fung (2014) has presented as Fig. 12.2 – that is, desks were easily moved from individual positions to allow for small group, face-to-face interactions. The control class layout remained fundamentally the same over time (Fig. 12.1). Experimental pupil interactions changed from predominantly teacher-oriented individual pedagogic activity to show significant (based on non-parametric, chi square tests for difference with probability levels at 0.05 or lower and displayed in Fig. 12.3) within-group increases in questioning, suggesting, giving information, agreeing and maintaining group direction and (not in the figure below) on-task behaviour. There was also a significant difference between experimental and control classes in pupils' gain in mathematical understanding over the two terms (an initial ANCOVA: $F[1,476] = 9.715$, $p < 0.001$, effect size = 0.2; compared for individual post-test differences controlling for initial pretest scores, and this finding was later confirmed at class-level comparison using hierarchical linear modelling [HML]). The effect size showed experimental children progressing about 2 months in advance of control pupils (displayed graphically in Fig. 12.4). Finally, when post-test comparisons were undertaken on teachers' pedagogic efficacy, experimental teachers increased their scores significantly, while control teachers' scores remained fundamentally the same (regression: $F[3,16] = 5.465$, $p < 0.009$). Thus, against a background of significant increases in mathematical understanding for the experimental children, the study identified that the children became more likely to engage in the activities being recommended by the government (e.g. enhanced discussion and argumentation skills within a group work context; CDCHK 1995, 2001). Also, while experimental pupils were more likely to remain 'on-task'

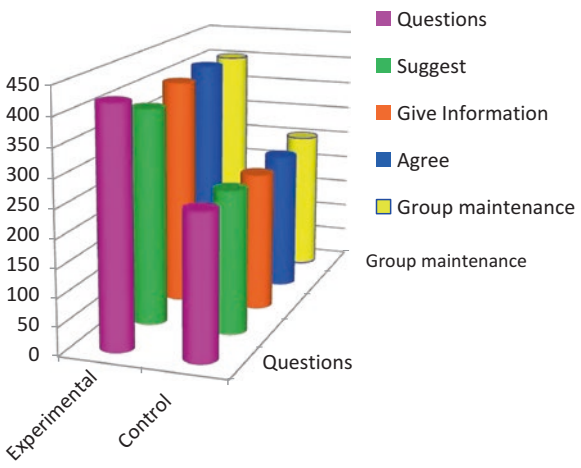

Fig. 12.3 Post-test observed differences in incidence of communicative in experimental and control classes

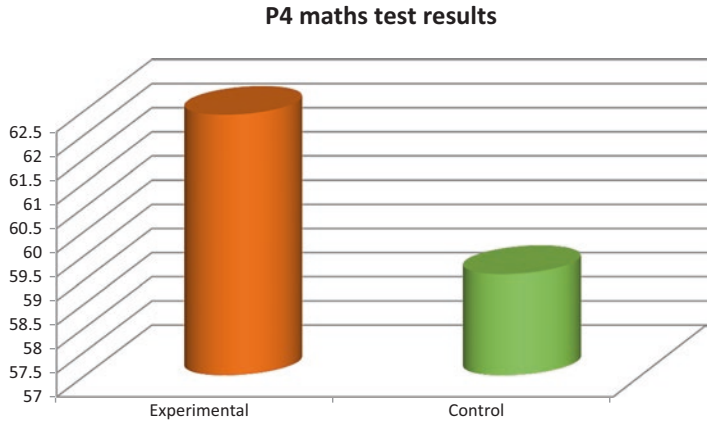

Fig. 12.4 Post-test differences in mathematical understanding after accounting for initial (pretest) results

than their control counterparts, this increased interpersonal interaction and on-task behaviour may not tell the full story. Experimental teachers' pedagogic efficacy increases also demonstrated a greater willingness for teachers to engage with their pupils. Hence, the increase in effective group work in these mathematics classrooms appears tied to changes in the teacher's role and changes in pupils engaging activities simultaneously.

