

Chapter 2

Groups and Classrooms

2.1 Introduction

In Chap. 1 we saw evidence that children in primary schools spend the majority of their classroom learning time sitting in small groups and working with the teacher in various sized groups. Yet studies of classroom activity in primary schools considered in detail in this chapter provide evidence that peer-based learning and group work is rarely used. This situation is compounded by the concerns of teachers, children and parents that children's learning can be inhibited and distracted by their surrounding peers. When discussing the possible benefits of peer and interactive learning, we have often encountered a resistance to the idea that pupils can have a productive learning relationship with each other. It is of little surprise, therefore, if the practice of group work in primary school classrooms often falls far short of its potential to extend children's cognitive development and work with classroom peers in an inclusive manner.

In this chapter we first set out what currently characterizes learning and development in classrooms with special regard to pupil groups. The bulk of the chapter then describes knowledge about group work in terms of two main forms of research approach: firstly, experimental studies concerning co-operative and collaborative groups and, secondly, naturalistic studies of groups undertaken in 'authentic' classrooms. We then continue to report on further studies that describe characteristic classroom social pedagogic contexts of learning for children.

2.2 Background Issues in Promoting Development and Understanding via Effective Group Work in Classrooms: Understanding Pedagogy and Opening the 'Black Box'

Resnick (2000) proposed an approach to pedagogy that she hoped would act as the basis of a new drive in educational reform. This approach should help to raise the cognitive competence and educational achievement of pupils in any classroom, especially the least educationally advantaged. Resnick identified two core features of

this approach to pedagogy: first, ‘knowledge-based constructivism’ that captures the interpretive, inferential basis of learning and provides learners with high quality material; and, second, a combination of social developmental and motivational theory which she describes as ‘effort-based learning’. Essentially, these features cover cognitive development and motivation respectively. Resnick argued that it is important not to socialize learners into unproductive views of their own learning and intelligence but to provide social space within the classroom where children’s learning can be supported incrementally via interactions with their teachers and peers. It is, thus, important for learners to acquire robust and enduring ‘habits of mind’ in which effort and the ability to learn from others are naturally seen as important in learning. Achieving a strategic balance between these ‘habits of mind’ in the classroom is vital for effective teaching and learning but is one of the most difficult dilemmas facing today’s teachers (Baines et al. 2003).

In addition to the two features of pedagogy identified by Resnick, we emphasize a third feature. Pedagogy in a classroom context is not just about the teacher enhancing the learning of a single person; it includes all pupils in the class and takes place within particular social, learning and physical constraints (e.g., such as class size and composition). While we acknowledge the importance of Resnick’s focus on cognitive development and motivation, this additional feature involves a systematic appreciation of social contexts within classrooms. For the most part the importance of this third feature has been given little thought beyond pleas to create positive classroom climates (Barron 2003), yet it is vital that the organization of pupil learning must be strategically constructed in relation to social interaction with teachers and peers as well as particular learning tasks. As a result of the concern regarding the role of social context in learning, this chapter develops the idea of a social pedagogy of classrooms, that is, a framework for understanding how the social context of relationships can support or inhibit learning (Blatchford et al. 2003; Kutnick et al. 2002).

As we discussed in Chap. 1, and based on the mapping results described there, classroom contexts encompass a number of dimensions including: the number of children within a classroom, where children are seated, the size of seating-based pupil groups, the composition of pupil groups, the nature of the interaction between members within any classroom group, and the type of learning task that is being undertaken by a group. From our social pedagogic orientation all these dimensions are important in affecting the nature and quality of the teaching and learning experience for teachers and pupils. In particular, if these relationships are planned strategically then learning experiences are likely to be more effective. Without strategic planning, these contexts may actually hinder the effectiveness of learning experiences. Unfortunately, naturalistic studies of classrooms, described below, suggest that the relationships between social contexts and learning are often unplanned and the ‘social pedagogic’ potential of classroom learning is therefore unrealized.

This chapter introduces a further concern: Our knowledge of and strategic planning for group work should to a large degree be based upon ‘authentic’ classroom studies. Although there have been a number of insights from more ‘experimental’ studies of group work and learning, a number of such studies tend to be based on

relatively artificial situations and thus may have limited relevance to everyday classroom activity. We argue that attention to the everyday classroom context is important because it allows recognition of the complex nature of actions in classrooms and acknowledges what is happening to pupils and the teacher at the same time, rather than artificially created situations or situations relating to only a small portion of the pupils in the classroom. Authenticity also allows for recognition of the multiplicity (Doyle 1986) of events happening in classrooms at any point in time. Attending to ‘authentic’ classrooms also acknowledges that classroom actions and activities are built-up and developed over a long period of time (as described by Boaler 2000; Howe 2010; and others)—certainly over a term or school year rather than a two to four week intervention. Put another way, an authentic approach sees group working within the classroom as a social pedagogic (Blatchford et al. 2003) context for teaching and learning.

2.3 Experimental and Naturalistic Studies of Group Work in Primary School Classrooms

Reviews of group work in classroom studies can be divided into two broad categories: experimental approaches and naturalistic descriptions (Baines et al. 2008). Experimental approaches tend to focus on the use of co-operative or collaborative learning strategies and often evaluate learning related to a specific, short-term intervention. Naturalistic studies describe the activities and interactions that characterize authentic classroom life, allowing an assessment to be made of the relationships between seating, grouping arrangements, types of learning task and interpersonal relationships.

2.3.1 Experimental Research

Experimental studies tend to be informed by predominantly social psychological and socio-cultural orientations (as introduced in Chap. 1) and tend to be characterized by co-operative and collaborative learning studies. As we will show, while co-operative learning studies may provide positive educational effects for children, there are some serious limitations in the structure of the studies and in the generalizations that may be made about the outcomes of these studies. From these limitations, we move to less traditional experimental studies that involve the development and use of collaborative learning strategies amongst children, primarily in classrooms. From an authentic classroom perspective, these collaborative studies also have their shortcomings.

Co-operative learning research has demonstrated that co-operative approaches can produce positive learning effects on pupil achievement, promote positive attitudes to schooling and improve social climate within classrooms (Johnson and Johnson 2003a; Pepitone 1980; Slavin et al. 2003). The majority of this research

is based on the use of small groups in a classroom or non-classroom setting, and explores the effects of a highly structured co-operative framework within which a particular curriculum topic is introduced for learning. These studies typically structure children into particular types of grouping. Groupings are often composed to represent a heterogeneous cross-section of all children in a class—with a mix of males and females, high and low attainment, and a mix of ethnic and racial groups to promote classroom inclusion and overcome status differences between children (Cohen and Lotan 1995). These studies have been evaluated in a number of meta-analytic reviews (Kulik and Kulik 1992; Lou et al. 1996; Roseth et al. 2006) which provide evidence of the beneficial effect of co-operative group work on pupil learning. Classroom-based studies of co-operative learning (see Slavin 1995; Johnson and Johnson 2003b) consistently show advantages for co-operative group-based learning in classrooms, especially when compared to ‘control’ classes where the pupils study the same curriculum topics but under traditional, teacher-directed learning practices. Two of the most consistent findings from these comparative studies are that: a) pupils learn an equivalent amount of curriculum material in co-operative learning as opposed to traditionally taught classrooms—and sometimes more learning takes place in co-operative classes; and b) development of within-class friendships and positive attitudes to schooling are significantly more likely to take place in co-operative as opposed to traditionally taught classes.

Readers must be mindful that co-operative learning studies and approaches to classroom teaching are not as simple as placing children in heterogeneous groups and asking pupils to undertake a learning task. Teachers usually require a high level of training for co-operative learning (Gillies and Kahn 2009; Webb et al. 2009) such that they can structure their classes and learning tasks to be undertaken in a co-operative manner. Teachers must create heterogeneous pupil groups and be able to break down aspects of the learning task such that each group member has a clear learning role and is able to support and share knowledge with other members of the group. The teacher will also need to model co-operative behaviour and provide support for children when they engage in positive co-operative learning practices. Moreover, teachers who use co-operative learning approaches in their classrooms will need to explain and support their actions to their colleagues who may criticize co-operative learning classrooms as noisy and disorganized when compared to traditional classrooms (Cowie and Rudduck 1988).