In Fung's (2014) study, a smaller group of teachers (six in total) agreed to introduce critical thinking skills to their classrooms. Teachers from two schools were assigned to three teaching conditions: traditional classroom, standard group work task assignment with no particular training for group work and group work training based on the SPRinG programme (Baines et al. 2009). Critical thinking tests (California Critical Thinking Disposition Inventory (Facione and Facione 1992) and

Test of Critical Thinking Skills for Primary and Secondary School Students (Yeh et al. 2000) adapted for use in Hong Kong) were administered as a pretest, and no significant differences were found between children in the three conditions. Over a 5-month (two-term) intervention period, pupils were taught a minimum of ten critical thinking lessons in a manner consistent with their pedagogic condition. Outcomes related to critical thinking showed that all children increased their critical thinking capabilities over time, but the group work with training classes improved to a significantly higher degree than the standard group work classes, and both of the group work conditions improved more than the traditionally taught classes (statistical assessment of the California Critical Thinking Disposition Inventory and the Test of Critical Thinking Skills for Primary and Secondary School Students drew upon mixed-model two-way ANOVAs with Bonferroni post-test comparisons between conditions). Observations of the children's joint working (within the group conditions only) showed that standard and group work with training conditions used high levels of justification, but the trained condition used these to a significantly greater degree. To explain why the trained group work condition produced consistently better results than the standard group work and traditional conditions, Fung interviewed teachers. Interviews found that teachers were easily able to adapt their teaching approach from their previous traditional approach, but this adaptation needed to be supported by specific training of teachers and pupils to engage in group work; the ability to adapt their classrooms (especially layout and pedagogic methods) was seen in a move from Figs. 12.1 to 12.2; and the adaptation of the teacher's role from directing the class to engaging with the children in their discussions was seen as fundamental for pupils' improvement in critical thinking.

Summary and Conclusion

Arguments for the use of group work in classrooms have strong Asian and Western theoretical backgrounds, but the application of effective group work for learning has been very limited in countries around the world. This chapter has identified political contexts of group work and strongly supports the tenet that the introduction of effective group work in Hong Kong classrooms must be undertaken in a 'culturally appropriate' manner. At the same time, after a review of both theory and research evidence, the chapter has pointed out that there has been no clear culturally appropriate interpretation for effective group work approaches in Hong Kong until recently. A summary of the literatures reviewed within the chapter has identified that culturally appropriate principles should account for an adaptation in the role of the teacher, an ability to change the context (both physical layout and curriculum presentation) of the classroom and support for the development/legitimisation of relational and group working skills of pupils. Each of these principles has been derived from Confucian heritage and Western contexts, and the principles set a background for continuing case studies in Hong Kong. The case studies also draw upon further considerations that have been developed by Galton and his various

colleagues (see especially Blatchford et al. 2003), considerations of classroom authenticity, inclusion of all children in a class and teacher codevelopment. Drawing upon these principles and considerations, the case studies have shown that effective group work can be integrated into Hong Kong primary school classrooms – affecting children's academic achievement, increased levels of classroom engagement of teachers and pupils and teachers' pedagogic confidence.

References

Alexander, R., Rose, J., & Woodhead, C. (1992). *Curriculum organisation and classroom practice in the primary school: A discussion paper*. London: Department of Education and Science.

Allport, G. (1954). *The nature of prejudice*. Cambridge, MA: Addison Welsley.

Ames, C. (1981). Competitive versus cooperative reward structures: The influence of individual and group performance factors on achievement attributions and affect. *American Educational Research Journal, 18*, 273–287.

Anderson, R. C., Chinn, C., Chang, J., Waggoner, M., & Yi, H. (1997). On the logical integrity of children's arguments. *Cognition and Instruction, 15*(2), 135–167.

Astorga, H. (2002). *Teamwork—a new twist to old Asian collectivism*. Asia Pacific Management Forum. Retrieved November 12, 2004, from http://www.apmforum.com/columns/eaststrategy5.htm

Baines, E., Blatchford, P., & Kutnick, P. (2003). Changes in grouping practices over primary and secondary school. *International Journal of Educational Research, 39*(1–2), 9–34.