While there may be a range of positive benefits to experimental co-operative learning in and out of classrooms, there are also a number of limitations associated with these studies. Kutnick et al. (2005) argue that classroom-based studies of co-operative learning tend to be undertaken over a relatively short time period (of days or weeks) rather than over school semesters or even a full year in school. Co-operative learning studies tend to be based on input-output models (sometimes referred to as ‘black box’ studies) which do not explain why co-operative learning may be effective. A further limitation of co-operative learning studies has been recognized in the meta-analytic reviews described above. These reviews often did not distinguish between different curricula contexts and task demands—factors that may

partly explain different levels of reported success (Creemers 1994). Little attention has been given to variations between the different ages of pupils within groups (Lou et al. 1996) and this may be because very few co-operative learning studies have been undertaken with children younger than 9 years of age and no differentiation is made between children's initial levels of cognitive development before engaging in the co-operative learning activity. Also, consideration of the age at which co-operative learning may begin will require a distinct motivation for children to learn with/from others (as opposed to learning motivation in traditional classrooms, Ames 1981), and the implementation of co-operative learning will require that children demonstrate skills of speaking and listening with peers (Barron 2003) and sharing their interpersonal space (Teasley and Roschelle 1993). Unless a motivation to learn co-operatively is supported by the teacher and interpersonal communication skills are taught within the class, co-operative tasks will have limited effects on learning (Gillies and Kahn 2009). Finally, experimental studies provide insight into a range of co-operative learning approaches and techniques associated with the enhancement of cognitive learning amongst children working in small groups in the classroom, but, importantly, the imposed co-operative grouping and task structures may not always meet the needs of teachers operating in authentic classroom settings where multiple groups and learning tasks may be undertaken simultaneously (Blatchford et al. 1999; Galton et al. 1999). The complexity of actions and interactions in authentic classrooms has led Doyle (1986) to argue that many classroom teachers may avoid co-operative learning tasks because of management problems that they are likely to encounter when considering the learning of all pupils in the classroom.

An allied form of experimental research is found in studies that address aspects of collaborative learning. As opposed to the interdependence, quality contact and a joint end product that characterizes co-operative learning, collaborative learning studies engage children in working together in the development of joint communication and support (introduced in Chap. 1). Such collaborative activities, often in the form of problem solving, have been found to encourage high levels of explanation through vehicles such as 'elaborated' talk. In one sense, collaborative learning studies move beyond the co-operative learning 'black box' as these studies focus on process models wherein the use of hierarchical and/or mutual scaffolding bring about cognitive enhancement within groups (Rogoff 1990; Rosenshine et al. 1996) and the extent to which pupils accept ownership for the consequences of joint decisions (Galton and Williamson 1992).

A number of innovative collaborative learning studies address interpersonal communication and talk among group members (for example, Webb and Mastergeorge 2003; Howe and Tolmie 2003; Mercer 2000) and quality interactions between classroom teacher and a particular group of pupils (Adey et al. 2002). From descriptive and correlational studies, early research on collaborative learning (for example Eggleston et al. 1976; Forman and Cazden 1985) found that children who shared information between themselves were likely to increase their (often subject-based) understanding. As previously noted, further studies have identified that children who shared explanations and made reason-based judgements in their interactions were more likely to enhance their cognitive understanding. Yet, as noted by Reznitskaya et al. (2009),