Baines, E., Blatchford, P., & Kutnick, P. (2008). Pupil grouping for learning: Developing a social pedagogy of the classroom. In R. Gillies, A. Ashman, & J. Terwel (Eds.), *The teacher's role in implementing co-operative learning in classrooms* (pp. 55–72). New York: Springer.

Baines, E., Blatchford, P., and Kutnick, P. with Chowne, A., Ota, C., and Berdondini, L. (2009). *Promoting effective group work in primary schools*. London: Routledge.

Barron, B. (2003). When smart groups fail. *The Journal of the Learning Sciences, 12*(3), 307–395.

Bennett, N. (1976). *Teaching styles and pupil progress*. London: Open Books.

Bennett, N., Desforges, C., Cockburn, A., & Wilkinson, B. (1984). *The quality of pupil learning experiences*. London: Erlbaum.

Biggs, J. (1994). Asian learners through Western eyes: An astigmatic paradox. *Australian and New Zealand Journal of Vocational Education Research, 2*(2), 40–63.

Biggs, J. (1996). Western misconceptions of the Confucian-heritage learning culture. In D. Watkins & J. Biggs (Eds.), *The Chinese learner: Cultural, psychological and contextual influences* (pp. 45–67). Hong Kong: CERC and ACER.

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

Blatchford, P., Galton, M., Kutnick, P., & Baines, E. (2005). *Improving the effectiveness of pupil groups in classrooms: Final report to the ESRC (L139251046)*. Swindon: Economic and Social Research Council.

Blatchford, P., Baines, E., Rubie-Davies, C., Bassett, P., & Chowne, A. (2006). The effect of a new approach to group work on pupil-pupil and teacher-pupil interactions. *Journal of Educational Psychology, 98*, 750–765.

Bruner, J. (1983). *Children's talk: Learning to use language*. New York: WW Norton and Co..

Chan, S. (1999). The Chinese learner – A question of style. *Education and Training, 41*(6/7), 294–304.

Cheng, X. (2000). Asians students' reticence revisited. *System, 28*, 435–446.

Chiu, M. M. (2004). Adapting teacher interventions to student needs during cooperative learning: How to improve student problem solving and time on-task. *American Educational Research Journal, 41*(2), 365–399.
Cohen, E., & Lotan, R. (1995). Producing equal status interaction in the heteregeneous classroom. *American Educational Research Journal, 32*, 99–120.
Cortazzi, M., & Jin, L. (1996). Cultures of learning: Language classrooms in China. In H. Coleman (Ed.), *Society and the language classroom*. Cambridge: Cambridge University Press.
Curriculum Development Council HK [CDCHK]. (1995). *Target oriented curriculum programme for study of mathematics, key stage 1 (primary 1–3)*. Hong Kong: Curriculum Development Council.
Curriculum Development Council HK [CDCHK]. (2001). *Learning to learn – the way forward in curriculum development*. Hong Kong: Curriculum Development Council.
Damon, W., & Phelps, E. (1989). Critical distinctions among three approaches to peer education. *International Journal of Educational Research, 58*, 9–19.
Deutsch, M. (1949). A theory of cooperation and competition. *Human Relations, 2*, 129–152.
Dillenbourg, P., Baker, M., Blaye, A., & O'Malley, C. (1996). The evolution of research on collaborative learning. In E. Spada & P. Reisman (Eds.), *Learning in humans and machines: Towards an interdisciplinary learning science*. Oxford: Elsevier.
Doise, W., & Mugny, G. (1984). *The social development of the intellect*. Oxford: Pergamon Press.
Education Bureau (2008). *Small class teaching in public sector primary schools*. Hong Kong: Education Bureau Circular No. 19/2008, 10 October 2008.
Elliott, J. G., & Grigorenko, E. L. (2007). Are Western educational theories and practices truly universal? *Comparative Education, 43*(1), 1–4.
Facione, P. A., & Facione, N. C. (1992). *CCTDI: A disposition inventory*. Millbrae: California Academic Press.
Flowerdew, L. (1998). A cultural perspective on group work. *ELT Journal, 52*(4), 323–329.
Forman, E. A., & Cazden, C. B. (1985). Exploring Vygotskian perspectives on education: The cognitive value of peer interaction. In J. V. Wertsch (Ed.), *Culture, communication and cognition: Vygotskian perspectives* (pp. 323–347). New York: Cambridge University Press.
Fung, D. (2014). Promoting critical thinking through effective group work: A teaching intervention for Hong Kong primary school students. *International Journal of Educational Research*.
Galton, M., & Pell, T. (2010). *Study on small class teaching in primary schools in Hong Kong*. Hong Kong: Education Bureau and Cambridge University.
Galton, M. J., Simon, B., & Croll, P. (1980). *Inside the primary classroom*. London: Routledge and Kegan Paul.
Galton, M. J., Hargreaves, L., Comber, C., Wall, D., & Pell, A. (1999). *Inside the primary classroom: 20 years on*. London: Routledge.
Gillies, R., & Kahn, A. (2009). Promoting reasoned argumentation, problem-solving and learning during small-group work. *Cambridge Journal of Education, 39*, 7–27.
Goodlad, S., & Hirst, B. (1989). *Peer tutoring: A guide to learning by teaching*. London: Kogan Page.
Goswami, U., & Bryant, P. E. (2007). Children's cognitive development and learning. In *Research report 2/1a The Primary Review*. Cambridge: University of Cambridge.
Hastings, N., & Chantry, K. (2002). *Reorganising primary classroom learning*. Buckingham: Open University Press.
Hofstede, G., & Hofstede, J. (2005). *Cultures and organisation-software of the minds* (2nd ed.). New York: McGraw-Hill.
Howe, C. (2010). *Peer groups and children's development: Psychological and educational perspectives*. Oxford: Wiley-Blackwell.
Howe, C., & Tolmie, A. (2003). Group work in primary school science: Discussion, consensus and guidance from experts. *International Journal of Educational Research, 39*(1–2), 51–72.