children rarely use these types of communication in their classrooms; and this has led some researchers (especially Mercer and Littleton 2007; Webb et al. 2009) to initially undertake an approach that helped them ascertain what types of communication children use in classrooms and how this communication could be changed to support increased understanding among children. Mercer (2000), in particular, reported that among the three predominant types of interpersonal child-based communication that characterized primary school classrooms, ‘elaboration’ was least likely to be found; and elaboration was the one form of communication most likely to be associated with children’s cognitive understanding. In a similar manner, research by Howe and colleagues (see especially Howe et al. 2000) found that the use of explanations between children was highly associated with cognitive development, but explanations were rarely found in the classroom. From this approach, programmes to enhance the use of collaborative learning were created. These programmes drew upon encouragement of elaborated talk (Mercer et al. 2004), helping behaviour (Webb and Mastergeorge 2003), argumentation (Anderson et al. 1997; Mirza and Perret-Clermont 2009) and supportive questioning among children and teachers (O’Donnell and King 1999). And, while a number of successful studies support the relationship between raising the levels of elaborated/explanational talk among children and their increased levels of understanding (identified above), we are reminded of the point made in Chap. 1 that there are few rigorous or controlled studies of collaborative learning (Reznitskaya et al. 2009) that actually demonstrate that a collaborative problem solving approach will be successful in all classrooms (Barron 2003; Hogan et al. 2000; Sfard and Kieran 2001)

Another important point has arisen from the above studies. In collaborative learning studies that have been applied in classrooms, there is a requirement that the teacher introduces collaborative techniques in a supportive manner and that the teacher serves as a good model for collaborative behaviours in the classroom. Teachers, as reviewed by Webb et al. (in press), can help to encourage children to explore their own thinking (from King 1999); encourage dialogue by interacting with children (from Gillies 2004); can promote explanations via questioning (Kazemi and Stipek 2000); as well as prepare programmes that support elaborated talk (Mercer et al. 1999). Yet, as noted by Gillies and Kahn (2009), teachers will have to be mindful that the model that they present to their class can be transferred and used by children with their peers as well as between children and their teacher. Gillies and Kahn (2009) and Kutnick and Berdondini (2009) also recognize that teachers who have been introduced to or trained in collaborative or co-operative learning techniques for their classrooms will be more likely to take on ownership and effective practice. However, there is a large amount of variation in the effectiveness of results in these teachers’ classrooms which appears to be related to the extent to which teachers are committed to the values and practices embodied in their training. We note two further limitations to the generalizability of co-operative and collaborative learning approaches in classrooms. First, a number of approaches tend to focus on the teacher’s interaction with one small group at a time and do not tend to consider what is happening with all of the groups that populate the classroom. In order for the non-teacher directed groups to work autonomously from the teacher, the pupils must have the skills to help one another

and scaffold each other's activity. Without this ability to work autonomously from the teacher, children may repeat the actions described by Bennett et al. (1984) over 25 years ago—that is, when they encounter a problem, pupils will go directly to the teacher and this action will distract the teacher from the work that she may be undertaking with her focus group. The second limitation, identified only recently (Salonen et al. 2005; Kutnick and Berdondini 2009), is the implicit expectation that children working in co-operative and collaborative approaches will relate positively to all members of their learning group. Salonen et al. (2005), in an explanation similar to Barron (2003) regarding the ineffectiveness of many co-operative and collaborative learning studies, identify that social/interpersonal relational issues can (and often do) inhibit cognitive-based communication between children in classrooms. Further, as will be seen in the description of naturalistic classroom studies, children rarely display this positive relationship with all children in their class, and tend to focus on preferred friendships when they need to work with other children. We argue that attending to potential limitations associated with the use of co-operative and collaborative learning approaches helps in the creation of a programme for more effective group work in whole classes, and this has informed the SPRinG approach described in Chap. 3 through 7. Before studies of effective group work are addressed, however, we turn to the second main form of research: naturalistic studies of classrooms in primary schools.

2.3.2 *Naturalistic Studies*

By way of contrast to experimental studies, naturalistic studies have been designed to account for the whole class context and include a number of sociological concerns, especially regarding social inclusion and participation of all children within the classroom. Naturalistic studies do not involve experimental imposition of a particular approach to classroom learning but provide a naturalistic view involving all children and the teacher. As such naturalistic studies therefore add much more insight into the multiple activities that may take place in the classroom as well as the social pedagogic complexity that characterizes everyday classroom learning. We divide our description of naturalistic classroom studies into two phases: studies between 1980 and 2000 which identify problems associated with group work in classrooms, and post-2000 studies which identify classrooms as a social pedagogic context.