Howe, C., Tolmie, A., Duchak-Tanner, V., & Rattray, C. (2000). Hypothesis testing in science: Group consensus and the acquisition of conceptual and procedural knowledge. *Learning and Instruction, 10*(4), 361–391.

Johnson, D. W., & Johnson, R. (2003a). *Joining together: Group theory and research*. Boston: Allyn and Bacon.

Johnson, D., & Johnson, R. (2003b). Student motivation in co-operative groups: Social interdependence theory. In R. Gillies & A. Ashman (Eds.), *Co-operative learning: Social and intellectual outcomes of learning in groups* (pp. 136–176). London: Routledge/Falmer.

Kazemi, E., & Stipek, D. (2000). Promoting conceptual thinking in four upper-elementary mathematics classrooms. *The Elementary School Journal, 102*, 59–80.

Kennedy, P. (2002). Reading literature in Hong Kong: the beliefs and perceptions of three groups of adult learners. In J. Cribben & P. Kennedy (Eds.), *Lifelong learning in action: Hong Kong practitioners' perspectives* (pp. 219–228). Hong Kong: Hong Kong University Press.

Kennedy, P. (2010). Learning cultures and learning styles: Myth-understandings about adult (Hong Kong) Chinese learners. *International Journal of Lifelong Education, 21*(5), 430–445.

Keppell, M., & Carless, D. (2006). Learning-oriented assessment: A technology-based case study. *Assessment in Education, 13*(2), 179–191.

Kulik, J. A., & Kulik, C.-L. C. (1992). Meta-analytic findings on grouping programs. *The Gifted Child Quarterly, 36*, 73–77.

Kutnick, P. (1988). *Relationships in the primary school classroom*. London: Paul Chapman Press.

Kutnick, P., & Blatchford, P. (2014). *Effective group work in primary school classrooms*. Dordrecht: Springer.

Kutnick, P., & Manson, I. (1998). Social life in the classroom: Towards a relational concept of social skills for use in the classroom. In A. Campbell & S. Muncer (Eds.), *The social child*. Hove: The Psychology Press.