2.3.2.1 First Phase of Naturalistic Classroom Studies

By way of an initial summary, three key themes arise from the first phase of naturalistic classroom studies: (1) while children experience much of their classroom learning activity seated in groups, these groups may vary in size and with the phase of the lesson; (2) often children do not work productively in their seating groups; and (3) teachers have little training or confidence in establishing and supporting group work within their classrooms. These themes were recognized in the UK over 30 years

ago (e.g., Galton et al. 1980) and were similarly recognized in other countries (for example, in the US—Peterson et al. 1985). The themes appear to persist over time—this was confirmed when Galton and colleagues undertook a repetition of their 1980 study 20 years later (Galton et al. 1999) and found few differences in the classroom settings observed.

In both of Galton's studies, and in line with what we saw in Chap. 1, classroom groups typically included: large groups, such as the whole class or half of a class assigned to undertake a single activity; small groups, usually 4 to 6 children, seated around a classroom table; and pairs or triads, sometimes sharing a table with other pairs. Additionally, pupils were also found working as individuals, sometimes working in their own 'space' but more often sharing table space with other individuals. It was often observed that several different sizes of pupil groups could be found in a classroom at any time (similar to the map in Chap. 1). In this connection, Galton et al. (1980) identified a key social pedagogic concern that will be considered throughout this chapter: While over 80 % of children's classroom time is spent seated in a small group, in only 5 % of this time were groups asked to undertake a co-operative or collaborative learning task! Galton et al. (1980) further found that approximately 85 % of children's learning activities were assigned to the individual child—another instance of classroom seating contrasting with ongoing learning practices.

From Galton's study (as well as others, for example, Blatchford et al. 1999), we are also made aware that different group sizes tend to be associated with distinct phases of a lesson. Classroom lessons are often typified as taking place in three phases. Large groups or the whole class are brought together by the teacher at the beginning of a lesson to introduce lessons, draw children's knowledge together and for general instruction. The central 'work' aspect of a lesson often involves children seated or working individually in smaller groups. The final part of the lesson often involves whole class recap and revision. If there are more than three phases to a lesson, this is usually because the teacher has called the whole class together during the work phase to keep the class on track or to reorient the class into a new work direction. As we will see, simple descriptions of lesson phases do not do justice to our social pedagogic understanding of the complexity of grouping and learning in primary school classes.

Naturalistic studies have found that all types of learning tasks previously described in Chap. 1 (incremental/cognitive, enrichment, restructuring and practice) can be identified in primary school classrooms (Bennett et al. 1984; Galton et al. 1980; Mortimore et al. 1988; and Tizard et al. 1988). Yet, children are most likely to be found seated at relatively small tables and in small groups. This finding indicates that teachers may not have considered a pedagogic relationship between group size and learning task within their classrooms. A predominance of small group seating may hinder children's approach to a number of learning tasks, especially practice tasks where talk amongst children seated in small groups may distract them (Kutnick and Jackson 1996). Another concern connects group size and distribution of furniture in the classroom. Dreeben (1984) found that children's reading groups were not composed in relation to pupils' reading task, but by the number of tables and children found in the classroom. If there were twenty-five children in a class and five

tables, teachers simply seated five children around each table. Hastings and Chantry (2002) also observed that teachers tend not to move tables around in their classroom and, therefore, offer little opportunity to accommodate individual, paired, small or large group seating for diverse learning tasks—the same small group of four or five children may be asked to undertake an enrichment/co-operative task and later the same children seated in the same positions may be asked to undertake an individual practice task. Other studies such as Ireson and Hallam (2001) noted that seating in small groups is often associated with differentiation of pupils by attainment; that is, children are often seated with others of a similar level of attainment which may or may not help their approach to learning tasks. This is discussed more fully later in this chapter.