Kutnick, P., Blatchford, P., & Baines, E. (2002). Pupil groupings in primary school classrooms: Sites for learning and social pedagogy? *British Educational Research Journal, 28*(2), 189–208.

Kutnick, P., and Brighi, A. with Avgitidou, S., Genta, M. L., Hannikainen, M., Karlsson-Lohmander, M., & Ortega Riuz, R. (2007). The role and practice of interpersonal relationships in European early education settings: sites for enhancing social inclusion, personal growth and learning? *European Early Childhood Education Research Journal, 15* (3), 379–406.

Kutnick, P., Ota, C., & Berdondini, L. (2008). Improving the effects of classroom groupwork with young children; attainment, attitudes and behaviour. *Learning and Instruction, 18*(1), 83–95.

Kutnick, P., Mok, I., Fung, D., Lee, P-Y., Lai, V., & Li, J. (in preparation). *Effective group work for mathematics understanding in Hong Kong primary school classrooms*.

Lewin, K. (1946/1948). Action research and minority problems. In G. W. Lewin (Ed.), *Resolving social conflicts* (pp. 201–216). New York: Harper and Row.

Li, J. (2003). US and Chinese cultural beliefs about learning. *Journal of Educational Psychology, 95*(2), 258–267.

Littleton, K., Mercer, N., Dawes, L., Wegerif, R., Rowe, D., & Sams, C. (2005). Thinking together at Key Stage 1. *Early Years: An International Journal of Research and Development, 25*(2), 165–180.

Liu, J. (2002). Negotiating silence in American classrooms: Three Chinese cases. *Language and Intercultural Communication, 2*(1), 37–54.

Lou, Y., Abrami, P. C., Spence, J. C., Poulsen, C., Chambers, B., & d'Apollonia, S. (1996). Within-class grouping: A meta-analysis. *Review of Educational Research, 66*(4), 423–458.

Marton, F., Dall'Alba, G., and Tse, L.K. (1996). Memorising and understanding: The keys to the paradox. In D. Watkins and J. Biggs (Eds.) *The Chinese learner: Cultural, psychological and contextual influences* (69–84). Hong Kong: CERC and ACER

Mercer, N., & Littleton, K. (2007). *Dialogue and development in children's thinking – a sociocultural approach*. London: Routledge.