Taking this lack of pedagogic connection between group size and learning task into account, it may not be surprising to find that many children and teachers do not like being seated in or working in groups (Cowie and Rudduck 1988). Children can feel insecure when told to work in groups (Galton 1990). Pupils who feel threatened by the presence of peers often respond by withdrawing from participation in their groups or relying on the teacher to give legitimacy to their behaviours within groups. Similarly, many teachers do not like group work because they are concerned about loss of classroom control from increased talk and the potential for disruption and off-task behaviour by pupils. Teachers appear to be very conscious of how their colleagues may feel about these ‘weaknesses’ in their teaching (Cowie and Rudduck 1988). Teachers have further expressed the view that pupils, particularly boys, will misbehave during group work and that discussion within group work may cause conflict between pupils (Cowie 1994). Teachers have a belief that some children are not able to learn from one another (Lewis and Cowie 1993). According to Lou et al. (1996), some teachers feel that only the more academically are able to profit from group work unless teachers take the time and precautions to overcome challenges of status hierarchies and lack of children’s support for group work in the classroom (Cowie and Rudduck 1990; Cohen and Intilli 1981). Group work has been seen to be very time consuming and it is difficult to change individually-based assessment to group-based assessment (Plummer and Dudley 1993).

When teachers were specifically asked whether they had been trained to make use of the various pupil groupings in their classroom, Blatchford et al. (1999) found that exactly one-half of teachers questioned said they had received training regarding group working, and this was mainly in their initial teacher training courses. Importantly, less than a third of teachers actually provided any group work training for their pupils. When children are assigned to work as groups they are unlikely to be provided any training for group work even though group assignments regularly involve simple sharing of resources and low quality talk (Bennett and Dunne 1992). Similarly, Galton and Williamson’s study (1992) noted that little attention was given to setting up groups, guiding group planning or generally enabling children to function as a group within the classroom. Rather, pupils were assigned to groups with an emphasis on the task outcome rather than on the processes whereby the outcome could be achieved. And teachers themselves reported problems that included concern about the selection and design of effective

tasks and task structures that support or legitimize group interaction (Bennett and Dunne 1992). Results from the first phase of naturalistic studies therefore sharply contrast with the relative success of experimental studies concerning group work, reviewed above. This phase identified problems in the effective use of groups which stem from lack of coordination between the size of groupings, their composition, pedagogic purpose of learning task and interactions among group members.

As a result of the above studies, we have identified five core dimensions that are fundamental to our view of a social pedagogy for effective learning in the classroom. The core dimensions are: the size and number of groupings in the class; the working arrangement between grouping members; adult support of groupings; grouping composition; and the curriculum area and task type undertaken by the grouping. These dimensions will provide the basis for our discussion of the more focused phase one naturalistic studies.

Size and Number of Groupings in Classrooms

We have already seen that a variety of group sizes may be found in classrooms and that many of these group sizes may be evident in one class at the same time. The sizes include: individuals, pairs, small and large groups and whole class. The presence of these groups does not mean that teachers effectively co-ordinate their teaching and learning tasks with them. Phase one studies show a number of problems associated with a simplistic use of small groups. When new cognitive knowledge and skills is introduced into the classroom, children have been found in a variety of group sizes (Bennett et al. 1984; Galton et al. 1999) and it was most likely that the teacher was the person who introduced and controlled discussion with regard to this new knowledge and skills, thereby limiting the use and effects of peer discussion. Further, if children need to share and co-develop perspectives to enhance their cognitive understanding, they must be able to use exploratory talk (Mercer 2000) and elaborating and support skills (Webb 1989), yet these skills do not appear to be common among primary school children and there is little evidence that pupils have been trained to enhance the use of these skills. Thus, from phase one studies our knowledge of the number of groupings and their sizes in any classroom carries few implications for effective learning activity, and the role of adults as scaffolders and directors of pupil learning has to be more fully considered. An analysis of grouping size and number is also important in relation to the working arrangements of the group and the task that is undertaken (as identified in Table 1.1).

Types of Working Arrangements

Phase one studies identified that learning tasks take place within social and interactive contexts (Bennett and Dunne 1992; Galton and Williamson 1992; Kutnick and Rogers 1994). Sebba et al. (1995) have described social and interactive contexts in classrooms thus:



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