Mercer, N., Wegerif, R., & Dawes, L. (1999). Children's talk and the development of reasoning in the classroom. *British Educational Research Journal, 25*(1), 95–111.
Mercer, N., Dawes, L., Wegerif, R., & Sams, C. (2004). Children's talk and the development of reasoning in the classroom. *British Educational Research Journal, 25*, 95–111.
Messier, W.P. (2003). Traditional teaching strategies versus cooperative teaching strategies: Which can improve achievement scores in Chinese middle schools? http://web.hku.hk/¬cel2004/Proceedings/064-WilliamPMessier.doc. Accessed 28 Jan 2014.
Mirza, N. M., & Perret-Clermont, A.-N. (2009). *Argumentation and education: Theoretical foundations and practices*. New York: Springer.
Mok, I. A. C., & Morrison, P. (2000). The metamorphosis of the 'virtuoso': Pedagogic patterns in Hong Kong primary mathematics classrooms. *Teaching and Teacher Education, 17*(4), 455–468.
Mortimore, P., Sammons, P., Stoll, L. D., & Ecob, R. (1988). *School matters: The junior years*. Wells: Open Books.
Mullis, I. V. S., Martin, M. O., Foy, P., & Arora, A. (2012). *TIMSS 2011 results on mathematics*. Chestnut Hill: TIMSS and PIRLS International Study Center, Boston College.
Murphy, D. (1987). Offshore education: A Hong Kong perspective. *Australian Universities Review, 30*(2), 43–44.
Nelson, G. (1995). Cultural differences in learning styles. In J. Reid (Ed.), *Learning styles in the ESL/EFL classroom*. Boston: Heinle and Heinle.
Nguyen, P-M., Terlouw, C., & Pilot, A. (2005). 'Cooperative learning vs. Confucian Heritage Culture's collectivism. *Asia-Europe Journal*, *3* (3)' as reported in Nguyen, P-M., Terlouw, C., & Pilot, A. (2006). Culturally appropriate pedagogy: The case of group learning in a Confucian Heritage Culture context. *Intercultural Education, 17* (1), 1–19.
Nguyen, P.-M., Terlouw, C., & Pilot, A. (2006). Culturally appropriate pedagogy: The case of group learning in a Confucian Heritage Culture context. *Intercultural Education, 17*(1), 1–19.
Nguyen, P.-M., Elliot, J., Terlouw, C., & Pilot, A. (2009). Neocolonialism in education: Cooperative learning, Western pedagogy in an Asian context. *Comparative Education, 45*(1), 109–130.
O'Donnell, A. M., & King, A. (Eds.). (1999). *Cognitive perspectives on peer learning*. Mahwah: Erlbaum.
Organisation for Economic Co-operation and Development. (2010). *What students know and can do: Student performance in reading, mathematics and science*. Paris: OECD Publications.
Oxford, R., & Anderson, N. (1995). A cross-cultural view of learning styles. *Language Teaching, 28*, 201–215.
Oxford, R., & Bury-Stoke, J. (1995). Accessing the use of language learning strategies worldwide with ESL/EFL version of the strategy for language learning. *System, 23*(2), 153–175.
Pepitone, E. (1980). *Children in co-operation and competition*. Lexington: Lexington Books.
Perret-Clermont, A.-N. (1980). *Social Interaction and Cognitive Development in Children*. London: Academic.
Piaget, J. (1928, trans. 1959). *Language and thought of the child*. London: Routledge and Kegan Paul.
Piaget, J. (1971). *Science of education and psychology of the child*. London: Routledge and Kegan Paul.
Piaget, J., & Inhelder, B. (1972). *The psychology of the child*. New York: Basic Books.
Report, P. (1967). *Children and their primary schools*. London: Her Majesty's Stationary Office.
Reznitskaya, A., Kuo, L.-J., Clark, A.-M., Miller, B., Jadallah, M., Anderson, R., & Nguyen-Jahiel, K. (2009). Collaborative reasoning: A dialogic approach to group discussions. *Cambridge Journal of Education, 39*(1), 29–48.
Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. New York: Oxford University Press.
Rogoff, B. (2003). *The cultural nature of human development*. Oxford: Oxford University Press.
Rojas-Drummond, S., & Mercer, N. (2003). Scaffolding the development of effective collaboration and learning. *International Journal of Educational Research, 39*(1–2), 99–111.

Rosenshine, B., Meister, C., & Chapman, S. (1996). Teaching students to generate questions: A review of the intervention studies. *Review of Educational Research, 66*, 181–221.

Roseth, C. J., Fang, F., Johnson, D. W., & Johnson, R. T. (2006). *Effects of cooperative learning on middle school students: A meta-analysis*. San Francisco: American Educational Research Association Annual Conference.

Rowland, T., Huckstep, P., & Thwaites, A. (2003). The knowledge quartet. *Proceedings of the British Society for Research into Learning Mathematics, 23*(3), 97–102.

Salili, F., & Lai, M. K. (2003). Learning and motivation of Chinese students in Hong Kong: A longitudinal study of contextual influences on students' achievement orientation and performance. *Psychology in the Schools, 40*(1), 70–81.

Sjard, A., & Kieran, C. (2001). Cognition as communication; rethinking learning-by-talking through multi-facted analysis of students' mathematical interactions. *Mind, Culture, and Activity, 8*, 42–76.

Slavin, R. (1995). *Cooperative learning* (2nd ed.). Boston: Allyn and Bacon.

Slavin, R., Hurley, E. A., & Chamberlain, A. (2003). Cooperative learning and achievement: Theory and research. In W. M. Reynolds & G. E. Miller (Eds.), *Handbook of psychology: Educational psychology* (Vol. 7, pp. 177–197). New York: Wiley.

Stevenson, W., & Lee, S. (1997). The East Asian version of whole-class teaching. In W. K. Cumming & P. G. Albach (Eds.), *The challenge of Eastern Asian education* (pp. 33–49). Albany: State University of New York Press.

Su, 1995 as cited in Oxford, R., & Anderson, N. (1995). A cross-cultural view of learning styles. *Language Teaching, 28*, 201–215.

Tang, C. (1996). Collaborative learning. Western misconceptions of the Confucian-heritage learning culture. In D. Watkins & J. Biggs (Eds.), *The Chinese learner: Cultural, psychological and contextual influences* (pp. 183–204). Hong Kong: CERC and ACER.

Tang, C., & Biggs, J. (1996). How Hong Kong students cope with assessment. In D. Watkins & J. Biggs (Eds.), *The Chinese Learner: Cultural, psychological and contextual influences* (pp. 159–182). Hong Kong: CERC and ACER.

Tang, T., & Williams, J. (2000). *Who have better learning styles – East Asian or Western students?* Proceedings of the 5th ELSIN conference, Hertford UK.

Tharp, R., & Gallimore, R. (1988). *Rousing young minds to life: Teaching, learning and schooling in social context*. New York: Cambridge University Press.

Topping, K. (2005). Trends in peer learning. *Educational Psychology, 25*(6), 631–645.

Vygotsky, L. (1962). *Thought and language*. Cambridge, MA: MIT Press.

Vygotsky, L. (1978). *Mind and society: The development of higher mental processes*. Cambridge, MA: Harvard University Press.

Wagner, L. (1982). *Peer teaching: Historical perspectives*. Westport: Greenfield Press.

Watkins, D., & Biggs, J. (Eds.). (1996). *The Chinese learner: Cultural, psychological and contextual influences*. Hong Kong: CERC and ACER.

Webb, N. M., & Farivar, S. (1994). Promoting helping behaviour in cooperative small groups in middle school mathematics. *American Educational Research Journal, 31*, 369–395.

Webb, N., & Mastergeorge, A. (2003). Promoting effective helping behaviour in peer directed groups. *International Journal of Educational Research, 39*(1–2), 73–97.

Webb, N., Franke, M. L., Tondra, D., Chan, A., Freund, D., Shein, P., & Melkonian, D. (2009). Explain to your partner: Teacher instructional practices and students' dialogue in small groups. *Cambridge Journal of Education, 39*(1), 49–70.

Webb, N., Franke, M. L., Ing, M., Wong, J., Fernandez, C. H., Shin, N., & Turow, A. C. (2014). Engaging with others' mathematical ideas; interrelationships among student participation, teachers' instructional practices and learning. *International Journal of Educational Research, 63*, 79–83. doi:10.1016/j.ijer.2013.05.02.

Wertsch, J., & Sohmer, R. (1995). Vygotsky on learning and development. *Human Development, 38*, 332–337.

Whitty, G., Power, S., & Halpin, D. (1998). *Devolution and choice in education*. Melbourne: Australian Council for Educational Research.

Wilkins, A. (2011). Co-operative learning – A conceptual framework. *Journal of Co-operative Studies, 44*(3), 5–14.

Wong, W. (1996). *How do Hong Kong students learn? Implications for teacher 13*. Hong Kong: Educational Technology Centre, Hong Kong University of Science and Technology.

Wong, T.S. (2001). Group work in science learning – International scenarios and implications for teaching and learning in Hong Kong. *Asia-Pacific Forum on Science Learning, 2* (2), Article 9.

Wong, N.-Y., Rowland, T., Chan, W.-S., Cheung, K.-L., & Han, N.-S. (2008, July). *To what extent are our mathematics teachers equipped with adequate mathematics to teach? A comparative perspective*. Paper presented at the 11th international congress on mathematical education, Monterrey, Mexico.

Wood, D. (1998). *How children think and learn: The social contexts of cognitive development* (2nd ed.). Oxford: Blackwell.

Yeh, Y., Yeh, P., & Hseih, C. (2000). The development of "the test of critical-thinking skills for primary and secondary school students". *Psychological Testing, 47*(1), 27–46.